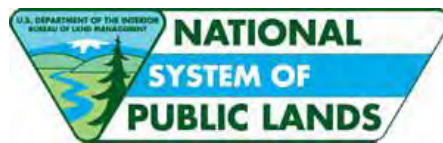

United States Department of the Interior
Bureau of Land Management
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Environmental Assessment
DOI-BLM-AZ-G010-2020-0014-EA

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Badger Den Allotment Permit Issuance



Editor's Note

An Errata Sheet to the Environmental Assessment and Land Health Evaluation is available in Appendix F of this Final Environmental Assessment # DOI-BLM-AZ-G010-2020-0014-EA.

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Acronyms and Abbreviations

§	Subpart
AMP	Allotment Management Plan
AUM	Animal Unit Month
AZGFD	Arizona Game and Fish Department
BLM	Bureau of Land Management
CFR	Code of Federal Regulation
DPC	Desired Plant Community
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
GIS	Geographic Information System
HCPC	Historic Climax Plant Community
IBLA	Interior Board of Land Appeals
ID Team	Interdisciplinary Team
LHE	Land Health Evaluation
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PL	Public land
RMP	Resource Management Plan
RFF	Reasonable Foreseeable Future
ROD	Record of Decision
SFO	Safford Field Office
T&C	Term and condition
T&E	Threatened and endangered
U.S.C.	United States Code
UG	Upper-Gila San Simon Grazing Environmental Statement

1.0 Purpose and Need

1.1 BACKGROUND

The Badger Den Allotment (No. 51100) is located in Graham County, Arizona. It is approximately 8 miles north of the town of Bowie. The Bureau of Land Management (BLM) administered grazing allotments that border the Badger Den Allotment include Tanque, 111 Ranch, Hackberry, Poppy Canyon, Murchison, Fan, and Willow (Figure 1, Appendix A). The Badger Den Allotment is comprised of 47,470 BLM-administered acres, 1,469 private land acres, and 61 State Trust land acres, totaling to 49,000 acres.

The elevation of the allotment is approximately 3,500 feet though the allotment ranges from 3,300 feet along the San Simon River up to 5,500 feet at Javelina Peak. The San Simon River, which usually only has water after moderate rain events, runs through the center of the allotment. Haekel Road, a paved BLM road, follows beside the San Simon River and crosses it once on the allotment. Range improvements include dams and dikes placed on the allotment for soils stabilization and rangeland health rehabilitation, seeding projects implemented to help with vegetation reestablishment, as well as many livestock grazing facilities such as fences dividing the allotment into pastures (Figure 2, Appendix A), fencing creating livestock enclosures, cattle guards, gates, wells, pipelines, water storage and troughs, dirt tanks, corrals, developed springs and other improvements (Figure 3, Appendix A). The Badger Den Allotment has been, and continues to be, the location for mining activities. There are active zeolite mining operations within Section 20 of Township 11 South, 29 East within the Badger Den Allotment boundary.

Livestock grazing is not currently authorized on the Badger Den Allotment. The allotment is allocated as available for livestock grazing through the Safford District Resource Management Plan (RMP), which incorporated the Upper Gila-San Simon Grazing Environmental Statement (UG). Livestock as defined by Title 43 Code of Federal Regulations (CFR) Subpart (§) 4100 means species of domestic livestock—cattle, sheep, horses, burros, and goats. Livestock grazing was previously authorized under Section 3 of the Taylor Grazing Act for the Badger Den Allotment. Past grazing permits incorporated use on all unfenced land ownerships controlled by the permittee and were billed for use on BLM-administered land on the basis of percent public land (PL). The PL identifies the percentage of forage available on BLM-administered land, not acreage. Past permitted use has changed over the years due to adjustments in carrying capacity or land exchanges as described below. The allotment was actively used until 1993 as described in the timeline below.

May 1, 1981 – To incorporate the Upper Gila-San Simon Grazing Environmental Statement (BLM, 1978) a decision was issued to adjust the authorized livestock use on the Badger Den Allotment from 2,796 Animal Unit Months (AUMs) or 292 cattle yearlong at 80 percent PL down to 1,395 AUMs (171 cattle/horses yearlong) at 68 percent PL over a 5-year period. The excess 1,401 AUMs which were removed were put into suspension.

October 23, 1981 – An amendment to the May 1, 1981 grazing decision was issued to incorporate a 19 head reduction that the Arizona State Land Department made to the state grazing lease within the allotment. This adjusted the reduction schedule to 1,386 AUMS (152 cattle/horses yearlong) at 76 percent PL over the 5 years. Reductions were fully implemented by March 1, 1986.

June 16, 1988 – A letter was written informing of a land exchange with the State of Arizona. The grazing permit was increased to 1,776 AUMs (152 cattle/horses yearlong) at 97 percent PL.

July 28, 1989 – A permit was signed allowing 150 cattle and 2 horses at 97 percent PL yearlong.

February 15, 1991 – A decision was issued to cancel the grazing permit and grazing preference in whole on the Badger Den Allotment for failure to adhere to the terms and conditions of the permit. The decision to cancel the grazing permit was not made for rangeland health purposes. The decision was appealed with a petition for stay allowing the permittee to continue grazing until the appeal was resolved.

February 5, 1993 – The Interior Board of Land Appeals (IBLA) dismissed the appeal and affirmed the BLM's decision to cancel the permit. The BLM enforced the decision to cancel the permit resulting in no livestock on the allotment with the exception of trespass livestock. There has not been an active grazing permit for the Badger Den Allotment since 1993, although the Badger Den Allotment has remained designated as available for grazing.

After cancellation of the permit and removal of livestock in 1993, there were several years of repeated willful trespass by the previous permittee with the last known case occurring in 2002. These intermittent trespass cases involved fewer livestock than were previously permitted. From 2002 to the current year of 2020, the allotment has been predominantly vacant as described below. The BLM staff continues to monitor the Badger Den Allotment to preclude prohibited acts.

In recent years, small numbers of incidental unauthorized livestock from neighboring allotments have been occasionally found on the Badger Den Allotment. When observed, livestock were not allowed to remain on the allotment and were promptly removed with repairs done to fencing as problematic areas were discovered. These incidents were documented and resolved informally through conversations with livestock owners. No resource damage was observed or documented by incidental unauthorized livestock use on the Badger Den Allotment.

The BLM-administered allotments adjacent to the Badger Den Allotment remain active. These grazing permits continue to be utilized without reduction to permitted livestock numbers.

1.2 LAND HEALTH EVALUATION

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

Arizona Standards for Rangeland Health are being achieved on the Badger Den Allotment for Standards 1 and 3. Riparian-Wetland Sites are not meeting Standard 2. Livestock grazing has not been permitted on the allotment since 1993 and the allotment has been predominantly underutilized and/or vacant since that time (see Section 1.1 above). Because of this period of rest on the allotment, current land health and vegetative conditions represent what the allotment is currently capable of achieving.

Due to the vacancy of the allotment, current livestock grazing is not contributing toward not meeting standards. Lands not meeting standards are a result of a number of factors including but not limited to historic overgrazing prior to the establishment of the Taylor Grazing Act and soil loss that resulted from that use, extended drought broken by intense thunderstorms, railroad and road development and subsequent effects on ecological function of hydrology, channel

excavation in 1883 from the Gila River up the San Simon Valley to confine flow, and environmental effects from an earthquake in 1887 (Humphreys, 2015; USDI BOR, 2000).

Properly managed livestock grazing has been considered in this evaluation as an acceptable use of uplands. Where ecological sites have transitioned to alternative stable states, managed grazing is identified as a practice in transitioning back to Historic Climax Plant Community (HCPC) if desired. Grazing use could be an important factor in riparian-wetland plant community health moving forward, and proper grazing management strategies should be considered such as deferment of livestock from sensitive riparian areas during critical growing periods to assist with production and maintenance of riparian-wetland plant communities.

Recommended management actions outlined in the LHE include:

1. Range Health Assessments noted roads and railroads as being contributing factors to the departure from reference conditions. In beneficial areas work could be done to divert collected waters from roadways and onto upland sites through use of rolling berms and other diversion structures.
2. Livestock grazing should be analyzed through proper National Environmental Policy Act (NEPA) protocol for proposed permit issuance. Consideration should be given to deferment of livestock from sensitive riparian areas during critical growing periods to assist with production and maintenance of riparian-wetland plant communities. Other issues identified through internal and public scoping should be addressed and solutions incorporated into the permit to ensure that rangeland health standards continue to be met in areas where standards are currently being met and that livestock grazing is not a contributing factor to not meeting standards.

1.3 PURPOSE AND NEED

The purpose of the action is to evaluate the application for a livestock grazing permit on the Badger Den Allotment.

The need for this action is established by the Taylor Grazing Act, the Federal Land Policy and Management Act (FLPMA), Fundamentals of Range Health (43 Code of Federal Regulations [CFR] 4180), and the Upper Gila-San Simon Environmental Statement as incorporated into the Safford District RMP to respond to an application for a livestock grazing permit on public land on the Badger Den Allotment.

The decision to be made is to either not issue or issue the term grazing permit; and if issued, determine the terms and conditions necessary for permit issuance to comply with the BLM's statutory obligations.

1.4 CONFORMANCE WITH LAND USE PLAN(S)

The Proposed Action is in conformance with the Safford District RMP and Environmental Impact Statement (EIS) as approved by the BLM SFO in the Partial Records of Decision (ROD) dated September 1992 and July 1994. In addition, The Safford District RMP incorporates by reference the Upper Gila-San Simon Grazing Environmental Statement (UG) (BLM 1978). the Safford District RMP was amended by the Decision Record for the Statewide Land Use Plan

Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration Environmental Assessment (EA) (BLM 1997).

The Proposed Action complies with the following management objectives set forth by the Safford District RMP and incorporated grazing environmental statement as well as land use plan amendments:

The Badger Den grazing unit combined two allotments (5110 and 5113) and included 39,130 public land acres and 9,690 other land ownership acres totaling 48,820 acres. The estimated grazing capacity was 1,598 AUMs (UG page A-17). When the grazing decision was issued for the Badger Den Allotment in 1981, the permit was issued as 1,395 AUMs due to the percent PL and AUMs reserved for wildlife.

Grazing Management (GM04) – In nine grazing units approximately 15,600 acres will be removed from livestock grazing. Areas proposed for this deferment of livestock grazing are critical watershed areas along the San Simon River, and critical riparian and aquatic habitat along Aravaipa Creek, Mescal Creek, Bonita Creek, and the Gila River. Decisions to remove grazing will be issued as soon as fences are constructed (UG p. 3 ROD).

GM12 – The general objective of the proposed action is to permit livestock to use the harvestable surplus of palatable vegetation—a renewable resource—and thereby produce a usable food product. The proposed livestock management program is based on the multiple-use management concept, which provides for the demands of various resource uses and minimizes the conflicts among those uses or activities. Although the various uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals (UG p. 1-6).

GM15 – Necessary range improvements would be completed before the management system would be put into practice (UG p. 1-8). A cooperative agreement between the BLM and the permittee would be established to identify what necessary range improvements would need to be completed before grazing is authorized. This includes base property and boundary fences and any range improvements necessary to facilitating the terms and conditions of the permit.

GM32 – Proper stocking is an essential principle of range management, which should precede or coincide with the initiation of any grazing management system. With stocking rates in balance with the proposed grazing capacities, utilization of key forage species in the key areas would average about 40 percent over a period of years. At a given stocking rate during years of high forage production (e.g., above normal rainfall) utilization in the use pasture might be as low as 20 percent. During years of low forage production utilization could be as high as 60 percent (UG p. 1-9).

GM49 – The public lands with critical riparian and aquatic habitats, including springs, would be fenced to permit the necessary specialized management. Alternative livestock water sources would be constructed outside these areas. These areas would be deferred from grazing for a minimum of 3 to 5 years to allow the propagation and improvement in condition of riparian vegetation (UG p. 1-24).

Vegetation Management (VM02) – Upland vegetation on public lands within the Safford District will be managed for watershed protection, livestock use, reduction of non-point source pollution, threatened and endangered species protection, priority wildlife habitat, firewood and other incidental human uses. Best management practices and vegetation manipulation will be used to achieve desired plant community management objectives. Treatments may include various mechanical, chemical and prescribed fire methods (RMP p. 24 & 45; Partial ROD I p. 10).

VM04 – Public lands will be managed to preserve and enhance the occurrences of special status species and to achieve the eventual delisting of threatened and endangered species (RMP p. 45).

Wildlife/Fisheries (WF02) – District management will focus on priority species and their associated habitats to maintain or enhance population levels. Threatened and endangered, proposed, candidate, State-listed and other special status species will be managed to enhance or maintain district population levels or in accordance with established inter/intra-agency management plans. District management efforts will be directed towards the enhancement of biological diversity (UG ROD Part I p. 6).

WF14 – Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration local, yearly climatic variations. The BLM will follow Arizona Game and Fish Department's (AZGFD) five-year strategic plans for the various species and will assist the Department in accomplishing its goals for the various species (RMP p. 34).

Watershed (WS01) – The Safford District goal, for all public land within the District, is to minimize soil erosion and rehabilitate eroded areas to maintain or enhance watershed condition and reduce non-point source pollution that may originate on public lands. Specific objectives include restoration of the eroding flood plains of the San Simon River and the Bear Springs flat area and the reduction of salts entering the Gila River (Partial ROD p. 10).

WS05 – Protect the eroded floodplain of the San Simon River through appropriate livestock management (RMP p. 44). Further, the Safford District RMP was amended by the Decision Record for the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration EA (BLM 1997). This decision established that grazing management, which provides for plant growth and reproduction of those plant species needed to reach desired plant community objectives, will be applied to all allotments under year-long grazing and that future grazing decisions would be in accordance with the Arizona Standards and Guidelines.

Standard 3 of the Standards and Guidelines incorporates Desired Plant Community (DPC) objectives. The Badger Den Allotment LHE established DPC objectives for the Badger Den Allotment; therefore, allotment specific objectives for Badger Den (UG p. A-26) are replaced by the newly established DPC objectives.

1.5 RELATIONSHIP TO OTHER PLANS, STATUTES, AND REGULATIONS

Proposed actions must comply with the following laws and/or agency regulations, and be consistent with applicable Federal, state and local laws, regulations, and plans to the maximum extent possible.

The Proposed Action relating to grazing permit issuance is consistent with 43 CFR 4100

Grazing Administration. The regulation at 43 CFR 4100.0-2 states, “The objectives of these regulations are to promote healthy sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; to promote the orderly use, improvement and development of the public lands; to establish efficient and effective administration of grazing of public rangelands; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands.” These objectives shall be realized in a manner that is consistent with land use plans, multiple use, sustained yield, environmental values, economic and other objectives stated in 43 CFR part 1720, Subpart (§) 1725; the Taylor Grazing Act of June 28, 1934, as amended (43 U.S.C. 315, 315a-315r); section 102 of FLPMA of 1976 (43 U.S.C. 1740) (43 CFR 4100.0-2).

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

The Proposed Action is consistent with the Fundamentals of Rangeland Health (43 CFR 4180.1) and the Arizona Standards and Guidelines, which were developed through a collaborative process involving the Arizona Resource Advisory Council and the BLM State Standards and Guidelines team. The Secretary of the Interior approved the Arizona Standards and Guidelines in April 1997. These standards and guidelines address watersheds, ecological condition, water quality, and habitat for special status species.

In addition, the Proposed Action would comply with the following laws and/or agency regulations, and are consistent with applicable Federal, state, and local laws, regulations, and plans to the maximum extent possible.

- Taylor Grazing Act of 1934
- Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act of 1978
- Endangered Species Act of 1973, as amended
- Migratory Bird Treaty Act of 1918, as amended
- Bald and Golden Eagle Protection Act of 1940, as amended
- Arizona Revised Statute 17-236
- Section 106 of the National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104 Stat. 3048-3058)
- Arizona Desert Wilderness Act of 1990 (Public Law 101-628)
- Biological Opinion (BO) on the Gila District Livestock Grazing Program #22410-2006-F-0414

1.6 SCOPING AND ISSUES IDENTIFIED

Issues were identified by the BLM SFO interdisciplinary (ID) Team. The scoping process

included a Consultation, Cooperation, and Coordination letter mailed to the grazing applicant, and other interested publics. The following issues were identified:

- 1 How would grazing livestock impact vegetation species cover and composition?
- 2 How would grazing livestock impact water quality and bank stability in the riparian corridor?
- 3 How would grazing livestock effect erodibility of soils?
- 4 How would grazing livestock effect general wildlife, BLM sensitive wildlife and plant species, migratory birds, birds of conservation concern, and their habitat, as well as Federally listed species and critical habitat?

On June 26, 2020, a Notice of Comment Period for Badger Den Allotment (No. 51100): Draft Land Health Evaluation Comment Period and Draft Environmental Assessment Chapter 1 & 2 was sent to interested parties for a 15-day comment period. The LHE comments were incorporated into the Final LHE, and comments related to the EA were either incorporated into Chapters 1&2 or addressed in Appendix D of the EA.

1.6.1 Issues Identified but Eliminated from Detailed Analysis

1. How would grazing livestock affect listed fish species?
 - There are no listed fish species currently present on the Badger Den Allotment. Sands Draw is an approved location for stocking listed fish species; however, to date the location has not been stocked. If listed species are released at the approved location, the area is within the Sands Draw enclosure where livestock are not allowed access.
2. Would permit issuance affect cultural resources?
 - Cultural resources were evaluated. Allotment case files, Allotment Management Plan (AMP) files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed to determine areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. The records indicate that there are 15 areas of livestock congregation that required an intensive field inventory. This field inventory was completed on June 29, 2009. One historic property was identified in an area of livestock congregation, however it is not eligible for inclusion on the National Register of Historic Places (NRHP), no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above. The BLM conducted another Class I literature survey in February of 2021 and found no new cultural resources listed in the area, therefore, further analysis is not warranted.
3. Would issuing a permit for livestock grazing affect recreation at the Hotwell Dunes Recreation Area?
 - The recreation area was considered because of proximity to the allotment. This area is not within the Badger Den Allotment but is in the neighboring Tanque Allotment to the north. The Hotwell Dunes Recreation Area is fenced on all sides and livestock grazing is not allowed in the Hotwell Dunes Recreation Area from the Tanque or Badger Den Allotments. Because livestock have no access to the recreation area, it would not affect recreation at this location and the issue will not be analyzed in detail.
4. Would grazing livestock affect spring resource or other water resources such as Dripping Spring, Sands Draw Detention Dam, HX Detention Dam, Gold Gulch north of HX, or the

perennial canal from Hotwell Dunes Well?

- There is one spring resource (Dripping Spring) on BLM-administered land within the Badger Den Allotment. It is designed to provide water for livestock and wildlife away from the spring source as described in the LHE and is fenced to exclude livestock access. Therefore, it was not analyzed for Standard 2 of the LHE and is not considered in detail for this EA.
 - Sands Draw and HX Detention Dam are both fenced to prevent livestock grazing; therefore, they are not analyzed for Standard 2 of the LHE and are not considered in detail for this EA.
 - Gold Gulch was considered in the LHE and was determined to not be a riparian-wetland habitat. Gold Gulch is considered an upland in the LHE and EA. Much of Gold Gulch is located on private land.
 - The perennial canal located in Section 1 of Township 11 South Range 28 East was historically used to transport water from Hotwell Dunes Well on the Tanque Allotment to a stockpond on the Badger Den Allotment. This canal was replaced by a pipeline and is no longer functioning as a canal on the Badger Den Allotment and contains no water. If the canal were to be used in the future, it would be considered exempt through the Arizona Standards and Guidelines for Rangeland Health (Standard 2) because it was constructed for livestock purposes and was not identified through local planning efforts to provide for riparian or wetland habitat. Therefore, no additional analysis is warranted.
5. How would exclosures and other areas of livestock restriction affect grazing management?
- Indefinite exclosures: HX Detention Dam, Sands Draw Detention Dam, Ryan Detention Dam, and Joy Valley exclusion areas (Appendix A, Figure 4) were in place when carrying capacity was set and would therefore not affect the carrying capacity of the allotment.
 - Other areas of livestock restriction include deferment from the San Simon Pasture, Ryan Seeding Pasture, and Joy Valley Pasture (Appendix A, Figure 2) during the critical March through October growing period. This deferment uses a seasonal rotation of livestock to allow AUMs to remain available for livestock use within these pastures November through February of each year, therefore, permitted AUMs would not change and no additional analysis is warranted.
6. How would unauthorized livestock impact the Badger Den Allotment?
- The BLM recognizes that unauthorized livestock use has occurred on the Badger Den Allotment, and the effects of this use has been documented in the associated LHE. However, unauthorized livestock use is not a part of the Proposed or No Action Alternatives, and therefore is not analyzed in this EA. Livestock use is either authorized through the issuance of a grazing permit, or it is unauthorized, and the BLM will act according to regulation 43 CFR 4150.
7. How would grazing of this allotment impact climate change?
- Livestock grazing results in methane emissions as a result of ruminant digestion. Estimates for grazing cattle typically range from 80 to 101 kilograms of methane per year per animal (EPA, 2009) or 6.7 to 9.2 kilograms of methane per month. This analysis will assume a methane emission rate of 8 kilograms of methane per AUM. Assuming that methane has a global warming potential 25 times carbon dioxide (EPA 2021, p. ES-3), each AUM results in 0.2 metric tons of carbon dioxide equivalent.

Authorizing to permit the Badger Den Allotment for grazing use at the authorized level of 1,776 AUMs would result in methane emissions of approximately 355 metric tons of carbon dioxide equivalent per year. Current U.S. emissions of methane from livestock total approximately 179 million metric tons of carbon dioxide equivalent per year (EPA 2021, p. ES-16); current U.S. emissions of all greenhouse gases total approximately 6.6 billion metric tons of carbon dioxide equivalent (EPA 2021, p. ES-9). This emission would represent 0.000002% of the annual U.S. methane emissions from livestock, and 0.00000005% of the annual U.S. emissions of all greenhouse gases. At this scale emissions are negligible, and therefore, no further analysis is warranted.

2.0 Proposed Action and Alternatives

2.1 PROPOSED ACTION: ISSUE GRAZING PERMIT

The Proposed Action is to issue a grazing permit to Levi Klump for a period of 10 years incorporating Mandatory Terms and Conditions (Table 1) and Other Terms and Conditions as listed below, which would become effective upon acceptance of the permit. Total permitted AUMs are the same as the preexisting permit cancelled in 1993 which included 150 cattle and 2 horses or 1,776 active AUMs. The 1,410 AUMs that were put into suspension prior to cancellation of the preexisting permit would remain in suspension. Protection of the San Simon River was recommended through the LHE including “deferment of livestock from sensitive riparian areas during critical growing periods to assist with production and maintenance of riparian-wetland plant communities” as included in Section 1.2 above. The terms and conditions incorporate rotational use of pastures (see Table 1 and Other Terms and Conditions). Pastures containing available riparian-wetland plant communities are referred to as the “river channel pastures” and include San Simon, Ryan Seeding, and Joy Valley Pastures. All other pastures on the allotment are referred to as “upland pastures” and include Badger Den, Bowie Plot, Chaney Place, Charcoal, Headquarters, HX, Starve Out, and Timber Draw (Figure 2, Appendix A). The rotation allows use of river channel pastures November through February while all upland pastures are available all year.

Table 1. Mandatory Terms and Conditions

Allotment	Pasture	Livestock Number / kind	Period		% PL	Type Use	AUMs
			Begin	End			
AZ51100 Badger Den	Upland Pastures	150 Cattle	3/1	10/31	97	Active	1,172
AZ51100 Badger Den	River Channel and Upland Pastures	150 Cattle	11/1	2/28	97	Active	574
AZ51100 Badger Den	Upland Pastures	2 Horses	3/1	10/31	97	Active	16
AZ51100 Badger Den	River Channel and Upland Pastures	2 Horses	11/1	2/28	97	Active	8

Other Terms and Conditions:

- All livestock shall be indefinitely excluded from HX Detention Dam, Sands Draw Detention Dam, Ryan Detention Dam, and Joy Valley exclusion areas (Appendix A, Figure 4).
- All livestock grazing shall be deferred from the river channel pastures (San Simon Pasture, Ryan Seeding Pasture, and Joy Valley Pasture) (Figure 2, Appendix A) during the critical March through October growing period for protection of the San Simon River channel.
- In order to improve livestock distribution on the public lands, all salt blocks and/or mineral supplements shall not be placed within one quarter of a mile of any riparian area, wet meadow, or watering facility (either permanent or temporary) unless stipulated through a written agreement or decision in accordance with 43 CFR 4130.3-2(c).
- The permittee shall submit a report of the actual grazing use on the Badger Den Allotment for the previous grazing period, March 1 to February 28 by March 15th of the current year (43 CFR 4130.3-2). Failure to submit a report may result in suspension or cancellation of the grazing permit.
- All troughs shall be outfitted with wildlife escape structures to provide a means of escape for animals that fall in while attempting to drink or bathe.
- The permittee shall provide reasonable administrative access across private and leased lands to the Bureau of Land Management for the orderly management and protection of the public lands.

2.2 ALTERNATIVE 2: NO ACTION AND NO GRAZING ALTERNATIVE

A No Action alternative represents continuation of current management. It provides a benchmark of existing impacts continued into the future against which to compare the impacts of the other proposed management alternatives. In the case of the Badger Den Allotment, continuation of current management also means no grazing would be permitted on the allotment. Designated AUMs would remain unpermitted and unavailable for livestock use. This Alternative does not meet the requirements of the Purpose and Need. For this analysis, the No Action and No Grazing are functionally the same and will be analyzed together.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Reduced Livestock Grazing Alternative

Permitted numbers have been reduced from RMP designations through decision in the past as described in Section 1.1 above to ensure proper stocking rates on the Badger Den Allotment. An alternative implementing further reduction in AUMs was considered but eliminated from detailed analysis. Based on recommendations from the associated LHE, conditions of the allotment did not warrant analysis of this alternative. The LHE Report referenced in Section 1.2 above concluded that Arizona Standards and Guidelines for Rangeland Health are being achieved on the Badger Den Allotment for Standards 1 and 3. Riparian-Wetland Sites are not meeting Standard 2. Livestock grazing has not been permitted on the allotment since 1993 and

the allotment has been predominantly underutilized and/or vacant since that time (see Section 1.1 above). Lands not meeting standards are a result of factors discussed in the LHE under Section 7 Land Health Standards and Determinations including historic overgrazing (prior to the Taylor Grazing Act of 1934), extended drought, railroad and road development, and other factors. Lands not meeting standards are not attributed to current livestock grazing.

The Proposed Action considers terms and conditions related to livestock management to ensure the LHE recommended actions listed in Section 1.2 are being considered. Adjacent BLM-administered grazing allotments are actively grazed, and lands continue to be utilized without reduction to permitted livestock numbers up to this point. Properly managed livestock grazing has been considered in the LHE as an acceptable use, therefore, full preexisting permitted use with restrictions added for resource protection as part of the Proposed Action is an appropriate baseline from which to establish livestock use. If use rates exceed allowable use and will result in resource damages, then standard compliance inspections allow for potential resource damage to be noted and acted upon in accordance with Title 43 CFR § 4110.3-3.

Cool Season Grazing Alternative

An alternative implementing cool season grazing only was considered but eliminated from detailed analysis. Based on recommendations from the associated LHE, conditions of the allotment did not warrant analysis of this alternative. The LHE Report referenced in Section 1.2 above concluded that Arizona Standards and Guidelines for Rangeland Health are being achieved on the Badger Den Allotment for Standards 1 and 3. Riparian-Wetland Sites are not meeting Standard 2. Livestock grazing has not been permitted on the allotment since 1993 before which livestock grazing was permitted year-round. The allotment has been predominantly underutilized and/or vacant since that time (see Section 1.1 above). Lands currently not meeting standards are a result of factors discussed in the LHE under Section 7 Land Health Standards and Determinations including historic overgrazing, extended drought, railroad and road development, and other factors. Lands not meeting standards are not attributed to current livestock grazing.

Cool season grazing (November through February) is included for river channel pastures in the Proposed Action for protection of the San Simon River channel. This ensures the LHE recommended actions listed in Section 1.2 are being considered. Cool season grazing allotment-wide is not needed to meet land health standards. Adjacent BLM-administered grazing allotments are actively grazed year-round, and lands continue to be utilized without reduction to permitted livestock numbers up to this point. Properly managed livestock grazing presented in the Proposed Action has been considered in the LHE as acceptable use, therefore, full preexisting permitted use with restrictions added for resource protection as part of the Proposed Action is an appropriate baseline from which to establish livestock use. If use rates exceed allowable use and will result in resource damages, then standard compliance inspections allow for potential resource damage to be noted and acted upon in accordance with Title 43 CFR § 4110.3-3.

Exclusion of Livestock Year-round from the River Channel Pastures

An alternative implementing exclusion of livestock year-round from the river channel pastures (San Simon, Ryan Seeding, and Joy Valley Pastures) was considered but eliminated from detailed analysis. Based on recommendations from the associated LHE, conditions of the

allotment did not warrant analysis of this alternative. The LHE Report referenced in Section 1.2 above concluded that Arizona Standards and Guidelines for Rangeland Health are being achieved on the Badger Den Allotment for Standards 1 and 3. Riparian-Wetland Sites are not meeting Standard 2. Livestock grazing has not been permitted on the allotment since 1993 before which livestock grazing was permitted year-round. The allotment has been predominantly underutilized and/or vacant since that time (see Section 1.1 above). Lands currently not meeting standards are a result of factors discussed in the LHE under Section 7 Land Health Standards and Determinations including historic overgrazing, extended drought, railroad and road development, and other factors. Lands not meeting standards are not attributed to current livestock grazing.

The LHE considered ecological site descriptions (ESDs) for appropriate use of lands, which include the use of appropriately managed livestock grazing. In areas which have departed from reference condition, proper livestock management is considered appropriate in transitioning back to reference condition. The LHE analysis recommended management action includes, “Consideration should be given to deferment of livestock from sensitive riparian areas during critical growing periods to assist with production and maintenance of riparian-wetland plant communities.” This has been considered through the Proposed Action of the EA with applicable livestock grazing deferment to help these areas meet standard 2 DPC objectives (obtaining a rating of Proper Functioning Condition (PFC)). Additionally, the No Action alternative considers impacts associated with continued year-round exclusion of livestock, therefore, no additional analysis is warranted.

Exclusion of livestock year-round from the river channel pastures is included in the No Action and No Grazing alternative.

This ensures the LHE recommended actions listed in Section 1.2 are being considered. Exclusion of livestock year-round from the river channel pastures is not needed to meet land health standards. Adjacent BLM-administered grazing allotments are actively grazed year-round, and lands continue to be utilized without reduction to permitted livestock numbers up to this point. Properly managed livestock grazing presented in the Proposed Action has been considered in the LHE as acceptable use, therefore, full preexisting permitted use with restrictions added for resource protection as part of the Proposed Action is an appropriate baseline from which to establish livestock use. If use rates exceed allowable use and will result in resource damages, then standard compliance inspections allow for potential resource damage to be noted and acted upon in accordance with 43 CFR § 4110.3-3.

Retirement of Allotment for Refuge for Wildlife

Continued rest from livestock grazing is already considered in the EA under the No Grazing Alternative to establish a baseline for analysis. Implementation of the No Action alternative is expected to result in negligible impacts to wildlife, soil erodibility and vegetation. However, the No Grazing alternative does not meet the objectives of the Upper Gila San Simon Grazing Environmental Statement (UG) or Safford District RMP. These land use plans state, “the general objective of the proposed action is to permit livestock to utilize a harvestable surplus of palatable vegetation—a renewable resource—and thereby produce a usable food product. The proposed livestock management program is based on the multiple-use management concept, which provides for the demands of various resource uses and minimizes the conflicts among

those uses or activities. Although the various uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals” (UG p. 1-6).

3.0 Affected Environment and Environmental Consequences

This chapter describes the affected environment, specifically the existing or baseline conditions relevant to each issue, followed by a description of the direct, indirect, and cumulative impacts projected to result from each alternative. In this document, the terms “effect” and “impact” are used synonymously.

The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statutes, regulations, or executive orders must be considered in all EAs. Other resource concerns identified within this EA, have been considered by BLM resource specialists to determine whether they would be potentially affected by the proposed action. These elements are identified in Appendix B, along with the rationale for the determination on potential effects. If elements were determined to be potentially impacted, they were carried forward for detailed analysis in this EA; likewise, if an element were not present or would not be affected, it was not carried out for detailed analysis (see issues eliminated from detailed analysis in Section 1.6).

3.1 HOW WOULD GRAZING LIVESTOCK IMPACT VEGETATION SPECIES COVER AND COMPOSITION?

3.1.1 Affected Environment

3.1.1.1 Upland

Vegetation species cover and composition varies across the allotment by ecological site and current ecological condition. The Badger Den LHE analyzed key areas to determine current land health condition and established DPC objectives for species cover and composition. Current species cover and composition for each monitoring site was provided in the LHE. Current condition was compared to DPC objectives in the LHE, and the determination was made that land health standards for species cover and composition were being met overall on uplands within the Badger Den Allotment. Allotment acreage varies slightly based on acreage calculation methods. The RMP listed the Badger Den Allotment as having 48,820 acres, with GIS technology, the LHE and EA analyzed 49,000 acres as determined by the BLM GIS layer. Of the 49,000 acres, 776 acres (two percent of the allotment) would be excluded from livestock grazing through indefinite exclosures and 7,642 acres (16 percent of the allotment) would be outside of exclosures and within pastures along the San Simon River (San Simon, Ryan Seeding, and Joy Valley Pastures, also referred to as the river channel pastures). Of the 49,000 acres on the Badger Den Allotment, 40,582 acres (83 percent) are outside of the river channel pastures and outside of exclosures, also referred to as the upland pastures. The Badger Den LHE showed a shift in vegetation composition in uplands to a dominance of shrub composition at key areas with a sparse or patchy presence of perennial grasses. This shift was attributed to factors identified in Section 1.2 above. Despite this shift, most areas were within acceptable ESD reference condition and are meeting DPC objectives outlined in the LHE.

3.1.1.2 Riparian

Current riparian condition along the 9.24 miles of the San Simon River were analyzed through

PFC assessments in the LHE process. Reach 1 (1.76 miles long within the Joy Valley Pasture) was determined to be an ephemeral system and was not applicable to the PFC assessment. Reaches 2 and 3 (7.48 miles long within the Joy Valley, Ryan Seeding, and San Simon Pastures) were determined to be riparian and were applicable to the assessment. These two reaches equal approximately 135 acres (0.3 percent of the allotment). The PFC assessment showed a lack of desirable riparian obligate plants along the San Simon River, and these two reaches were not meeting DPC objectives.

Other areas which are excluded from livestock grazing include riparian habitats associated with the HX Detention Dam and Sands Draw Detention Dam (within exclosures and are therefore not included in Standard 2). Based on ocular visits, these areas showed that productive and diverse riparian-wetland plant communities of native species exist and are being maintained.

3.1.2 Environmental Impacts—No Action and No Grazing Alternative

Under the No Action alternative, no permit would be issued for grazing use on the Badger Den Allotment. This would be the same as a No Grazing alternative. Livestock grazing is not currently authorized on the Badger Den Allotment. The allotment is allocated as available for livestock grazing through the Safford District RMP, which incorporated the UG. Previously, the allotment was actively used until 1993 as described in Section 1.1 above. There would be no permittee assigned to maintenance of rangeland infrastructure on the allotment. Neighboring permittees would continue to be responsible for boundary fence without any assistance from a permittee on the Badger Den Allotment.

3.1.2.1 Upland

Wildlife use would result in negligible impact to vegetation species cover and composition. Vegetation would not be utilized by livestock. Under the No Action and No Grazing alternative, shrubs may also continue to grow in size and density resulting in nutrient competition with surrounding grasses, and a resulting decrease in grass composition based on lack of available resources. Natural disturbances such as occasional fire or intense drought reduce shrub composition and allow grasses to reestablish. The majority of the Badger Den Allotment is below 4,000 feet (ft) elevation and too few fine fuels exist to effectively carry fire except in years of exceptional ephemeral growth. Even in the absence of shrubs, grasses may not thrive unless timing and intensity of precipitation is sufficient for grass establishment and development. It is expected that Standards 1 and 3 would continue to be met.

3.1.2.2 Riparian

Low frequency and duration of wildlife use would result in negligible impacts to vegetation species cover and composition. Improvement of riparian condition along the San Simon is predominantly dependent on timing and duration of precipitation. Lack of moisture within the San Simon River corridor, which is being held behind the detention dams constructed in the uplands of the Badger Den and surrounding allotments, is expected to continue to contribute as a causal factor as to why Standard 2 would continue to not be met along the San Simon River even in the absence of livestock grazing.

Riparian areas behind HX Dam and within the Sands Draw Exclosure, where precipitation and sediment are being trapped, would continue to exhibit productive and diverse riparian plant communities of native species.

3.1.3 Environmental Impacts—Proposed Action

The grazing capacity analysis for the Badger Den Allotment was determined in 1978 as a part of the UG and was incorporated into the grazing permit in 1981 through a grazing decision. The UG was incorporated into the Safford RMP in 1991. Grazing capacity analyses in the UG were determined by the ocular reconnaissance range survey method and ocular estimates as described in the UG and were established to allow for an average of 40 percent utilization of annual growth of key perennial grass species by wildlife and livestock to keep grasses at healthy viable populations and maintain plant type compositions.

Cattle and horses eat multiple vegetation types but often favor grasses over shrubs or forbs. Extended heavy grazing use (greater than 60 percent utilization of annual growth) could result in reduced perennial grass cover and increased shrub cover. The established carrying capacity of the Badger Den Allotment does not allow for extended heavy grazing, but rather is established for light use (21 to 40 percent) to moderate use (41 to 60 percent). Many desirable perennial grass species thrive and benefit from light or moderate grazing impacts such as alkali sacaton and blue grama, while other species such as curly mesquite tolerate only light grazing impacts before experiencing reduced vigor (Schmutz 1978). Although grasses are maintained at healthy populations, shrubs may continue to grow in size and density resulting in nutrient competition with surrounding grasses, and a resulting decrease in grass composition based on lack of available resources. Even in the absence of shrubs, grasses may not thrive unless timing and intensity of water is sufficient for grass establishment and development.

Natural disturbances such as occasional fire at higher elevations or intense drought reduce shrub composition and allow grasses to reestablish. Wildfire occurrence may be reduced as a result of grazing and fewer fine fuels to burn. The majority of the Badger Den Allotment is below 4,000 ft elevation where fewer fine fuels exist to effectively carry fire except during years of exceptional ephemeral growth, in which case, the proposed number of livestock present would not be enough to strongly impact availability of fine fuels.

Exclosure fencing will be the responsibility of the BLM. Pasture fencing and other infrastructure will be maintained by the permittee as needed to manage movement of livestock. Pasture fencing functionality for the San Simon, Ryan Seeding, and Joy Valley pastures will be required during seasons of deferment. Maintenance of this infrastructure will benefit grazing management by keeping livestock where they are intended and by helping to distribute livestock grazing more evenly throughout the allotment. As maintenance occurs to fencing, the BLM strives to make each fence line wildlife-friendly where it aligns with management objectives. Maintenance of base property (waters at Badger Den Well, Chaney Place, and HQ well) will be monitored for impacts to permitted livestock use. Non-functional base water will result in permitted AUMs being temporarily reduced by the amount identified for each base water according to grazing regulations (Title 43 CFR § 4110.2-2 and 4110.3-2).

3.1.3.1 Upland

There are 48,089 (98 percent of the allotment) acres of uplands available for grazing on the Badger Den Allotment. Outside of the three river channel pastures, 40,270 acres (84 percent) would be available for livestock use year-round and may receive use during times of growth resulting in some seed consumption prior to seed development and requiring more root reserve to maintain healthy and vigorous perennial grasses. Through appropriate grazing management

outlined in the Proposed Action including proper stocking rates and established livestock restrictions, available upland grasses, forbs, and shrubs would be utilized at appropriate rates (averaging 40 percent use). The 776 acres (two percent of the allotment) excluded from livestock grazing through existing exclosures would remain areas of exclosure and would therefore be unimpacted by livestock use. The 7,507 upland acres (15 percent of the allotment) within the river channel pastures would be seasonally unavailable to livestock use during the March through October growing season and would therefore allow for maximum root development and seed production of all plant types. Use by livestock would still occur other times of the year. Root development and seed production would have predominantly occurred during the growing season when livestock are not present, therefore, impacts to perennial grasses would be reduced. Livestock use during the non-growing season after seed production has occurred is likely to result in greater seed dispersal. Impacts outline above would result in the vegetation species cover and composition continuing to meet DPC objectives.

3.1.3.2 Riparian

Pastures along the San Simon River include 7,642 available acres (16 percent of the allotment) of which 135 acres (0.3 percent of the allotment) are riparian. Proposed terms and conditions (T&Cs) for these pastures includes livestock deferment during the critical March through October growing period for protection of the San Simon River channel. These T&Cs will allow for maximum root development and seed production of all plant types including any riparian vegetation which may occupy the area. Use by livestock will still occur other times of the year. Root development and seed production will have predominantly occurred during the growing season, therefore, impacts to perennial grasses will be reduced.

Standard 2 was not being met along the San Simon River. There would be impacts from livestock grazing to riparian habitat. Improvement of riparian condition along the San Simon is predominantly dependent on timing and duration of precipitation. Presence of livestock with the proposed T&Cs would not prohibit Standard 2 from being met.

Riparian areas behind HX Dam and within the Sands Draw Exclosure are excluded from livestock grazing currently and would remain excluded from livestock grazing through the implementation of the Proposed Action.

3.1.4 Cumulative Effects

Relevant past, present, and reasonably foreseeable future (RFF) actions that also impact vegetation include past construction and continued recreational use of many miles of dirt roads, approximately seven miles of the paved road (Haekel), and six miles of railroads. Road and past railroad construction contributed to current vegetation condition through effects on hydrologic function of the landscape. Recreation includes driving on roads within the allotment, as well as hunting or other recreational activities. The neighboring allotment (Tanque) includes the Hotwell Dunes recreation area where off-road vehicle use is allowed. Mining activities on the allotment include areas which have already been mined and reclaimed as well as a current mine plan for two acres.

The SFO is currently preparing a Vegetation Management Plan EA that would permit the treatment of target species to reduce the cover of woody species and cacti to promote an increase in grasses and restore vegetation communities, including the Badger Den Allotment. Conducting

such treatments would reduce shrub cover and increase perennial grass cover for the allotment; however, the long-term goal of these treatments is to improve the ecological conditions of the area in order to better provide for multiple uses (i.e., wildlife use, ecological function, recreation, and permitted livestock grazing).

Surrounding allotments include: Fan (8,923 acres), Joy Valley (54,541 acres), Murchison (53,091 acres), Poppy Canyon (17,479 acres), Tanque (68,886 acres), and 111 Ranch (81,919 acres). Relevant past, present, and RFF actions include continued livestock use and future permit renewals. In the area of these surrounding allotments, livestock use has been checked through regular compliance inspection and associated field observations. Reports from these inspections showed no results of excessive grazing. Vegetation monitoring has been conducted and LHEs have been completed for these allotments; conditions observed have not led to allotment closure or modification of the grazing capacities after numbers were established in the UG/RMP. Deferment of livestock from the San Simon River channel was advised for the Tanque and 111 Ranch allotments although this has not been implemented through the permit renewal process. The majority of these neighboring allotments have had permit renewals since establishment of the RMP with no adjustment to carrying capacity.

Proposed livestock use on the Badger Den Allotment (49,000 acres totaling approximately 15 percent of these allotments) will contribute to grazing impacts in the area. The Proposed Action would also have a negligible impact on vegetation composition and cover when considering the proposed vegetation treatments under the Draft SFO Vegetation Management Plan EA. It is not expected that this would prevent the Badger Den Allotment from meeting the DPC objectives.

Effects of the No Action and No Grazing alternative will result in no effect to the surrounding allotments listed above. Surrounding allotments would continue to be grazed resulting in 284,839 acres (85 percent of identified allotment area) being permitted for grazing and 49,000 acres (15 percent of identified allotment area) not being permitted for grazing. The No Action and No Grazing alternative would have no effect on the dominant vegetation communities or species cover, nor would it have an impact to the surrounding allotments.

3.2 HOW WOULD GRAZING LIVESTOCK IMPACT WATER QUALITY AND BANK STABILITY IN THE RIPARIAN CORRIDOR?

3.2.1 Affected Environment

The affected environment for this section is the riparian corridor on the Badger Den Allotment. The Badger Den Allotment is split into three subwatersheds, Gold Gulch-San Simon River (Hydrological Unit Code [HUC]-10 1504000607), Whitlock Wash-Hospital Flat (HUC-10 1504000605), and Buckeye Wash-San Simon River (HUC-10 1504000606). Water quality is determined by interactions with soil, transported solids (organics and sediments), rocks, groundwater, and the atmosphere. Additionally, the presence of vegetation plays a substantial role in water resources and quality because vegetation affects soil conditions such as erosion and water absorption. The Arizona Department of Environmental Quality (ADEQ) is the agency that monitors streams and water bodies for impairments and determines if they are impaired or in conformance with the Clean Water Act (CWA). The San Simon River is not listed as an impaired stream per ADEQ.

The analysis of the water quality and bank stability uses soil erosion potential (K) and soil loss tolerances (T). The K and T factors are used in equations that predict the amount of soil loss resulting from rainfall erosion. The use of K and T factors is useful to guide the selection of practices for soil and water conservation. The K factor is an index which quantifies the relative susceptibility of the soil to sheet and rill erosion. Values range from 0.02 for the least erodible soils to 0.69 for the most erodible. Through analysis of the K factor in the riparian corridor, it was determined that 134 acres within the corridor (99 percent) have a high relative susceptibility of the soil to sheet and rill erosion, shown in Table 2.

Table 2. Soil Erosion Potential (K factor) for the Riparian Corridor

Index Value	All SMA Acres	Percent of Total
Low (0.02-0.2)	1	<1%
Medium (0.24-0.43)	0	0%
High (0.49-0.69)	134	99%
No Data	0	0%

The T factor is the soil loss tolerance. It is defined as the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. The rate is expressed in tons of soil loss per acre per year. Values range from one ton per acre per year for the most fragile soils, to five tons per acre per year for soils that can sustain more erosion without losing significant productive potential. After an analysis of the T factor in the riparian corridor, it was determined that the entire corridor could lose up to five tons per acre for every year before losing long term soil productivity. Although the analysis of the T and K factor show that the riparian corridor of the San Simon River in the allotment has high susceptibility to erosion (K factor), erosion is normal and expected in this system.

The San Simon River flows from south to north through the Badger Den Allotment for a total of 9.24 miles. The United States Geological Survey (USGS) has labeled the river as intermittent in the National Hydrography Dataset (NHD). The San Simon River within the Badger Den Allotment was divided into three reaches, all varying in length, in order to perform the PFC Assessment. Reach 1 was identified as being ephemeral, therefore it was excluded from Standard 2 in the LHE. The length of Reach 2 and 3 were combined for a total length of 7.48 miles, and a 150-foot buffer was added to create a riparian corridor that equals approximately 135 acres (0.3 percent of the allotment).

The PFC Assessments showed a lack of desirable riparian obligate species in Reach 2 and 3, but the banks were stabilized with a dense covering of Bermuda grass and sporadic patches of alakali sacaton grass, as well as a heavy concentration of salt cedar and mesquite. With these reaches classified as intermittent, the expected vegetation is not going to be the same as that of a perennial reach especially in the arid southwest. Overall water availability is the limiting factor between perennial and intermittent reaches for vegetation. Elevation can have a significant effect on riparian vegetation as a function of the changes in temperature and precipitation. Landscapes at lower elevations, like the San Simon Valley, tend to have sparse vegetation along the stream banks and minimal vegetation in the stream channel (The University of Arizona, 2007). For Reach 2 and 3 to move into PFC there should be an increase in the alakali sacaton instead of a few sporadic patches, and more willow individuals. A lack of precipitation could inhibit the

growth of these species, keeping Reach 2 and 3 from achieving PFC. This corridor lies completely within the San Simon, Ryan Seeding and Joy Valley Pastures.

Additional areas of riparian-wetland vegetation include Dripping Springs, HX Detention Dam, Sands Draw Enclosure. Visual observations of Drippings Springs showed no water at the location, however there were a few grasses growing within the catchment. The dry nature of the site does not provide the necessary moisture to support a riparian-wetland plant community. The HX Detention Dam has created an area of saturated soils behind the dam, which is providing enough moisture to support some riparian vegetation such as cottonwood trees and giant sacaton. The Sands Draw wildlife enclosure supports a well with artesian flows that feeds two ponds and channel habitat that is perennial. This habitat was enhanced and expanded to support the reintroduction of listed fish species. Overall, all three areas may provide marginal-to-suitable riparian-wetland vegetation, primarily during wet periods when riparian obligate and facultative species can be supported, which would promote bank stability. All three areas are excluded from livestock grazing.

3.2.2 Environmental Impacts—No Action and No Grazing Alternative

The No Action alternative would result in the Badger Den Allotment remaining unpermitted for livestock grazing and is the same as the No Grazing alternative. Wildlife would still be able to utilize the riparian resources within this allotment; however, the No Action and No Grazing alternative would result in no impact to water quality and bank stability.

3.2.3 Environmental Impacts—Proposed Action

The Proposed Action would result in livestock grazing being permitted on the Badger Den Allotment, as described above in Section 2.1. Livestock activity in the riparian corridor would increase trampling of soils and could reduce soil protection by reducing available vegetation and litter. With the proposed action of deferring livestock from the San Simon, Ryan Seeding, and Joy Valley Pastures during the critical March through October growing period, impacts to the water quality and bank stability of the San Simon River would be significantly reduced compared to year-long use in these areas.

Southeast Arizona receives most of the rain fall during the monsoon season (June-September), which is during the deferred grazing period. Since the banks are less likely to be saturated when grazing is allowed in the three pastures, compaction and trampling is anticipated to be minimal. As mentioned in the LHE, the banks in Reach 2 and 3 were covered with Bermuda grass with sporadic patches of alkali sacaton, as well as a heavy concentration of salt cedar and mesquite. Due to stabilizing vegetation on the banks and deferred grazing, an increase in sediment is not anticipated to occur in the San Simon River. As a result, impacts to water quality due to grazing will be minimal.

3.2.4 Cumulative Effects

Relevant past, present, and RFF actions include mining activity on the allotment, recreation in the adjacent area, vegetation treatments under the Draft SFO Vegetation Management Plan EA, grazing in adjacent allotments, existing roads, and railroads. The area of the mining activity is not located within the San Simon, Ryan Seeding, and Joy Valley pastures and therefore it will have a negligible impact to bank stability or water quality. Grazing on the adjacent allotments (Fan, Murchison, Tanque, Poppy Canyon, Joy Valley, and 111 Ranch) have been approved for

full use, including areas along the San Simon River. Currently, ADEQ has not identified any stretches of the Gila River directly downstream of the confluence with the San Simon River as being impaired.

Implementation of the Proposed Action is not anticipated to result in adverse impacts to streams and water bodies downstream of the allotment. Recreation in the adjacent area would also have a negligible impact due to bank stability and water quality. In all areas surrounding the Badger Den Allotment, except for the Hot Well Dunes Recreation area, off-road use is not authorized. There are two road crossings along the San Simon River in the allotment. One is a two-track road and is the only access road from Haekel road to the west side of the allotment. Recent re-construction of the San Simon Crossing along Haekel road was completed, adding three box culverts to the channel. The need to add the culverts came as aggrading of the San Simon channel frequently deposited high volumes of sand and silt making the road impassable (Natural Channel Design, Inc, 2018).

Regarding the Draft SFO Vegetation Management Plan EA, livestock grazing on the Badger Den Allotment would be considered during the planning of vegetation treatments if the allotment was being considered for treatments; therefore, the Proposed Action is anticipated to have a negligible impact on water quality and bank stability when cumulatively considered with proposed vegetation treatments.

Effects of the No Action and No Grazing Alternative will result in no effect to the surrounding allotments listed above. Surrounding allotments would continue to be grazed resulting in 284,839 acres (85 percent of identified allotment area) being permitted for grazing and 49,000 acres (15 percent of identified allotment area) not being permitted for grazing. The No Action and No Grazing alternative, combined with the other RFFs (recreation, mining, roads, or railroads surrounding the allotment) would have a negligible impact on the water quality and bank stability within the San Simon Watershed.

3.3 HOW WOULD GRAZING LIVESTOCK EFFECT ERODIBILITY OF SOILS?

3.3.1 Affected Environment

This section identifies the soil types present throughout the whole Badger Den Allotment, and an analysis of the erosion potential using the T and K factors, as defined above in Section 3.2.1. The Natural Resources Conservation Service (NRCS) has surveyed the soils in Graham County, and complete soil information is available online at <https://websoilsurvey.nrcs.usda.gov/app/>. There are 18 different soil types identified on the Badger Den Allotment and are listed in Table 3 with the total acres of each along with the percentages. A detailed description of the three dominant soil types for the Badger Den Allotment is provided below.

Table 3. Badger Den Soil Composition

Soil Name	Acres	Percent of Total
Anthony-Gila complex	3,065	6%
Artesia cobbly fine sandy loam	1,676	3%
Atacosa-Graham-Rock outcrop complex	933	2%
Bluepoint-Gothard complex	5,452	11%
Bluepoint loamy sand	3,811	8%

Soil Name	Acres	Percent of Total
Claciorthids and Torriorthents, eroded	1,716	4%
Continental-Tubac complex	1,877	4%
Dona Ana fine sandy loam, 0 to 5 percent slopes	3,546	7%
Gila-Anthony-Bluepoint complex	514	1%
Glendale-Gila complex, eroded	5,550	11%
Graham-Rock outcrop complex	322	1%
Guest and Hantz soils	415	1%
Hondale complex	741	2%
Sonoita gravelly sandy loam	2,450	5%
Tres Hermanos gravelly loam	14,031	29%
Tubac-Sonoita complex	35	<1%
Tubac soils	2,810	6%
Water, behind HX Detention Dam	55	<1%

Bluepoint-Gothard complex: Gothard soils are on level-to-nearly level alkali flats and bordering playas at elevations of 3,600 to 4,300 ft. Slopes range from zero to five percent. These soils formed in old lake and fan deposited alluvium from mixed sources, including rhyolite, andesite, quartzite, granite and limestone. The mean annual air temperature ranges from 58 to 66 degrees Fahrenheit (°F). and the mean annual precipitation typically ranges from 10 to 16 inches. The frost-free period is 155 to 220 days. This soil type is moderately well drained, experiences slow runoff, and promotes slow-to-very slow permeability.

Glendale-Gila complex, eroded: Glendale and Gila soils are on alluvial fans and flood plains at elevations of 1,500 to 5,100 ft. These soils formed in stratified alluvium from mixed sources. Slopes range from zero to five percent. The mean annual precipitation is 4 to 12 inches. The mean annual air temperature is 57 to 70°F. The frost-free period is 180 to 280 days. This soil type is well drained, experiences low to medium runoff, and promotes moderately slow permeability.

Tres Hermanos gravelly, loam: These soils are on alluvial fans and footslopes of large hills and mountains. Slopes are zero to eight percent. The soils formed in gravelly coarse to moderately fine textured alluvium derived mainly from igneous rocks. Elevations range 1,800 to 5,900 ft. The average annual precipitation is 7 to 11 inches. The average annual temperature is 57 to 70°F. The frost-free season is 180 to 230 days. This soil type is well drained, experiences medium to high runoff, and promotes moderate-to-moderately slow permeability.

A common way of determining the erodibility of a soil type is using the K and T factors. Soils are rated by NRCS to assess the amount of soil that can be lost from erosion before productivity is reduced. Within the Badger Den Allotment, 89 percent (42,700 acres; Table 4) of the soils have a T factor rating of five, meaning they could lose up to five tons of soil per acre per year before their long-term productivity would be reduced. The majority of the mapped soils (84 percent or 40,255 acres) within the Badger Den Allotment have a K factor rating of medium and below, meaning they are less susceptible to sheet and rill erosion (Table 5).

Table 4. Soil Loss Tolerance (T factor) for the Badger Den Allotment

Tons/Acre/Year	All SMA Acres	Percent of Total
1	1,255	3%
2	1,676	3%
3	741	2%
4	0	0%
5	42,700	89%
No Data	1,717	4%

Table 5. Soil Erosion Potential (K factor) for the Bader Den Allotment

Index Value	All SMA Acres	Percent of Total
Low (0.02-0.2)	15,871	33%
Medium (0.24-0.43)	24,384	51%
High (0.49-0.69)	6,117	13%
No Data	1,717	4%

3.3.2 Environmental Impacts—No Action and No Grazing Alternative

The No Action alternative would result in the Badger Den Allotment remaining unpermitted for livestock grazing and is the same as the No Grazing Alternative. The erodibility of soils would receive no impact from permitted livestock grazing; however, wildlife use would continue to occur. Without the presence of livestock, compaction along trails, fence lines and water sources would be eliminated; therefore, the No Action and No Grazing alternative would result in no impact to the erodibility of soils.

3.3.3 Environmental Impacts—Proposed Action

Livestock grazing could have direct and indirect impacts on soils. Soil productivity and the physical loss of soils are two main concerns on the Badger Den Allotment. Grazing impacts on soils productivity could include compaction and erosion. Grazing impacts on the physical loss of soils could include erosion by wind or water.

Compaction reduces the uptake of water and nutrients by plants and reduces soil productivity, which can affect vegetation composition and vigor. Compaction also decreases infiltration and thus increases runoff and the hazard of water erosion, and the risk for compaction is greatest when soils are wet. Livestock concentration in areas such as water sources, fence lines and trails would have greater impacts on the presence of compaction. Surface soil erosion, depending on the severity and extent, can influence long-term soil productivity and ecosystem function.

One of the Other Terms and Conditions for the Proposed Action includes the stipulation that in order to improve livestock distribution on the public lands, all salt blocks and/or mineral supplements shall not be placed within one quarter of a mile of any riparian area, wet meadow or watering facility. This stipulation helps reduce livestock congregation and soil compaction in sensitive areas.

The permitting of livestock on the Badger Den Allotment is not expected to alter soil productivity or soil loss under the conditions of the Proposed Action. As shown in Table 4, a total of eight percent of the soils throughout the Badger Den Allotment have a T factor rating of

three or below, which indicates that those soil types are more sensitive to soil loss from disturbances that can result in reduced productivity. Those soils are located in the northern portion of the allotment near Javelina Peak where there is more rock cover, naturally armoring the soil.

As described in Section 3.2.1, The K factor is an index that quantifies the relative susceptibility of the soil to sheet and rill erosion. Values range from 0.02 for the least erodible soils to 0.69 for the most erodible. As shown in Table 5, 13 percent of the soils throughout the allotment have a High K factor rating (0.49-0.69). The majority of those soils lie within the river channel pastures which have a proposed T&C for restricted seasonal grazing as described above in Section 1.2 which would reduce duration of use by livestock and reduce impacts to these soils. Under the conditions of the Proposed Action, short- and long-term impacts to soil erodibility are expected to be negligible. This also means that soil productivity will experience only negligible impacts, and that there should be no impacts to plant composition or vigor in relation to soil integrity.

3.3.4 Cumulative Effects

Relevant past, present, and RFF actions include mining activities on the allotment, vegetation treatments under the Draft SFO Vegetation Management Plan EA, recreation in the adjacent area, and grazing in adjacent allotments. The area of the mining activity is considered small enough not to impact the overall erodibility of soils on this allotment. The Vegetation Management Plan EA proposes vegetation treatments on target species, but prior to implementing any treatments on the Badger Den Allotment the conditions on the allotment would be reviewed and factored into the treatment planning. Recreation in the adjacent area would also have a negligible impact to erodibility of soils. In all areas surrounding the Badger Den Allotment, except for the Hot Well Dunes Recreation area, off-road use is not authorized.

Many land management projects were conducted such as the construction of dams and dikes for water control and sediment capture. Many structures throughout the west proved ineffective and/or were abandoned. Many of these non-functional structures continue to alter surface runoff patterns and can greatly exacerbate erosion (Nichols, et al. 2020). The major detention dams on or near the Badger Den Allotment such as Sands Draw, HX, and Fan Detention Dams are maintained to avoid land degradation, altered vegetation, and loss of cultural resources that are caused by altered runoff patterns. The San Simon Watershed has been known to produce high sediment yields, but with sediment barriers and detention dams put in place sediment has begun filling in areas that were once gullied or highly eroded. Implementation of the Proposed Action is not anticipated to result in adverse impacts to the soils resources in the San Simon Watershed.

Surrounding allotments would continue to be grazed. The No Action and No Grazing alternative, combined with the other RFFs (recreation, mining, roads, or railroads surrounding the allotment) would have a negligible impact on soil erodibility within the San Simon Watershed.

3.4 How would grazing livestock affect general wildlife, BLM sensitive wildlife and plant species, migratory birds, birds of conservation concern, and their habitat, as well as Federally listed species and critical habitat?

3.4.1 Affected Environment

This section identifies Federally listed Threatened and Endangered (T&E) species as well as general wildlife, BLM sensitive species, and migratory birds that have the potential to occur within the project area and assesses the impacts from livestock grazing. The Endangered Species Act (ESA), as amended, protects listed species and their habitat by prohibiting “take.” Section 7 of the ESA (1973, as amended) requires Federal agencies to “ensure” that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of T&E species, or result in the destruction or adverse modification of their critical habitats. The BLM treats Candidate species the same way as Proposed species regarding Section 7. The term “general wildlife” refers to all mammal, bird, invertebrate, reptile, fish, and amphibian species. The BLM manages habitat for fish and other aquatic organisms using several BLM manuals for guidance. Those manuals include BLM MS 6500 (Wildlife and Fisheries Management; BLM 1988); BLM MS 6720 (Aquatic Resources Management; BLM 1991e); BLM MS 6780 (Habitat Management Plans; BLM 1981); and BLM Manual 6840 (Special Status Species Management; BLM 2008).

The grazing program for the BLM Gila District, including grazing activities within the Badger Den Allotment, was assessed pursuant to Section 7 of the ESA to determine whether the program would jeopardize the continued existence of an endangered or threatened species and/or their designated or proposed critical habitat. The U.S. Fish and Wildlife Service (USFWS) rendered a Biological Opinion (BO) on the Gila District Livestock Grazing Program #22410-2006-F-0414 (2012). The BO determined that no conservation measures were needed for the Badger Den Allotment due to the absence of the consulted listed species and/or designated critical habitat. On April 23, 2021, a generated report using the USFWS Information for Planning and Conservation (IPaC) website indicated a total of six Federally Listed, Proposed or Candidate species were known or expected to occur within the allotment: jaguar, northern Aplomado falcon, yellow-billed cuckoo, northern Mexican gartersnake, monarch butterfly, and Wright’s marsh thistle (USDI USFWS N.d.; Appendix C). A report generated on February 2, 2021 from AZGFD Environmental Online Review Tool (AZGFD, N.d.) indicated that an additional three Federally Listed species have the potential to occur within five miles of the allotment boundary and/or within the allotment: ocelot, desert pupfish, and Gila topminnow. The Gila chub is not currently present within the allotment but could be present in the future due to a restored wildlife enclosure called Sands Draw, as discussed in the LHE.

Additional areas of riparian-wetland habitat include Dripping Springs, HX Detention Dam, and Sands Draw Exclosure. Visual observations of Drippings Springs showed no water at the location, however there were a few grasses growing within the catchment. The dry nature of the site does not provide the necessary moisture to support a riparian-wetland plant community. The HX Detention Dam has created an area of saturated soils behind the dam, which is providing enough moisture to support some desirable riparian habitat vegetation such as cottonwood trees and giant sacaton; however, the invasive species’ Johnson grass and common cocklebur were

also observed at the site. The Sands Draw wildlife exclosure supports a well with artesian flows that feeds two ponds and channel habitat that is perennial. This habitat was enhanced and expanded for desert pupfish, Gila topminnow, and Gila chub to repatriate these species back into this watershed. Overall, all three areas may provide marginal-to-suitable riparian wildlife habitat, primarily during wet periods when riparian obligate and facultative species can be supported. All three areas are excluded from livestock grazing.

The AZGFD report indicated that there are 14 BLM sensitive species have the potential to occur within five miles of the allotment boundary and/or within the allotment (Appendix C). The BLM sensitive species that have suitable habitat present and/or are known to exist or have the potential to exist within this allotment are the bald eagle (wintering only), ferruginous hawk, golden eagle, western burrowing owl, American peregrine falcon, Arizona Botteri's sparrow, Arizona myotis, banner-tailed kangaroo rat, black-tailed prairie dog, cave myotis, greater western bonneted bat, spotted bat, pale Townsend's big-eared bat, and the desert mud turtle. A total of 12 USFWS Birds of Conservation Concern (USDI USFWS, 2008), not already addressed as BLM sensitive species or T&E species, have the potential to occur within the allotment and are included in Appendix C. The Birds of Conservation Concern 2008 list considers bird species that are nongame species, gamebirds without a hunting season, subsistence-hunted nongame birds in Alaska, and ESA candidate, proposed, and recently delisted species (USDI USFWS 2008). Data derived from the Arizona Game and Fish Department Environmental Online Review Tool (AZGFD, N.d.) was used for the migratory bird analysis. The following species of economic and recreational importance may occur within or in proximity to the Badger Den Allotment: Gambel's and scaled quail, mule deer, band-tailed pigeon, javelina, mountain lion, and the white-winged and mourning doves.

3.4.2 Environmental Impacts—No Action and No Grazing Alternative

The No Action alternative would result in the Badger Den Allotment remaining unpermitted for livestock grazing. The continued absence of livestock would allow forage and cover to remain available exclusively for wildlife species, if and when they are present, resulting in no impact from the No Action and No Grazing alternative.

3.4.3 Environmental Impacts—Proposed Action

The Proposed Action would result in livestock grazing being permitted on the Badger Den Allotment, as described above in Section 2.1. There is no proposed or designated critical habitat for any T&E species within the Badger Den Allotment; however, a GIS analysis shows acres of potential and occupied habitat for four T&E species based on the AZGFD Habitat Distribution Model from the Heritage Data Management System (HDMS; Table 7).

Table 2. Acres of Potential and Occupied Habitat for the Jaguar, Ocelot, Yellow-billed cuckoo, and Desert Pupfish.

Species	Potential Habitat		Occupied Habitat	
	Acres	Percent of Allotment	Acres	Percent of Allotment
Jaguar	29,890	61%	0	0%
Ocelot	5,728	12%	0	0%
Yellow-billed cuckoo	1,097	2%	0	0%
Desert pupfish	0	0%	8	< 1%

As described in the LHE, the Badger Den Allotment lacks the basic components that define jaguar habitat. The jaguar is most commonly found in warm, tropical climates that are usually associated with water. Jaguars are rarely found in extensive arid areas and generally avoid open country like grasslands and desert scrub as they prefer closed vegetative structures of nearly every tropical forest type. The ocelot is also strongly associated with dense cover or vegetation, which suggests it uses a fairly narrow range of microhabitats (USDI USFWS 2012; Emmons 1988; Horne 1998). Research has found that ocelots are most frequently observed in biotic communities associated with tropical and subtropical habitats (i.e., subtropical thornscrub, tropical deciduous forest, or tropical thornscrub) (USDI USFWS 2012). Due to the Badger Den Allotment's biotic communities consisting primarily of Chihuahuan Desert scrub and semidesert grassland, jaguars and ocelots are expected to be absent from the allotment.

The yellow-billed cuckoo is a riparian obligate species that utilizes cottonwood gallery forests and may use upland areas for foraging. The allotment does not contain the primary riparian habitat; however, yellow-billed cuckoos may utilize the upland areas temporarily during times of migration.

The AZGFD HDMS GIS analysis indicated that there were eight acres of occupied habitat for the desert pupfish within the Badger Den Allotment based on observations from 1989; however, the species is no longer known to occur within the allotment boundary. This is due to evidence of ephemeral-to-intermittent flows along the San Simon River resulting in disconnected habitat for fish populations to exist or migrate upstream. Historically, desert pupfish may have existed in the San Simon River when flows were more consistent and existed in the Gila River before nonnative aquatic species were established.

The initial presence of livestock and the grazing of vegetation would have a direct negligible-to-minor, short-term impact to all classifications of wildlife present within the allotment from the physical presence of the livestock, as well as the soil disturbance and consumption of vegetation that may be utilized by wildlife for forage and/or cover. There would be an indirect, negligible-to-minor short-term impact from the displacement of some wildlife species caused by the presence of livestock, but it is expected that the long-term impact would be negligible as those species would adapt to the change in conditions, and continue to forage, nest, and breed in the area.

3.4.4 Cumulative Effects

Relevant past, present, and RFF actions include mining activities on the allotment, vegetation treatments proposed under the Draft SFO Vegetation Management Plan EA, recreation in the adjacent area, and grazing in adjacent allotments. The area of the mining activity is considered small enough not to impact the overall availability of cover and forage for all wildlife species that may be present on the allotment. Potential vegetation treatments could be conducted on this allotment under the SFO Vegetation Management Plan EA if it is approved. Those treatments would have a cumulative negligible-to-minor impact on vegetation available for wildlife on the Badger Den Allotment; however, this impact is also being analyzed in the SFO Vegetation Management Plan EA and consulted on with the USFWS. Recreation in the adjacent area would also have a negligible impact due to this activity because the disturbance of recreators has not been an issue with wildlife in the past, and there is no foreseeable increase in recreation. Grazing on the adjacent allotments (Fan, Murchison, Tanque, Poppy Canyon, Joy Valley, and 111 Ranch)

will have a negligible impact to all wildlife species due to the overall lack of critical and occupied habitat, and the low potential for any of the T&E species to be present based on the dominant biotic communities.

4.0 Public Involvement

Section 1.6 outlines the public involvement that occurred during the project's scoping phase.

The preliminary EA was made available for public review during a 30-day comment period from December 11, 2020 through January 15, 2021. Notification of the preliminary EA, which incorporates by reference the associated LHE Report, was distributed via certified email to nine individuals and organizations and posted to a BLM ePlanning website. Two comment letters were received, and two comments were submitted via ePlanning. Substantive comments as well as the BLM responses can be found in Appendix E. The BLM has chosen to incorporate corrections and revisions into the LHE in the interest of clarity of information. Revisions contained therein did not result in any substantive modifications that would affect the proposed action, alternatives, findings, or decisions. Appendix F contains the Errata Sheet that documents these changes. The revised LHE was signed March 8, 2021.

5.0 References

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Appendix A: Figures

Figure 1. Location and Surface Management of Badger Den Allotment

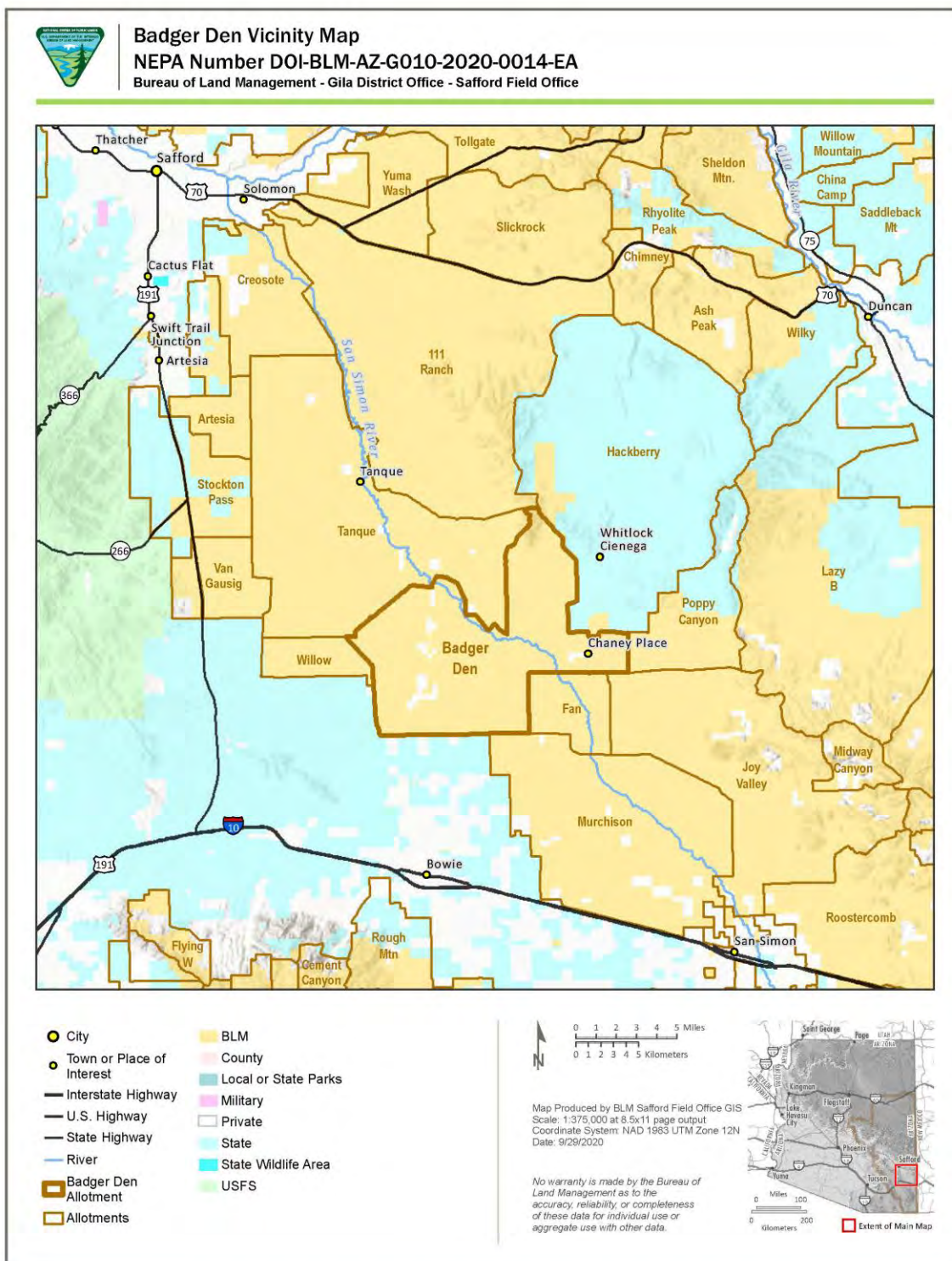


Figure 2. Badger Den Allotment Pastures

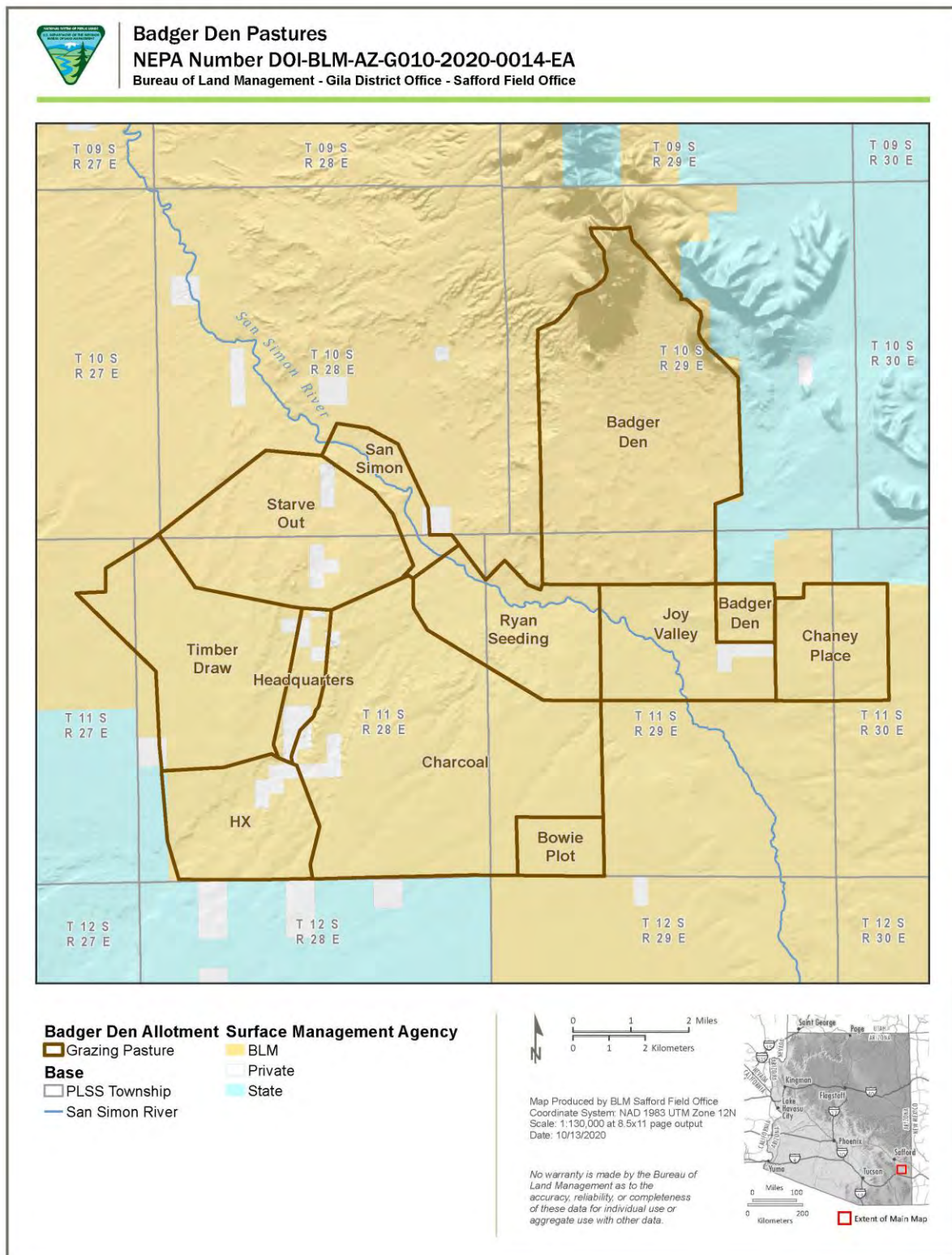


Figure 3. Badger Den Allotment Range Improvements

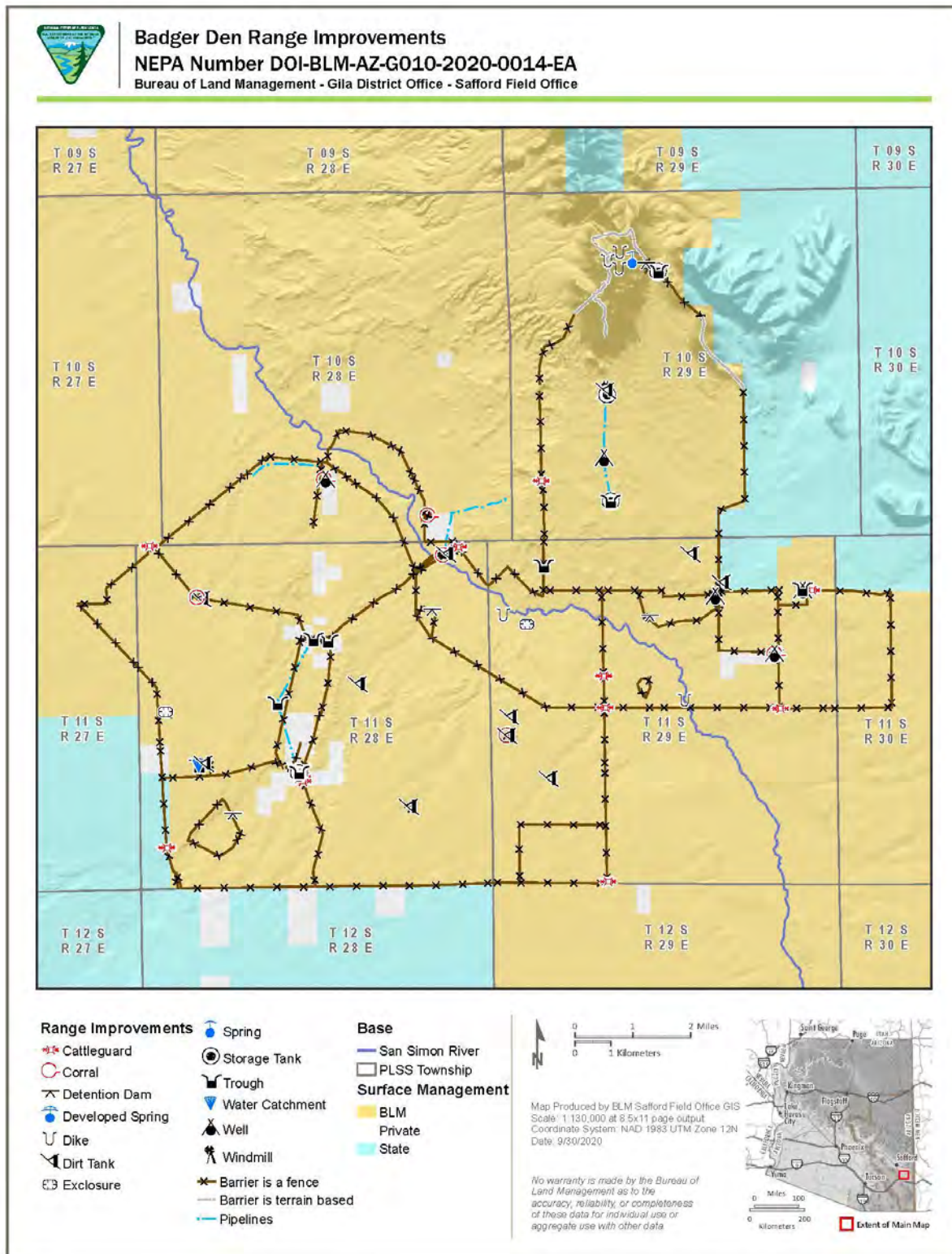
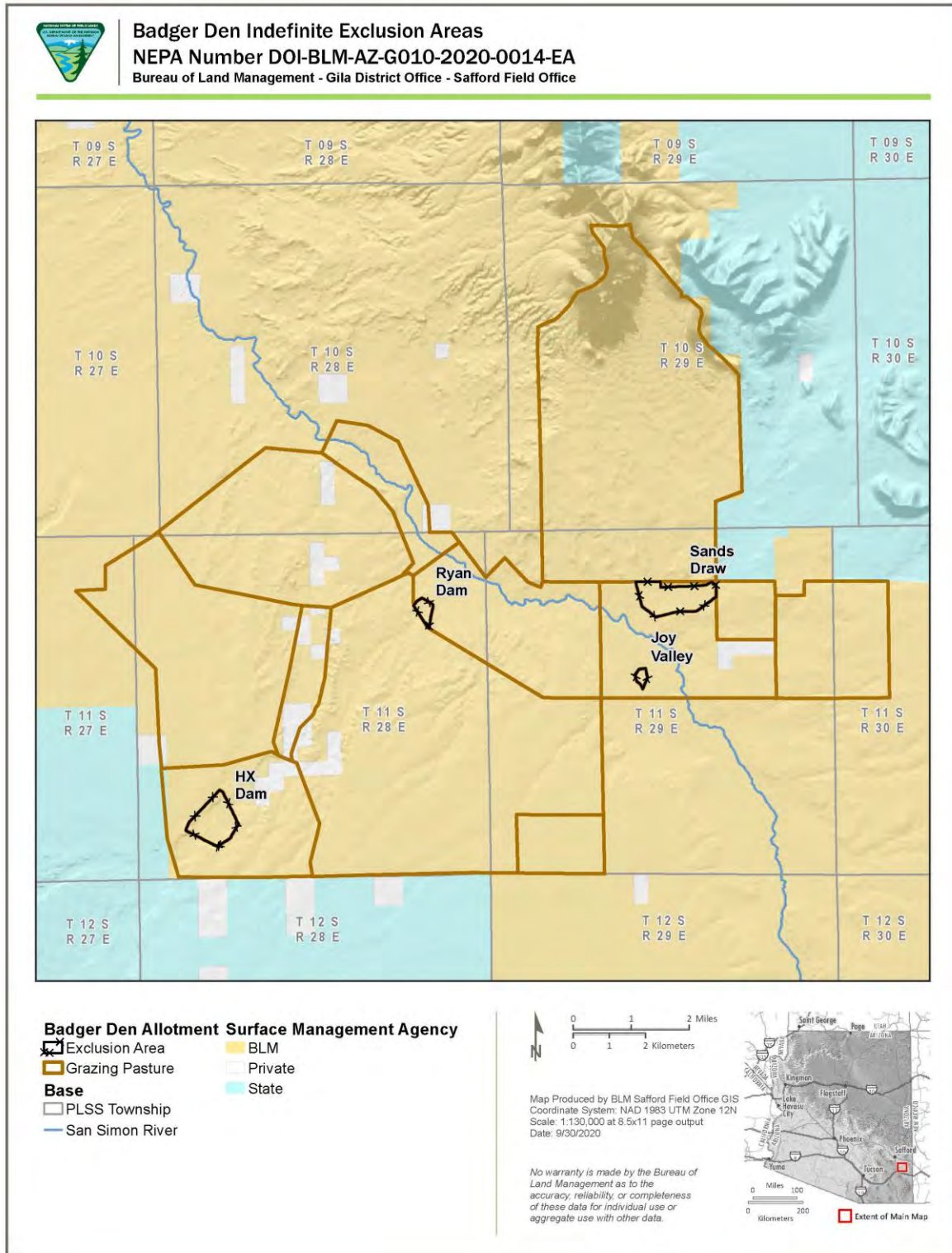


Figure 4. Badger Den Indefinite Exclusion Areas



Appendix B: Table of Issues Considered

Determination*	Issue	Rationale for Determination
NP = Resource not present in the area that would be impacted by the Proposed Action or other action alternative. NI = Resource present, but not affected to a degree that would require detailed analysis, or impacts disclosed previously in a separate, referenced NEPA document. PI = Resource present with potential for impact and analyzed in detail in this EA.		
NI	Air Quality	The BLM has reviewed the current National Ambient Air Quality Standards and nonattainment areas classified by the U.S. Environmental Protection Agency (EPA). The Project Area is not located in an area of nonattainment for particulate matter or ozone. No additional analysis is warranted.
NP	Areas of Critical Environmental Concern	The Proposed Action is not located within or near an ACEC.
NI	Cultural Resources	Cultural resources were evaluated. Allotment case files, Allotment Management Plan (AMP) files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed to determine areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. The records indicate that there are 15 areas of livestock congregation that required an intensive field inventory. This field inventory was completed on June 29, 2009. One historic property was identified in an area of livestock congregation, however it is not eligible for inclusion on the National Register of Historic Places (NRHP), no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above. Another Class I survey was conducted February 2021 with the same findings and no new resources; therefore, no further analysis is warranted.

Determination*	Issue	Rationale for Determination
NP	cue	There are no disproportionately low income or minority populations within the Project Area. No additional analysis is warranted.
NP	Farmlands (Prime or Unique)	There are no prime or unique farmlands within or near the project area; therefore, there would be no direct, indirect, or cumulative impacts to farmlands.
NP	Fire Regimes	The Proposed Action is not expected to impact fire regimes. See Section 3.1 for more information.
NP	Floodplains	The Proposed Action is not within a floodplain as defined by the Executive Order 11988 (1977).
NI	Geology/Mineral Resources	There is one mining claim within the project area, and it is not actively being mined.
NP	Human health and safety concerns	The Proposed Action would not affect human health and safety.
NI	Invasive, Non-native Species	Non-native invasive species were noted as being few in the LHE. Native invasive species were present and had resulted in ecological site transitions away from reference condition. Return to reference condition was considered in Section 7 of the LHE and could occur in the presence of properly managed livestock grazing. Control of any noxious or invasive species found on the allotment would be addressed through a separate EA. No additional analysis is warranted.
NP	Lands and Realty	There are no active land use authorizations present within the Project Area; therefore, no additional analysis is warranted.
NP	Lands with Wilderness Characteristics	Resource not present.
PI	Livestock Grazing Management	The Proposed Action would allow grazing activity on the Badger Den allotment. Permit restrictions reflect seasonal use patterns to mitigate impacts to riparian areas. Rotation of livestock between pastures utilizes available water and feed and can protect natural resources. Placing seasonal rotation restrictions will not allow livestock use of vegetative

Determination*	Issue	Rationale for Determination
		resources during March through October. Other impacts to resources associated with livestock use are analyzed in the EA. No other range improvements that would impact livestock grazing management are included in this EA. Therefore, no additional analysis is warranted.
PI	Migratory birds and wildlife	Migratory birds have a low potential to occur within the project area. See detailed analysis in Chapter 3.
NI	Native American Religious Concerns	Native American cultural and religious locations would not be affected by the proposed action. No locations within the project sites have been identified as historically sensitive.
NI	Noise Resources	The Proposed Action will not affect noise resources; therefore, no additional analysis is warranted.
NP	Paleontological Resources	There are no known paleontological resources within the Proposed Action. No impacts are anticipated, and no additional analysis is warranted.
NI	Recreation Resources	The recreation area was considered because of proximity to the allotment. This area is not within the Badger Den Allotment but is in the neighboring Tanque Allotment to the North. The Hotwell Dunes Recreation Area is fenced on all sides and livestock grazing is not allowed in the Hotwell Dunes Recreation Area from the Tanque or Badger Den Allotments. Because livestock have no access to the recreation area, it would not affect recreation at this location and the issue will not be analyzed in detail.
NI	Socioeconomics	There are no disproportionately low income or minority populations within the Project Area. No additional analysis is warranted.
NI	Soils	See detailed analysis in Chapter 3.3.
PI	Threatened, Endangered or Candidate Plant or Animal Species	See detailed analysis in Chapter 3.4.
NI	Travel and Transportation	Vehicular travel is limited to existing roads. The existing roads require

Determination*	Issue	Rationale for Determination
		high clearance vehicles. The expected small number of vehicles on roads would not have a significant impact to the existing roads. The primary and secondary access roads have perpetual easements recorded with Graham County. There would be no direct, indirect, or cumulative impacts as a result of the Proposed Action and No Action Alternative.
PI	Vegetation	See detailed analysis in Chapter 3.1.
NI	Visual Resources	The visual resource management (VRM) class for the project area is Class II and IV. This provides for management activities which require major modification of the existing character of the landscape, therefore, no additional analysis is warranted.
NP	Wastes, Hazardous or Solid	Resource not present.
PI	Water	See detailed analysis in Chapter 3.2.
NP	Wetlands/Riparian Zones	See detailed analysis in Chapter 3.2.
NP	Wild Horses and Burros	There are no wild horse and burros within the vicinity of the Proposed Action. Therefore, no direct, indirect, or cumulative impacts on this critical element would occur.
NP	Wild and Scenic Rivers	There are no wild and scenic rivers within the vicinity of the Proposed Action area. Therefore, no direct, indirect, or cumulative impacts on this critical element would occur.
NP	Wilderness and Wilderness Study Areas	Resource not present.
PI	Wildlife	See detailed analysis in Chapter 3.4.

Appendix C: Federally Listed, BLM Sensitive, and General Wildlife Species

Table C-1. Threatened and Endangered Species of the Badger Den Allotment

Species	Status	Critical Habitat	Comments	Effects Determination
Desert pupfish ¹ <i>Cyprinodon macularius</i>	Endangered	Designated	The allotment is not within the designated critical habitat. Perennial water is absent from the San Simon River within the allotment to support populations. Perennial water is located within the Sands Draw wildlife exclosure. The BLM has completed both NEPA and ESA compliance to translocate desert pupfish, Gila topminnow, and Gila chub into this habitat. The area is fenced off to grazing. The 2012 GDO Grazing Program BO (22410-2006-F-0414; USDI USFWS 2012) determined that there would be a “May Affect – Not Likely to Adversely Affect” (MA-NLAA) to the desert pupfish.	No Effect
Gila chub <i>Gila intermedia</i>	Endangered	Designated	The allotment is not within the designated critical habitat. Perennial water is absent from the San Simon River within the allotment to support populations. Perennial water is located within the Sands Draw wildlife exclosure. The BLM has completed both NEPA and ESA compliance to translocate desert pupfish, Gila topminnow, and Gila chub into this habitat. The area is fenced off to grazing. The area is fenced off to grazing. The 2012 GDO Grazing Program BO (22410-2006-F-0414; USDI USFWS 2012) determined that there would be a MA-NLAA to the Gila chub.	No Effect

Species	Status	Critical Habitat	Comments	Effects Determination
Gila topminnow ¹ <i>Poeciliopsis occidentalis occidentalis</i>	Endangered	No designation	No record of species occurring within allotment boundary. Perennial water is absent from the San Simon River within the allotment to support populations. Perennial water is located within the Sands Draw wildlife exclosure. The BLM has completed both NEPA and ESA compliance to translocate desert pupfish, Gila topminnow, and Gila chub into this habitat. The area is fenced off to grazing. The 2012 GDO Grazing Program BO (22410-2006-F-0414; USDI USFWS 2012) determined that there would be a MA-NLAA to the Gila topminnow.	No Effect
Jaguar ² <i>Panthera onca</i>	Endangered	Designated	The allotment is not within the designated critical habitat and there is no record of the species occurring within the allotment. The USFWS issued a letter of concurrence (USDI USFWS 2012) for the determination of MA-NLAA regarding the Gila District Grazing Program's actions. Conservation measures will continue to be followed and implemented.	No Effect
Mexican wolf <i>Canis lupus baileyi</i>	Experimental Population, Non-Essential	No designation	The allotment is within the experimental range for this species, however the nearest known occurrence is 30 miles from the allotment with no record of the species occurring on the allotment. USFWS issued a letter of concurrence (USDI USFWS 2012) for the determination of MA-NLAA regarding the Gila District Grazing Program's actions.	No Effect
Monarch butterfly ² <i>Danaus plexippus</i>	Candidate	No designation	In Arizona, monarch butterflies oviposition on obligate milkweed host plants which later serve as a food source for larval offspring. Adult monarchs require a diversity of blooming nectar sources along breeding and migration corridors. It is possible individuals could move through the Badger Den Allotment but habitat within the allotment does not provide the food source plants to support this species.	No Effect

Species	Status	Critical Habitat	Comments	Effects Determination
Northern Aplomado falcon ² <i>Falco femoralis septentrionalis</i>	Experimental Population, Non-Essential	No designation	<p>No record of the species occurring within allotment boundary.</p> <p>Habitat consists of open grassland with scattered trees, low ground cover, and elevations from 3,500 to 9,000 feet. Very limited distribution in the U.S. in Texas and New Mexico. The species' historical range extends into southeastern Arizona; however, the species is still considered to be extirpated from Arizona with no recent records of the species. In Arizona, no documented nesting attempts have occurred since 1940 (AZGFD 2021), or since 2006 when the whole state of Arizona was included in the 10(j) area designation (50 CFR Part 17, 42298-42315). There is no designated or proposed critical habitat for this species.</p> <p>Reported observation in 1977 west of Rodeo, New Mexico in Cochise County, Arizona. Sight records since 1940 are unsubstantiated, and the falcon is considered possibly extirpated in Arizona (per conversation with USFWS; AZGFD 2021).</p>	No Effect
Northern Mexican gartersnake ² <i>Thamnophis eques megalops</i>	Threatened	Proposed	The allotment is not within the proposed critical habitat and does not contain occupied or potential habitat. The allotment lacks suitable riparian plant communities to support this species.	No Effect
Ocelot ¹ <i>Leopardus pardalis</i>	Endangered	No designation	<p>No record of species occurring within allotment boundary.</p> <p>USFWS issued a letter of concurrence (USDI USFWS 2012) for the determination of MA-NLAA regarding the Gila District Grazing Program's actions. Conservation measures will continue to be followed and implemented.</p>	No Effect

Species	Status	Critical Habitat	Comments	Effects Determination
Southwestern willow flycatcher <i>Empidonax trailii extimus</i>	Endangered	Designated (no designated critical habitat in the project area)	The allotment is not within any designated critical, potential, or occupied habitat for this species, and was vetted using government data from Arizona Game and Fish (AZGFD) and the U.S. Fish and Wildlife Service (USFWS). The species is not present within the allotment. The Terms and Conditions discussed in 3.1 and wildlife exclosures mitigate impacts to wetland-riparian habitat on the allotment. Due to multiple comments during public involvement regarding this species it has been included here with an effects determination.	No Effect
Western Yellow-billed cuckoo ² <i>Coccyzus americanus</i>	Threatened	Designated	The allotment is not within the designated critical habitat, and two percent of the allotment is considered potential habitat. This species has not been documented within the allotment. The allotment lacks large, contiguous patches of riparian plant communities and perennial water to support this species.	No Effect
Wright's Marsh thistle ² <i>Cirsium wrightii</i>	Candidate	N/A	No record of species occurring within allotment boundary. The allotment lacks suitable habitat to support this species.	No Effect

¹Source: AZGFD Report, retrieved February 2, 2021 (AZGFD N.d.)²Source: USFWS Report, retrieved April 23, 2021 (USDI USFWS N.d.)

Table C-2: BLM Special Status Species of the Badger Den Allotment

Species	Comments
Birds	
American peregrine falcon <i>Falco peregrinus anatum</i>	This species breeds in open landscapes with cliffs for nest sites. During migration and winter periods, you can find the species in nearly any open habitat, but with a greater likelihood along or near large bodies of water and mudflats. The allotment is within their year-round habitat range. Low potential to occur on the allotment due to limited habitat suitability.
Arizona Botteri's sparrow <i>Peucaea botterii arizonae</i>	This is a subspecies of the Botteri's sparrow (<i>Peucaea botterii</i>), which is unlikely to occur in Arizona due to their year-round range primarily occurring in Mexico. This subspecies is found in grassland and coastal prairie areas and prefers tall grasses for nesting. Low potential to occur on the allotment due to limited habitat suitability.
Bald eagle <i>Haliaeetus leucocephalus</i>	Typically nest in forested areas adjacent to large bodies of water. They prefer to perch on tall, mature coniferous or deciduous trees that provide a wide view of their surroundings. The allotment is within their nonbreeding habitat range. Low potential to occur on the allotment due to limited habitat suitability.
Ferruginous hawk <i>Buteo regalis</i>	They breed in grasslands, sagebrush country, saltbush-greasewood shrublands, and edges of pinyon-juniper forests at low to moderate elevations. They winter in grasslands or deserts with abundant rabbits, gophers, or prairie dogs. The allotment is within their winter habitat range. Low potential to occur on the allotment due to limited habitat suitability.
Golden eagle <i>Aquila chrysaetos</i>	They live in open and semi open country with native vegetation. They're found mainly in mountainous areas, canyonlands, rimrock terrain, and riverside cliffs and bluffs. They nest on cliffs and steep escarpments in grassland, chaparral, shrubland, forest, and other vegetated areas. The allotment is within their year-round habitat range. Low potential to occur on the allotment due to limited habitat suitability.
Western burrowing owl <i>Athene cunicularia hypugaea</i>	They live in open, treeless areas with low, sparse vegetation, usually on gently sloping terrains. They can be found in grasslands, deserts, and steppe environments as well as pastures and agricultural fields. They are often associated with high densities of burrowing mammals (i.e. prairie dogs and ground squirrels). Allotment is within their year-round habitat range. Low potential to occur on the allotment due to limited habitat suitability.
Mammals	
Arizona myotis <i>Myotis occultus</i>	Arizona myotis occurs in ponderosa pine and oak-pine woodlands near water. The allotment lacks the necessary habitat; therefore, this species will not be impacted.
Banner-tailed kangaroo rat <i>Dipodomys spectabilis</i>	This species lives in open Desertscrub, creosote bush flats, open grasslands and sandy places. It favors a sparse covering of grasses, interspersed with a few mesquite trees and cacti. The allotment provides potentially suitable habitat for this species; therefore, this species may be impacted if present on the allotment.

Species	Comments
Black-tailed prairie dog <i>Cynomys ludovicianus</i>	Today, the black-tailed prairie dog is considered to be absent from the state of Arizona due to predation, extermination by landowners, and the loss of native grasslands; therefore, there would be no impact to this species.
Cave myotis <i>Myotis velifer</i>	This species forms colonies in caves, mines, buildings, and sometimes under bridges. They are aerial insectivores feeding on a variety of insects, primarily from three orders: Lepidoptera, Coleoptera, and Hymenoptera. The allotment lacks the necessary habitat; therefore, this species will not be impacted.
Greater western bonneted bat <i>Eumops perotis californicus</i>	This species roosts in cliff-face crevices and feeds high above the ground. They are rarely seen and only approach the ground at a few select drinking sites. They are only found in close proximity to perennial bodies of water. The allotment lacks the necessary habitat; therefore, this species will not be impacted.
Pale Townsend's big-eared bat <i>Corynorhinus townsendii pallescens</i>	This species occurs in pine forests and arid desert scrub, always near caves or other roosting sites. The allotment lacks the necessary habitat; therefore, this species will not be impacted.
Spotted bat <i>Euderma maculatum</i>	Spotted bats inhabit desert scrub and open forests and are always associated with a water source such as a spring, river, creek or lake. The allotment lacks the necessary habitat; therefore, this species will not be impacted.
Amphibians & Reptiles	
Desert mud turtle <i>Kinosternon sonoriense sonoriense</i>	The desert mud turtle is a subspecies of the Sonoran mud turtle (<i>Kinosternon sonoriense</i>). This species is usually found in spring, creeks, ponds, and intermittent streams. They typically inhabit oak-to-pinyon-juniper woodlands or pine-fir forests but may occasionally be found in desert and grassland areas. The allotment lacks the necessary riparian habitat to support this species; therefore, this species will not be impacted.

Source: AZGFD Report, retrieved February 2, 2021 (AZGFD N.d.)

Table C-3: Migratory Birds and Birds of Conservation Concern on the Badger Den Allotment

Species	Comments
American peregrine falcon <i>Falco peregrinus anatum</i>	Addressed as a BLM special status species above.
Bald eagle <i>Haliaeetus leucocephalus</i>	Addressed as a BLM special status species above.
Bell's vireo <i>Vireo bellii</i>	Found in dense shrubby or scrubby habitat, including brushy fields, early successional growth, riverine scrub, coastal chaparral, scrub oak, mottes (isolated patches) of shrubs and trees in prairies, saltcedar stands, and mesquite bosques. Especially in arid regions, Bell's Vireos are found along streams or in dry arroyos and gulches. Even when large trees such as cottonwoods and willows are present, the vireos tend to stay more in the low vegetation. They avoid open desert scrub, grasslands, and cultivated areas. Low potential to occur on the allotment.
Bendire's thrasher <i>Toxostoma bendirei</i>	Found in desert habitats including arid grasslands, shrublands, agricultural habitats. Use more open areas with shorter vegetation. Moderate potential to occur on the allotment.
Black-chinned sparrow <i>Spizella atrogularis</i>	Black-chinned sparrows are locally common in dry brushlands and chaparral from near sea level to 8,000 feet. They associate with sagebrush, rabbitbrush, ceanothus, and other chaparral species. They typically breed on rocky hillsides and winter downslope in desert scrub. Moderate potential to occur on the allotment.
Canyon towhee <i>Melospiza fusca</i>	Lives in desert grasslands and rocky and shrubby areas, often along arroyos, mesquite thickets along streams, and suburban settlements. They also occur at higher elevations, particularly in Mexico, where you may find them in desert grasslands, pinyon-juniper woods, and pine-oak forests. Low potential to occur on the allotment.
Chestnut-collared longspur <i>Calcarius ornatus</i>	Found in shortgrass prairies, rangelands, and desert grasslands. Wintering habitat exists in the eastern part of Arizona. Low-to-moderate potential to occur on the allotment in winter.
Common black hawk <i>Buteo anthracinus</i>	Typically found in woodlands near water where it hunts; shows an affinity for cottonwood trees at the northern end of its range. Low potential to occur on the allotment.
Ferruginous hawk <i>Buteo regalis</i>	Addressed as a BLM special status species above.
Golden eagle <i>Aquila chrysaetos</i>	Addressed as a BLM special status species above.
Gray's vireo <i>Vireo vicinior</i>	Found in pinyon-pine/juniper, mesquite scrub, oak scrub, and chaparral habitats. Hot, arid habitats usually have dense brush from near the ground to 6 feet high. Low potential to occur on the allotment.
Lark bunting <i>Calamospiza melanocorys</i>	Species is endemic to the grasslands and shrubsteppe of North America—they occur nowhere else. When breeding, they are most likely to be found in large areas of native grassland vegetation, especially wheatgrass, blue grama grass, needle-and-thread grass, and big sagebrush. Lark Buntings live among many species of prairie vegetation, including red triple-awn grass, four-winged saltbush, cottonthorn hornbush, and green-plumed rabbitbrush, all plants in which the birds may nest. They avoid bare ground when nesting,

Species	Comments
	preferring shortgrass and taller habitats. They usually nest at the base of a small shrub or cactus, so pure grassland is usually not suitable for breeding habitat. Heavily grazed shortgrass habitats, prairie dog towns, and recently burned fields are not generally used. Allotment is within the species' nonbreeding and migration habitat range. Low-to-moderate potential to occur on the allotment.
Lucy's warbler <i>Leiothlypis luciae</i>	Most common in dense mesquite woodlands (i.e. bosques) of the southwestern United States, where they can reach up to 5 pairs per acre. These woodlands are most prevalent near streambeds. Lucy's Warblers also breed (in lower densities) in stands of non-native tamarisk. Other common plants of such desert habitats include acacias, hackberries, and elderberries. In drier areas of scrub and grassland, they sometimes nest in stands of willows, arrowweed, palo verde, and ironwood. They also occupy riparian cottonwood-mesquite forests and, at higher elevations, transitional woodlands with ash, walnut, sycamore, and oak. They normally occur below about 3,000 feet elevation, but some inhabit open woodlands of sycamore, alder, and oak up to 5,800 feet in central Arizona. Allotment is within the species' breeding habitat range. Low-to-moderate potential to occur on the allotment.
Phainopepla <i>Phainopepla nitens</i>	Found mostly in desert washes that have mesquite, acacia, palo verde, smoke tree, and ironwood. They nest in these same desert trees and feed heavily on berries of the desert mistletoe, a parasitic plant of these trees. Low potential to occur on the allotment.
Rufous-winged sparrow <i>Peucaea carpalis</i>	Found in thorn scrub and arid grasslands. This species is uncommon and sparsely distributed across its range. The allotment occurs within the very northern end of their year-round habitat range. Low potential to occur on the allotment.
Sprague's pipit <i>Anthus spragueii</i>	Most nesting territories have scattered shrubs and relatively little bare ground. Key grass species in their nesting habitats include blue grama, junegrass, fescues, and various species of wheatgrass (crested, slender, northern, western), along with foxtail barley, Canby blue, speargrasses, salt grass, plains muhly, and threadleaf sedge. They do not nest in cropland and are uncommon or absent in non-native grasslands. On wintering grounds in Mexico and border areas of the southern U.S., they use both native and non-native grasslands with limited shrub cover, including some shortgrass environments, even occasionally athletic fields and heavily grazed pastures. Allotment is on the fringe of their wintering habitat. Low potential to occur on the allotment.
Western burrowing owl <i>Athene cunicularia hypugaea</i>	Addressed as a BLM special status species above.
Western yellow-billed cuckoo <i>Coccyzus americanus</i>	Addressed as a T&E species in table above.

Sources: AZGFD Report, retrieved February 2, 2021 (AZGFD N.d.); USFWS Birds of Conservation Concern 2008 (USDI USFWS 2008).

Table C-4: Species of Economic and Recreational Importance on Badger Den Allotment

Common Name	Scientific Name
Band-tailed pigeon	<i>Patagioenas fasciata</i>

Gambel's quail	<i>Callipepla squamata</i>
Javelina	<i>Pecari tajacu</i>
Mule deer	<i>Odocoileus hemionus</i>
Mountain lion	<i>Puma concolor</i>
Mourning dove	<i>Zenaida macroura</i>
White-winged dove	<i>Zenaida asiatica</i>
Scaled quail	<i>Callipepla squamata</i>

Source: AZGFD Report, retrieved February 2, 2021 (AZGFD N.d.)

Table C-5: General Wildlife on the Badger Den Allotment

General Wildlife^A	
Common Name	Scientific Name
Birds	
American Bittern	<i>Botaurus lentiginosus</i>
Arizona Bells' vireo	<i>Vireo bellii arizonae</i>
Black-chinned sparrow	<i>Spizella atrogularis</i>
Brewer's sparrow	<i>Spizella breweri</i>
Broad-billed Hummingbird	<i>Cynanthus latirostris</i>
Brown-crested Flycatcher	<i>Myiarchus tyrannulus</i>
Common black hawk	<i>Buteogallus anthracinus</i>
Common nighthawk	<i>Chordeiles minor</i>
Costa's hummingbird	<i>Calypte costae</i>
Dusky-capped flycatcher	<i>Myiarchus tuberculifer</i>
Eastern meadowlark	<i>Sturnella magna</i>
Elf owl	<i>Micrathene whitneyi</i>
Gila woodpecker	<i>Melanerpes uropygialis</i>
Gray flycatcher	<i>Empidonax wrightii</i>
Juniper titmouse	<i>Baeolophus ridgwayi</i>
Lincoln's sparrow	<i>Melospiza lincolnii</i>
Lucy's warbler	<i>Oreothlypis luciae</i>
Mountain pygmy-owl	<i>Glaucidium gnoma gnoma</i>
Pacific wren	<i>Troglodytes pacificus</i>
Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>
Sage thrasher	<i>Oreoscoptes montanus</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Sprague's Pipit	<i>Anthus spragueii</i>
Sulphur-bellied flycatcher	<i>Myiodynastes luteiventris</i>
Swainson's hawk	<i>Buteo swainsoni</i>
Western Grasshopper sparrow	<i>Ammodramus savannarum perpallidus</i>
Whiskered screech-owl	<i>Megascops trichopsis</i>
Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>
Wood duck	<i>Aix sponsa</i>
Yellow warbler	<i>Setophaga petechia</i>
Mammals	
Antelope jackrabbit	<i>Lepus alleni</i>
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
Harris' antelope squirrel	<i>Ammospermophilus harrisi</i>
Kit fox	<i>Vulpes macrotis</i>
Lesser long-nosed bat	<i>Leptonycteris yerbabuenae</i>

General Wildlife ^A	
Common Name	Scientific Name
Mexican desert bighorn sheep	<i>Ovis canadensis mexicana</i>
Mexican vole	<i>Microtus mexicanus</i>
Northern rock deer mouse	<i>Peromyscus nasutus</i>
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>
Western red bat	<i>Lasiurus blossevillii</i>
Western yellow bat	<i>Lasiurus xanthinus</i>
Yuma myotis	<i>Myotis yumanensis</i>
Amphibians & Reptiles	
Arizona mud turtle	<i>Kinosternon arizonense</i>
Gila monster	<i>Heloderma suspectum</i>
Gila spotted whiptail	<i>Aspidoscelis flagellicauda</i>
Hooded nightsnake	<i>Hypsiglena sp. nov.</i>
Regal horned lizard	<i>Phrynosoma solare</i>
Sonoran coral snake	<i>Micruroides euryxanthus</i>
Sonoran Desert toad	<i>Incilius alvarius</i>
Ornate box turtle	<i>Terrapene ornata</i>
Yellow mud turtle	<i>Kinosternon flavescens</i>

Source: AZGFD Report, retrieved February 2, 2021 (AZGFD N.d.); IDT field visits

^A General wildlife provided by AZGFD is based on Predicted Range Models for within 5 miles of the allotment boundary. It does not guarantee the presence or absence of the species.

Appendix D: Response to Comments from Public Scoping Period

Western Watersheds Project Comments		
Section	Comment	BLM Response
I	Erosion, invasive plant and non-native invasive plants are ubiquitous, a shift from grassland to shrubs is occurring throughout the allotment, and the BLM found that two of the standards for rangeland health are not being met.	<p>The shift from grassland to shrubs is addressed in Section 7 of the LHE, including the pathway back to reference condition and the role that livestock grazing could play in that shift of condition.</p> <p>Overall, Standards 1 and 3 are being met. Lands not meeting standards are a result of a number of factors including but not limited to historic overgrazing prior to the establishment of the Taylor Grazing Act and soil loss that resulted from that use, extended drought broken by intense thunderstorms, railroad and road development and subsequent effects on ecological function of hydrology, channel excavation in 1883 from the Gila River up the San Simon Valley to confine flow, and environmental effects from an earthquake in 1887 (Humphreys, 2015; USDI BOR, 2000).</p>
I	Curiously, despite the long history of livestock abuses of this land and documented ongoing trespass livestock use of this allotment, the BLM repeatedly states that even though the area is in obvious ecological distress, this is not due to current livestock use and that “properly managed” livestock grazing will not cause the future failure to meet standards.	<p>The grazing history is addressed in the LHE under Section 3. Grazing History, and in the EA under Section 1.1 Background. The prior permit was canceled in 1993 due to lack of adherence to the terms and conditions of the permit, and not for poor rangeland health conditions. Livestock trespass is addressed as involving fewer livestock than were previously permitted and the LHE documents that trespass is not a casual factor for poor rangeland health. The allotment is stated as being predominantly vacant since that time.</p> <p>The LHE analyzes the condition of the allotment as a snapshot in time and takes into consideration past actions, including incidental unauthorized use, which have altered the landscape,</p>

Western Watersheds Project Comments		
Section	Comment	BLM Response
		<p>such as the altered states from pre-Taylor Grazing Act activities. Current condition is compared to reference condition in the LHE and includes the pathway back to reference condition and the role that livestock grazing could play in that shift of condition. As stated in Section 7 of the LHE, “Livestock grazing is an appropriate use of the San Simon River when managed properly to allow for continued bank stability, channel aggradation, and recruitment or establishment of desirable riparian/wetland species.” Properly managed livestock grazing has been considered in this evaluation as an acceptable use of uplands. Where upland ecological sites have transitioned to alternative stable states, managed grazing is identified as a practice in transitioning back to HCPC if achievable. Correctly implementing the proposed grazing strategies is expected to assist with production and maintenance of riparian-wetland plant communities, such as the deferment of livestock from sensitive riparian areas during critical growing periods.</p>
I	<p>WWP strongly urges BLM reconsider this recommendation and consider retiring this allotment to allow for continued rest from livestock grazing so that these public lands may provide a refuge for wildlife and serve as potential study sites for restoration projects on historically degraded arid lands.</p>	<p>Continued rest from livestock grazing is considered in the EA under the No Grazing Alternative to establish a baseline for analysis. Implementation of the No Action Alternative is expected to result in negligible impacts to wildlife, soil erodibility and vegetation. However, the No Grazing Alternative does not meet the objectives of the Upper Gila San Simon Grazing Environmental Statement (UG) or Safford District RMP. These land use plans state, “the general objective of the proposed action is to permit livestock to utilize a harvest able surplus of palatable vegetation—a renewable resource—and thereby produce a usable food product. The proposed livestock management program is based on the multiple-use management concept, which provides for the demands of various resource uses and minimizes the conflicts among those uses or activities. Although the various</p>

Western Watersheds Project Comments		
Section	Comment	BLM Response
		uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals” (UG p. 1-6).
II	The BLM has an obligation to accurately discuss the long history of livestock grazing in Arizona and on this allotment, identifying how many livestock were historically grazed, how many livestock have been grazed in the past two decades, and disclose the impacts of that livestock grazing. The environmental analysis should describe how livestock grazing has contributed to and continues to exacerbate altered fire regimes, invasive species, loss of species diversity, and degraded watersheds. The BLM has not adequately or accurately provided this information.	<p>The Grazing History for the Badger Den Allotment includes: RMP designation of livestock authorization, changes to permitted use through grazing decisions, cancellation of permit, early trespass of livestock, removal of livestock, and later trespass incidental unauthorized use of fewer livestock. Impacts are reported in the LHE as “No resource damage has been observed or documented by incidental unauthorized livestock use on the Badger Den Allotment.” A more detailed account of grazing history is unnecessary in describing uses leading to current condition of the allotment. Recent litigation has no bearing on the analysis.</p> <p>The environmental analysis will discuss impacts to fire regimes, invasive species, loss of species diversity, and degraded watersheds (see Appendix B of the EA).</p>
II	While we appreciate that BLM has provided a brief recap of the controversial history of livestock grazing on this allotment, we do request that the complete history include the most recent litigation and BLM’s inappropriate attempts to authorize livestock grazing without providing for public input and review as required by NEPA.	<p>See comment above regarding the Grazing History for the Badger Den Allotment.</p> <p>A more detailed account of grazing history is unnecessary in describing uses leading to current condition of the Allotment. Recent litigation and plaintiff’s characterizations made in litigation have no bearing on the analysis.</p>
III.A	... we are confused as to what the BLM would like WWP, or any member of the public, to comment upon regarding the EA.	The EA was intentionally mailed as an incomplete EA on July 2, 2020 to Interested Publics. This was done to solicit comment on Chapters 1 & 2 of the EA as stated in the Notice of Comment Period letter dated June 26, 2020 “The enclosed EA includes only the first two chapters of the assessment including the purpose and need, preliminary issues for analysis, a description of the

Western Watersheds Project Comments		
Section	Comment	BLM Response
		Proposed Action, and alternatives. Your comments on the draft LHE, the purpose and need, preliminary issues for analysis, a description of the Proposed Action, and alternatives are appreciated...If you choose to provide input, please consider the following questions: Are there alternatives to the Proposed Action that should be analyzed? And Is there any additional information/data we should know about when conducting the analysis?" Comments received were considered and necessary changes made to conduct a complete analysis. Upon completion of the EA, it will again be provided to Interested Publics for additional comment.
III.B	We believe the Proposed Action is to authorize 1,776 AUMs for year-round use on the Badger Den allotment. The BLM should also examine at least one alternative that includes a reduced number of AUMs, 1,401 or fewer. The BLM should also consider an alternative that would provide for permanent retirement of this allotment.	Permitted numbers have been reduced from RMP designations through decision in the past as described in Section 1.1 above to ensure proper stocking rates on the Badger Den Allotment. An alternative implementing further reduction in AUMs was considered but eliminated from detailed analysis. As described above, the BLM is also considering a No Grazing alternative that would allow for retirement of this allotment.
III.C.1.	40 CFR 1508.27b(1) For the project area, and from our review of the EA and past NEPA and internal BLM documents that BLM has chosen not to incorporate into this project record, there appear to be significant long-term negative impacts associated with livestock grazing that have been minimized in the analysis, resulting in an inadequate analysis of the intensity of these impacts to all wildlife and native plants, as well as to the restoration area that is within this allotment.	<p>The BLM used all of the available data that was relevant to the analysis. The LHE and EA consider current condition and past contributors to current conditions. Impacts from livestock grazing to the pertinent resources are disclosed in the EA.</p> <p>All documentation necessary to conduct an appropriate analysis of impacts to wildlife were used in the preparation of the LHE and EA. Sources were cited, and references were provided for those sources.</p> <p>It is expected that the long-term impact would be negligible as those species would adapt to the change in conditions, and continue to forage, nest, and breed in the area.</p>

Western Watersheds Project Comments		
Section	Comment	BLM Response
III.C.2.	<p>40 CFR 1508.27b(2)</p> <p>This issue has not been addressed in the EA at all. Air quality impacts have not been adequately disclosed, nor have issues related to human safety while recreating in the area with livestock roaming freely. The area suffers from significant erosion, is prone to dust storms, increasing particulate pollution. The BLM should analyze the impacts of livestock grazing on desert soils and how it contributes to greater particulate pollution.</p>	<p>The BLM has reviewed the current National Ambient Air Quality Standards and nonattainment areas classified by the U.S. Environmental Protection Agency (EPA). The Project Area is not located in an area of nonattainment for particulate matter or ozone. No additional analysis is warranted.</p>
III.C.3.	<p>40 CFR 1508.27b(3)</p> <p>The project area includes several exclosure or restoration areas, including the Sands Draw Exclosure, HX Dam, as well as the San Simon River which is a rare riparian ecosystem in an otherwise extremely arid environment. Farmlands are adjacent to the allotment, and the Chihuahuan Desert provides potential habitat for multiple endangered species that are likely extirpated due to human uses, including and especially livestock grazing.</p>	<p>Sands Draw and HX Dam have been excluded from livestock grazing. Under the Proposed Action, the San Simon River would not be grazed during the critical growing season. There are currently no known occurrences of T&E species on the allotment based on monitoring data compiled by the AZGFD. All T&E species that were considered to have the potential for occurrence in this area were addressed in Section 3.4 and Appendix C of the EA. It is expected that the long-term impact would be negligible as those species would adapt to the change in conditions, and continue to forage, nest, and breed in the area.</p>
III.C.4.	<p>40 CFR 1508.27b(4)</p> <p>Unfortunately, the environmental impacts associated with livestock grazing are not scientifically controversial because they are well studied and the impacts are well known to be highly detrimental to wildlife and watersheds. However, livestock grazing on federal public lands is a highly controversial issue, especially in recent years with ranchers taking over a wildlife refuge in Oregon, failing to remove their errant livestock from federal public lands in Arizona, New Mexico, and Utah, among other states, and with</p>	<p>The environmental impacts associated with livestock grazing are not scientifically controversial as the impacts are well studied and well known. Thus, the effects from livestock grazing on the human environment are not scientifically controversial.</p>

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	livestock ranching “advocates” threatening violence against federal employees for trying to enforce livestock grazing regulations designed to protect those federal lands. This allotment itself has been the site of threats of violence against federal land managers and a ranching family known to openly violate federal livestock grazing regulations because they mistakenly believe they have some imagined “right” to destroy these lands. This controversy over how federal public lands should be used and managed has not been addressed in the EA.	
III.C.5.	40 CFR 1508.27b(5) While the adverse impacts of livestock grazing are not unknown – and indeed, are well established as wholly negative in hot, dry deserts – the effects of this action should be considered within the entirety of risks due to the many authorized uses of these irreplaceable public lands.	Impacts are identified and addressed within the context of the federal action, in this case issuing a term grazing permit for lands available for grazing. Impacts caused to other resources as a result of this Proposed Action are analyzed in the cumulative effects section of each issue in Chapter 3. Overall, these cumulative effects are related to recreation and mining activity and are negligible.
III.C.6.	40 CFR 1508.27b(6) This is the first opportunity since the 1990’s for the BLM to do an honest and thorough analysis of the impacts of livestock grazing on this fragile desert environment and the important natural resources that BLM should be protecting and restoring. Rather than doing that and recognizing that, the BLM is establishing a precedent for ignoring this responsibility. The BLM is basically saying it will authorize livestock grazing and allow future livestock grazing no matter what. There is a never-ending series of widely-spaced land health evaluations that inadequately identify the impacts of livestock grazing	Under 43 CFR 4100, the Federal Land Policy and Management Act, and Section 3 of the Taylor Grazing Act, the BLM has the authority to issue term grazing permits within permitted grazing districts. The proposed action is to issue a term grazing permit on lands available for grazing, and impacts will be analyzed in this context. The LHE provides the BLM an opportunity to review current condition of the land and determine if land health standards are being met as well as provide recommendations for progressing toward or continuing to meet those standards. The NEPA provides the BLM the opportunity to take a hard look at the Proposed and alternative actions and associated impacts

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	<p>to natural and cultural resources. And even decades after livestock grazing has stopped the impacts are still present, but not attributed to livestock if livestock grazing is not currently authorized, despite the fact that cows are grazing these lands without authorization on a regular basis. For example, there are massive areas of erosion, along with areas of non-native invasive plant species that have been introduced and exacerbated by livestock. These lands have not improved or recovered from livestock grazing that ended many years past, yet these lands are not accurately identified as unhealthy due to current and authorized livestock grazing, so the BLM proposes to allow livestock grazing to commence. It is clear that regardless of documented impacts, livestock grazing will be entrenched via this authorization in perpetuity. Furthermore, public lands ranching provides an economic boon to livestock operators and entrenches the concept of welfare ranching whereby this permittee can claim that in order to make a living in these harsh (and wholly unsuitable to livestock grazing) lands, he must be afforded the opportunity to suck at the public teat and continue to degrade these lands for the extraordinarily low price of just \$1.35 per AUM. BLM, please remember, it is not the job of the public, nor the publicly held lands, to support an archaic, outdated commercial industry that has long-ago lost its economic viability.</p>	<p>The LHE determined that Livestock grazing is an applicable use of lands on the Badger Den Allotment if livestock grazing is managed properly (as outlined in the LHE, the EA, and in response to comment I).</p> <p>Range Health Assessments noted roads and railroads as being contributing factors to the departure from reference conditions. In beneficial areas work could be considered to divert collected waters from roadways and onto upland sites through use of rolling berms and other diversion structures. The LHE also states, "Consideration should be given to deferment of livestock from sensitive riparian areas during critical growing periods to assist with production and maintenance of riparian-wetland plant communities."</p> <p>The EA discusses the grazing history and unauthorized use (as addressed in response to Comment I). The Proposed Action would be to allow 152 animal units to graze the 49,000-acre allotment which allows for only 2 cattle to graze per section of land each year. Although this use is low, it was determined to be the appropriate carrying capacity for the allotment through the Safford RMP. This analysis was appropriate at the time of evaluation and is considered appropriate for current allotment condition when implemented with appropriate terms and conditions for proper livestock management.</p> <p>Grazing fees are authorized by 43 CFR 4130.8-1, where grazing fees shall be established annually by the Secretary. BLM does not have the authority to go beyond the limits of the statute in determining annual grazing fees, as determined by Congress.</p>

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III.C.7.	<p>40 CFR 1508.27b(7)</p> <p>The BLM's usual policy of authorizing livestock grazing using EAs (or, often Categorical Exclusions) is a clear example of breaking down an action into small parts or determining it is temporary in order to render the impacts individually insignificant. Here, the BLM has broken up the analysis of the impacts of livestock grazing in this area, on at least three adjacent allotments, and has failed to analyze the impacts of livestock grazing from all allotments in the project area, including the impacts of trespass livestock grazing on the Badger Den allotment from the nearby and adjacent allotments, as well as the impacts of vegetation removal, increased non-native invasive species spread, altered fire regimes, damage to habitat connectivity, erosion, watershed damaged, and wildlife displacement, to mention just a few of the impacts that should have been analyzed. The BLM attempted to authorize this decision via the use of a Categorical Exclusion in a clear attempt to not only minimize impacts, but evade and discourage public participation in this process. The extremely short comment period – just 15 days – is further indication that the BLM does not want the public involved in the management decisions on public lands. BLM has been considering how to complete the analysis of livestock grazing authorizations for this allotment since at least 2010 with an initial determination to complete an EA then arbitrarily determined a Categorical Exclusion was appropriate. It would seem that BLM has made poor use of its</p>	<p>The BLM considers the impacts of livestock grazing in the greater area beyond the Badger Den Allotment as part of the cumulative impacts. In addition, the Safford RMP by incorporation of the Upper Gila San Simon Environmental Statement reviewed the grazing program as a whole.</p> <p>Vegetation removal by livestock consumption was considered as part of the carrying capacity analysis through the RMP. Non-native invasive species were noted as being few in the LHE. Native invasive species were present and had resulted in ecological site transitions away from reference condition. Return to reference condition was considered in Section 7 of the LHE (as described in response to comment I above) and could occur in the presence of properly managed livestock grazing. The NEPA also includes impacts to multiple resources such as impacts of livestock grazing on vegetation and wildfire addressed in the EA under section 3.1 state that impacts would be negligible to minor. Watershed/soils/erosion are considered in Sections 3.2 and 3.3 of the EA and state that impacts would be negligible to minor. Impacts to wildlife/wildlife habitat resulting from the Proposed Action are identified in Section 3.4 of the EA and state that impacts would be negligible to minor.</p> <p>The BLM provided a 15-day public scoping period on the draft LHE and Chapters 1 and 2 of the EA. The BLM is going to have a second 30-day comment period on the full EA and unsigned FONSI. This will allow interested parties to have two opportunities to comment.</p>

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	<p>time and is at this late date cutting corners to avoid public input and rush to a final decision because the permittee has grown impatient. While Mr. Klump's impatience is understandable, it does not provide BLM with a free pass to avoid adequate public involvement and rigorous adherence to federal law. WWP hereby notifies BLM that the continued failures and refusals to comply with NEPA and provide for adequate public input and oversight on public lands management decisions is likely to result in violations of federal regulations that will, again, require challenges in court. We strenuously recommend BLM strictly adhere to public involvement requirements and err on the side of over-inclusion. Had the BLM heeded WWP's advice and concerns in 2019, it could have avoided litigation on this same allotment and would have wasted far fewer public resources in the process.</p>	
III.C.8.	<p>40 CFR 1508.27b(8)</p> <p>There is no information regarding historic sites within this allotment, despite the well-known long-term use of this area by humans. There is a railway and there are dams created to control erosion that were created many decades prior. The historic value of these resources is not adequately disclosed.</p>	<p>Cultural resources were evaluated. Allotment case files, Allotment Management Plan (AMP) files, range project files, Water Source Inventory files, and Cultural Resource files were reviewed to determine areas of livestock congregation and whether these areas have been previously inventoried for cultural resources. The records indicate that there are 15 areas of livestock congregation that required an intensive field inventory. This field inventory was completed on June 29, 2009. One historic property was identified in an area of livestock congregation, however it is not eligible for inclusion on the National Register of Historic Places (NRHP), no mitigation is recommended as a BLM responsibility or as a term or condition of the permit, to protect cultural values identified above.</p>

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III.C.9	<p>40 CFR 1508.27b(9)</p> <p>The BLM acknowledges that the area no longer provides suitable habitat for most species listed under the ESA. However, Gila chub could be restored to the Sands Draw Exclosure area and the analysis in the LHE and EA fail to adequately disclose how this livestock grazing authorization may preclude the translocation of the Gila chub in the future when “authorized” livestock enter and destroy the Sands Draw Exclosure restoration area.</p> <p>The Northern Mexican gartersnake could also inhabit the restored areas of this allotment if brought to the area of the San Simon River during flood events.</p>	<p>The Sands Draw Exclosure will be excluded from livestock grazing. Currently, there are no known occurrences of the Northern Mexican gartersnake within the vicinity of the Badger Den Allotment. This analysis was based on current and reasonably foreseeable conditions. The BLM would follow all regulations set forth by the ESA should the Northern Mexican gartersnake be reintroduced to the area in the future.</p>
III.C.10	<p>40 CFR 1508.27b(10)</p> <p>There are ongoing issues with trespass livestock on the Badger Den allotment. This information is not adequately disclosed in the EA. Because trespass livestock are not adequately disclosed or discussed in the EA, the public is not able to review or comment upon violations of the grazing regulations, nor on potential NEPA, FLMPA, or other violations related to trespass livestock. Similarly, it is unclear whether the changes to the number and location of AUMs in this project will have the effect of increasing livestock grazing (authorized or unauthorized) into the Sands Draw exclosure.</p> <p>Another consideration is whether the BLM is facilitating violations of the Clean Water Act (CWA). Livestock grazing contributes to continued</p>	<p>Grazing has not been authorized since 1993 and in that time range improvements have not been maintained. Pursuant to 43 CFR 4110.2-1, Base Property, a grazing permit can be issued to the permittee and the BLM staff will work together to ensure that the fences around enclosure areas, like Sands Draw, are maintained to keep livestock out before livestock use can be authorized and the permit will reflect the base property allocations respectively.</p> <p>The Arizona Department of Environmental Quality (ADEQ) is the agency that monitors streams and water bodies for impairments and determines if they are impaired or in conformance with the Clean Water Act (CWA). Currently, ADEQ has not identified any stretches of the Gila River directly downstream of the confluence with the San Simon River as being impaired. All other allotments in the San Simon Valley have been authorized for livestock and have not affected the impairment of</p>

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	degradation of the San Simon watersheds and sedimentation of the Gila River via the watershed has caused violations of the TMDL standards set for the Gila River by the Arizona Department of Environmental Quality. The cumulative impact of authorizing additional livestock use in this watershed to the TMDL for the Gila River must be disclosed and any possible contributions to the violation of the CWA must be identified.	the Gila River directly downstream of the watershed. Implementation of the Proposed Action is not anticipated to result in adverse impacts to streams and water bodies downstream of the allotment.
III	The area is subject to historic drought with 100 percent of the county in which the allotment is located categorized as having severe drought in 2018, and moderate drought in 2019.	Conditions of drought were analyzed in the LHE and considered in the EA. The LHE describes ecological sites as exhibiting natural fluctuation with fire/drought to maintain reference state conditions. The Safford RMP incorporates the Upper Gila San Simon ES which analyzed grazing capacity for allotments and incorporates vegetation production due to fluctuating rainfall amounts. The Safford drought policy follows the Upper Gila-San Simon Grazing EIS decision document which states utilization limits clearly.
III	Ecological Site Descriptions for the allotment have not all been developed. This leaves the BLM to guess as to the ecological potential of the area.	The BLM has used best available data for determinations of the LHE and the analysis of the EA. Although some of the ecological site descriptions are in the provisional stage or have not been fully established, nearby similar sites were considered in the analysis and associated determinations. Table 9 of the LHE shows allotment acreage with established ecological site descriptions and includes only 3.5 percent of the allotment with no ESD data. The key areas selected for monitoring and assessment of the LHE are a representative sample and reflect what is happening on the grazing allotment as a whole as described in section 6.2 of the LHE.
III	The BLM has chosen to change how and where monitoring data is collected for this allotment,	Monitoring and assessment methods include RHAs, a PFC assessment, and monitoring data collected through the University

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	making comparisons and developing trend analysis nearly impossible.	<p>of Arizona (UA) and Assessment Inventory and Monitoring (AIM). While UA and AIM monitoring results are both accurate, they are not comparable due to different collection parameters, but can both be used to infer data for a site. The UA data is used to show current condition and gives some indication of trend on the allotment (LHE Section 6.4). Because future BLM monitoring will continue to use the AIM strategy, the AIM data is used both to show current condition as well as to establish a baseline for future monitoring. Comparisons are made and trend is analyzed in the LHE (LHE Section 7.3.3). Tables, maps, and written description are all provided in the LHE to assist the reader in understanding the BLM's rationale in making their determinations (LHE Appendix A, and sections 7.1.1, 7.2.1, and 7.3.3).</p> <p>As stated in the Instructional Memorandum No. AZ-IM-2021-003, "AIM is actively being implemented in over 70 BLM field offices and data is being collected at more than 20,000 terrestrial and 2,500 lotic monitoring locations from Alaska to New Mexico. The BLM decisionmakers use AIM data to inform many types of management actions on BLM lands. The AIM Strategy provides a nationally consistent monitoring approach that provides information at multiple scales about resource extent, condition, and trend."</p>
III	...damage caused by historic livestock grazing, clearly indicating the extraordinary circumstances involved with livestock grazing in arid lands.	Current condition of the allotment is attributed to a number of factors through the LHE and include: Historic overgrazing prior to the establishment of the Taylor Grazing Act and soil loss that resulted from that use, extended drought broken by intense thunderstorms, railroad and road development and subsequent effects on ecological function of hydrology, channel excavation in 1883 from the Gila River up the San Simon Valley to confine

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		flow, and environmental effects from an earthquake in 1887. These factors and current condition being described in the LHE do not place this permit issuance EA in a position of “extraordinary circumstances” and is fully addressed in the EA and associated FONSI.
III	Two of the three riparian reaches are identified as Functioning at Risk.	These reaches were rated FAR because they were missing desired obligate species. Banks were still stabilized with Bermuda grass and there were salt cedar and mesquites lining the banks. For Reach 2 and 3 to move into PFC the ID Team would like to see an increase in the alakali sacaton instead of a few sporadic patches, and more willow individuals.
IV	insufficient information was provided regarding which infrastructure and the precise state of disrepair.	Range improvement presence and/or condition will be addressed in the EA as far as it affects the proposed or alternative actions (EA section 3.1.3, and Figure 3). Information regarding which infrastructure and the precise state of disrepair is not addressed if inapplicable to the EA. The UG claims necessary range improvements would be completed before the management system would be put into practice (p. 1-8). A cooperative agreement between the BLM and the permittee would be established to identify what necessary range improvements would need to be completed before grazing is authorized. This includes base property and boundary fences and any range improvements necessary to facilitating the terms and conditions of the permit.
IV	Please provide specific information as to which range infrastructure is in disrepair and the extent of that disrepair. Are fences completely down? Which fences? Has the permittee/allottee failed to maintain “wildlife” waters on the allotment? If so, on which pastures?	Range improvement presence and/or condition will be addressed in the EA as far as it affects the proposed or alternative actions. Information regarding which infrastructure and the precise state is not addressed if inapplicable to the EA. Badger Den Well is in process of being repaired. For purposes of this EA, impacts of fully permitted use is being considered. If

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		Badger Den well or other base waters are in disrepair, then livestock numbers will be affected as described in the EA (EA Section 3.1.3).
IV	How will wildlife be impacted by any proposed, completed, or neglected infrastructure? How will the infrastructure fragment wildlife habitat and disrupt wildlife corridors?	This EA does not analyze the implementation of new infrastructure, and there are no known records of any big game migratory species occurring on the Badger Den Allotment; therefore, there would be no fragmentation of habitat or a disruption to wildlife corridors. There is no indication that pre-existing infrastructure has disrupted wildlife habitat connectivity or migration.
V	This “base water” appeared to be non-functioning and the grazing agreement stated that if “Badger Den Well is not functioning at the time of transfer, cattle numbers shall be reduced to correspond to the service area of this base water.” Please disclose whether and/or when this well was repaired.	Badger Den Well is in process of being repaired. For purposes of this EA, impacts of fully permitted use are being considered. If Badger Den well or other base waters are in disrepair, then livestock numbers will be affected as described in the EA (EA Section 3.1.3).
VI	In previously provided documents the BLM identified HX Dam, Sands Draw, Joy Valley, and Ryan Dike as “protection areas” and that livestock must be kept out of the areas. We are concerned that these area exclusions may be modified to provide points of water access with any approved allotment management plan. Please clarify and explain if these areas are identified as “protection areas,” and if so, please state whether or not these areas would be subject to any modifications to allow livestock access to water.	Identified “protection areas” or exclosures are designated to keep livestock out. Modification to these exclosures would require additional NEPA documentation to allow access for livestock. This NEPA document does not address changes to the exclosures.
VII	The BLM must explain the rationale for this change in process and we ask that BLM also explain why WWP was not notified of any opportunity to participate in any LHE field visits.	In order to complete a permit issuance EA the LHE needed to be completed. The process by which the BLM conducts LHEs has not changed. Under the pressure of tight timelines, issuing a

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		<p>notice of field visits was not practicable nor is the BLM required to do so.</p> <p>In accordance with CFR 4130.3-3 Modification of permits or leases, “To the extent practical, the authorized officer shall provide... interested public an opportunity to review, comment and give input during the preparation of reports that evaluate monitoring and other data that are used as a basis for making decisions to increase or decrease grazing use, or to change the terms and conditions of a permit or lease.” Public participation in field visits is not required. In an attempt to CCC with interested parties we have provided the draft of the LHE to all interested parties to solicit comment.</p>
VII	Trespass livestock for the past 20 years was noted in the LHE, but the BLM appears to believe that trespass livestock have had absolutely no impact on the allotment. This is inaccurate and this assumption must be corrected.	<p>The Grazing History for the Badger Den Allotment includes: RMP designation of livestock authorization, changes to permitted use through grazing decisions, cancellation of permit, early trespass of livestock, removal of livestock, and later unauthorized use of fewer livestock.</p> <p>The LHE analyzes the snapshot in time that would take into account the historic impacts, and the indicators would be influenced by activities up until that point of monitoring.</p>
VII	Of the 13 areas monitored for this LHE, only a few appear to have data from the past to compare with current data. The BLM has also changed how monitoring is done on this allotment, changing between the AIU/UA site system and the RHA system, but including very little overlap in key area monitoring sites and types of monitoring. When identifying trends and attempting to identify long-term changes on a landscape, these changes create	<p>Key areas monitored may change in analyzing rangeland health on the allotment. RHA, AIM, UA, PFC, and other monitoring methods were used to analyze what is happening on the allotment.</p> <p>The BLM has begun to implement the use of a new monitoring strategy, “Assessment, Inventory and Monitoring” (AIM). The AIM strategy is a national strategy designed to facilitate integrated, cross-program resource monitoring at multiple</p>

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	<p>confusion and a void in the analysis. The data sets are not comparable. How then can the BLM know what is actually happening on this allotment?</p> <p>There is insufficient information regarding why BLM chose new key areas in 2019 and 2020, and why other key areas were abandoned. Site identifiers are not consistent in the LHE, making it difficult to understand the “analysis” available in the charts and tables.</p>	<p>spatial scales of management. The AIM strategy provides a standardized process for the BLM to collect quantitative information on the status, condition, trend, amount, location, and spatial pattern of resources on BLM-managed public lands.</p> <p>New AIM monitoring was conducted at the same location as previous UA key areas. These AIM assessments provided similar ecological information regarding vegetation cover and composition as the UA key areas.</p> <p>RHA assessments were conducted at most AIM sites as additional data to inform the LHE. Some of the sites did not have an THA assessment in order to reduce duplicative monitoring in the same Ecological Site. Five RHAs were conducted at additional sites to provide supplemental information for the allotment.</p> <p>A cross-walk table of site names is provided in the EA (Table 1). Key area locations are provided in Table 10 and Figure 12. Clarification is also given in the text of the EA describing which site is being addressed. All of these aspects of the document assist the reader in understanding the analysis.</p>
VII	<p>The LHE is missing key information regarding the level of trespass that has occurred. The LHE should include this information for the pasture within which each site is monitored. For example, WWP reported trespass livestock in November 2019. BLM notes in the LHE that it has documented other instances of trespass livestock. This information should be included for each site. How much livestock has trespassed on BD1 through BD10? WWP provides</p>	<p>In the LHE and the EA the BLM describes the current condition of the resources on the Badger Den allotment which takes into account the impacts from past uses including unauthorized livestock use.</p>

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	Appendix I and J as a reminder of the information WWP provided regarding trespass livestock in late 2019.	
VIII	<p>As the BLM is aware, a severe drought has gripped the American Southwest since 2000.</p> <p>The BLM should include a thorough analysis of the impacts of livestock grazing on the environment in light of the compounding impacts of climate change.</p>	Conditions of drought are considered through the AZ Drought Policy. Information regarding implementation of the drought policy is not included in the EA as it will be applied regardless of the EA. The EA discusses allowable use levels established through the RMP. Additional information is provided in response to comment III.
IX.A	For calculating AUMs, wherein the animal unit is defined as one mature cow and her nursing calf, the BLM should use the well-known average livestock weight, which is in excess of 1,300 pounds.	Animal unit month (AUM) means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month. The weight of the cow is not considered in the grazing regulations. Adjustments to permitted use are based on assessments of rangeland health. If livestock require more forage to support a larger weight, then forage could show excessive use and adjustments to carrying capacity would be made to comply with allowable utilization rates established in the Safford RMP.
IX.B	The cumulative impact of unauthorized livestock grazing must be disclosed in the forthcoming revised EA or EIS and the analysis of any proposed livestock grazing impacts must account for the impacts associated with trespass livestock.	The impacts of past and present unauthorized livestock grazing has been captured in the affected environment.
IX.B	The BLM must therefore disclose and analyze the impacts of trespass livestock onto and from this allotment, especially as it will impact the exclosures in the project area, including the Sands Draw exclosure and restoration area.	The BLM recognizes that unauthorized livestock use has occurred on the Badger Den Allotment, and the effects of this use has been documented in the associated LHE. However, unauthorized livestock use is not a part of the Proposed or No Action Alternatives, and therefore is not analyzed in this EA. Livestock use is either authorized through the issuance of a grazing permit, or it is unauthorized and the BLM will act according to regulation 43 CFR 4150

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IX.C	The impacts to wildlife from abandoned fences, defunct waters, corrals, and non-functioning cattle guards can hardly be considered “improvements” and those impacts must be analyzed as part of the forthcoming revised EA or EIS.	Existing infrastructure is already in place and therefore no additional NEPA is required. The Proposed Action implements the requirement that enclosure fencing is in proper functioning condition for associated livestock use, and base waters are functional for associated livestock use. Any new infrastructure would require additional NEPA analysis.
IX.D	Include an Economic Impacts Analysis	<p>An analysis of program costs is beyond the scope of this Environmental Assessment. Grazing is considered a public service and is part of the BLM mission, as defined in FLPMA. As part of the agency mission, program administration is considered a public service and is not in any kind of comparative competition with private or state government programs. The grazing fee charged by the BLM is mandated and determined by formulas in the Public Rangeland Improvement Act (PRIA, PL 95-514) of 1978. BLM does not have the authority to go beyond the limits of the statute in determining annual grazing fees, as determined by Congress. The Federal government is not responsible for “livestock infrastructure repair” and does not determine what funding sources allottees may use.</p> <p>BLM does not analyze economic impacts at the individual level. At the industry level, the addition of roughly 1,500 AUMs from the leasing of the Badger Den Allotment would not be reasonably expected to have significant impacts to the livestock industry in either Graham County, or the State of Arizona. No further economic or social impact analysis is warranted.</p>
XI	Please explain how long vegetation types like those found on the Badger Den allotment take to recover from “historic” livestock overuse.	Current condition of the allotment is attributed to a number of factors through the LHE and include: Historic overgrazing prior to the establishment of the Taylor Grazing Act, extended drought, railroad and road development, channel excavation in 1883, and an earthquake.

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		The LHE provides insight into Ecological Site Descriptions within the Badger Den allotment including comparison between current condition and historic (reference) condition and potential return to reference condition. Timing for return to reference condition is not considered because sites which have departed from reference condition may require additional hands-on management approaches in combination with proper livestock grazing.
XI	Please identify the amount needed and specific sources of funding for any and all monitoring of livestock use throughout the allotment, including monitoring for trespass or unauthorized livestock use. The information on monitoring should include details on the regularity, timing, location, staffing capacity, public outreach and involvement, reporting metrics, and reporting format and regularity for monitoring. Without utilization data or monitoring, especially for trespass or unauthorized use, the impacts of livestock grazing cannot be appropriately managed.	The BLM will continue to monitor rangeland condition as well as conduct periodic compliance inspections per regular operations as instructed through the BLM Range Handbooks including H-4400-1 Range Monitoring & Evaluation, and H-4180-1 Range Health Standard. This data and subsequent analysis of data will assist with appropriate management of BLM lands. Public outreach through Consultation, coordination, and cooperation as required in the grazing regulations will be adhered to.
XI	Would the BLM consider remote sensing for monitoring in a more comprehensive manner to more accurately determine the impacts of livestock grazing on native vegetation and watershed conditions? Historic grazing inventories are compatible with contemporary satellite image classifications for large-scale landcover change detection.	Remote sensing is not an appropriate use of geospatial data analysis for land health evaluations. Currently, drone use is not an option because it is not authorized under the Department of the Interior. Satellite imagery is used to support analyses, but at this time it is not the main form of analysis.
XI	Has the BLM considered retiring this allotment for use as part of a comparative study with other allotments in the San Simone watershed and sub-basin to determine the impacts of livestock removal	The No Grazing Alternative is considered in the EA, and if this were selected, the BLM would revise or amend the Safford District RMP, and the allotment status would be changed to inactive.

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	and restoration efforts in highly degraded watersheds? If not, would the BLM consider this option? If not, please explain why not.	
XI	Please identify a drought contingency plan for all alternatives which includes how and how often the BLM will monitor for drought, how permittees will be notified of changes to AUMs or permits due to changing precipitation conditions, how the public will be notified about these changes and conditions, and a specific method for the public to communicate their concerns about livestock grazing during periods of drought. The costs of any contingency plan and/or drought monitoring must be disclosed to the public.	See response to the comment above in section VIII. Conditions of drought are considered through the AZ Drought Policy.
XI	To the extent that this issue is not addressed above, please provide an inventory and economic impacts analysis of the livestock grazing infrastructure, including the state of repair/disrepair, functioning/non-functioning waters, and provide text and maps explaining the economic impacts and locations of all livestock grazing infrastructure.	<p>Range improvements and infrastructure are identified on Figure 3 of the EA. Range improvement presence and/or condition will be addressed in the EA as far as it affects the proposed or alternative actions. Information regarding which infrastructure and the precise state is not addressed if inapplicable to the EA.</p> <p>Furthermore, the Federal government is not responsible for “livestock infrastructure repair” and does not determine what funding sources allottees may use.</p>
XI	Can you please provide the stocking rate analysis? (asked in 2019 and not answered)	<p>The grazing capacity analysis for the Badger Den Allotment was determined in 1978 as a part of the UG and was incorporated into the grazing permit in 1981 through a grazing decision. The UG was incorporated into the Safford RMP in 1991.</p> <p>The Grazing History in the EA for the Badger Den Allotment includes: RMP designation of livestock authorization and changes to permitted use through grazing decisions.</p>

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XI	What is the carrying capacity for this allotment? When was the carrying capacity determined? (asked in 2019 and not answered) Please see McIntosh et al 2019, which indicates that Chihuahan Desert rangelands have lost 43% of grazing capacity and that, in light of climate change, higher temperatures, more frequent droughts, and lower and more erratic precipitation will adversely impact grazing capacity. See also Peters et al. 2015, especially Figure 3, showing a “continued decline in livestock carrying capacities” starting in the 1950s	The grazing capacity analysis for the Badger Den Allotment was determined in 1978 as a part of the UG and was incorporated into the grazing permit in 1981 through a grazing decision. The UG was incorporated into the Safford RMP in 1991. The Grazing History in the EA for the Badger Den Allotment includes: RMP designation of livestock authorization and changes to permitted use through grazing decisions.
XI	We strongly recommend that the prompt removal of livestock carcasses be included in any grazing agreement or AMP developed for this allotment. (asked in 2019 and not addressed)	This requirement was considered unnecessary and was not included in the EA for addition to the permit.
XI	How does the historic condition of perennial grasses compare to the current condition? (asked in 2019 and not answered)	The LHE provides insight into Ecological Site Descriptions within the Badger Den Allotment including comparison between current condition and historic (reference) condition as described in Section 7.1 for the RHAs, as well as in 7.3 for the DPC objectives.
XI	What is the history of rills and erosion on the allotment for all pastures and all soil types? (asked in 2019 and not answered)	Sandy Loam Upland 8-12 RO41X13215AZ is the only ESD that says that rills are to be expected. Due to historic grazing, degradation of ephemeral washes began to create gullies. Sediment barriers and detention dam were put in place to allow sediment to fill in behind those structures. Sands Draw Detention Dam is one of many examples of those structures helping with aggradation instead of degradation of the landscape.
XI	Are there any ephemeral springs or streams on the allotment? (asked in 2019 and not answered)	Reach one of the San Simon River was identified as being ephemeral. There are several other ephemeral washes, many are unnamed in the USGS NHD Layer.

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XI	What is the impact of livestock grazing on invertebrate species such as, for example, grasshoppers and the species that prey upon invertebrates? Please see Lightfoot 2018.	The BLM has proposed a seasonal restriction along the San Simon River to promote growth of more riparian facultative and obligate species, and to reduce the amount of ground disturbance during the wet growing period. Both effects from the seasonal restriction would benefit invertebrate species.
XI	What is the analysis of the water quality from any and all wells that will be used for livestock on the allotment? Are there concerns regarding arsenic, flouride, or any other chemicals found in amounts that exceed ADEQ limits? Has the water been, or will the water be, tested? What impact does water quality have on the livestock and its palatability?	None of the wells used for livestock have been tested on the allotment. Currently there are no concerns and no plans to conduct regular testing of these wells.
XI	Is the poor range condition negatively impacting ephedra species by facilitating mammal herbivory? See Whitford and Steinberger 2020.	Under the Proposed Action, shrub species would be available for livestock use. The established carrying capacity for the Badger Den Allotment is established to allow an average of 40 percent of key perennial grass species. Cattle eat multiple vegetation types but often favor grasses over shrubs or forbs.
XII	The relationship between livestock grazing and fire is complicated, and the BLM has done inadequate analysis of the impacts of returning livestock grazing to this allotment as it relates to fire and grassland conversion.	The LHE addresses the current and historical conditions for the Badger Den Allotment, which includes fire occurrence. Those conditions were incorporated into the EA as part of the Affected Environment.
XII	New scientific studies more definitively link the presence of livestock grazing with cheatgrass. Timeseries data and results in Williamson et al. (2019) indicate that grazing corresponds with increased cheatgrass occurrence and prevalence regardless of variation in climate, topography, or community composition, and provide no support for the notion that contemporary grazing regimes or grazing in conjunction with fire can suppress	The BLM Safford Field Office conducts annual monitoring for invasive and noxious weeds on BLM-managed lands. The annual monitoring efforts along with several ID Team field visits to the Badger Den Allotment have found that downy brome (i.e, cheatgrass) is not currently present within or in close proximity to the allotment. Monitoring of the allotment will continue to occur in the future.

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	cheatgrass. This concept is applicable to the Badger Den and invasive species of grasses that are spread by livestock use, and the BLM has not analyzed these impacts with a critical eye towards protecting natural resources. The continued spread of invasive species of plants that are likely to alter the fire regime on the allotment present a clear risk to native plants and wildlife.	
XIII	The regulatory environment of a project's implementation is part and parcel of a hard look at the effects of any plan amendment. Because so many federal regulations are currently being revised, it is reasonable to consider how this will affect the outcome of the future analysis that is identified as part of this project. As examples, reasonably foreseeable future actions that should have been analyzed (and should be analyzed in the forthcoming EIS) are the revisions underway to the Council on Environmental Quality (CEQ) NEPA rules and the BLM's grazing regulations. Therefore, the agency must admit the extent to which those NEPA processes may no longer be required.	The BLM is not required to consider proposed regulation changes in the NEPA analysis. The Badger Den EA was initiated prior to the new CEQ NEPA regulations going into effect on September 14, 2020. Forthcoming NEPA analyses that are done under the new CEQ NEPA regulations will still meet the requirements of the NEPA as the law has not changed. The BLM's proposed grazing regulations changes are not yet finalized and thus any changes as a result of those proposed regulations would be considered speculative.
XIII	The BLM must address the impacts of these proposed changes and discuss how any new categorical exclusions proposed in the grazing regulations revision might impact wildlife habitat and other natural resources.	The BLM does not address any impacts of the proposed changes to any new categorical exclusions because these regulation revisions are simply proposed and by analyzing impacts through this lens would be speculative.
XIV	Simply because the overarching land management plan describes these allotments as "available" for grazing doesn't preclude the agency from taking a	Federal actions, in this case issuing a term grazing permit for lands available for this use, is subject to NEPA. The NEPA process provides this hard look at resources at the site-specific level by preparing an environmental assessment to identify and

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	hard look at the balance of uses at the site-specific level.	analyze resources that may be impacted by proposed federal action, which is what the BLM is doing.

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LHE – 1	<i>On page 2 under grazing history in the paragraph beginning ‘After cancellation’, remove ‘repeated willful’ and replace it with ‘documented’. Also remove ‘by the previous permittee’. For purposes of this LHE there is no relevance to how the trespass is categorized or by whom.”</i>	The words "repeated willful" are used instead of "documented" to show the historic severity and longevity of the trespass action more accurately. The repeated willful trespass is not noted as having affected the health of rangelands, however, the grazing history is intended to give an accurate depiction of historic use. The use of the words "by the previous permittee" were left in the document to show that the trespass was a result of one entity and when that was resolved, future unauthorized uses were minimal and not persistent.
LHE – 2	<i>On page 4 the term “anthropogenic spring” when referring to the Sands Draw exclosure is incorrect. The ponds are fed by a well. This change will also promote continuity with the description of the Sands Draw area on page 34.</i>	The term “anthropogenic spring” has been changed to “well with artesian flow.”
LHE – 3	<i>The identification of reaches 2 and 3 of the San Simon River bed as Riparian-Wetland is inaccurate. The determination that those reaches are other than ephemeral has not been shown. No measurements have been taken to demonstrate that water flows at any time other than flood events or more or less frequently in any of the reaches identified. Support for the determination is</i>	As mentioned in the LHE, the United States Geological Survey Agency (USGS) has identified the stretch of the San Simon River on the Badger Den Allotment to be intermittent. That is why it is considered for Standard 2 of the LHE. Although all three reaches are classified as intermittent, the LHE states that reach 1 is functioning as an ephemeral drainage because of lack of flow from upstream dams and dikes. Reaches 2 and 3 function more as an intermittent river than reach 1 because of the addition of flow from Sand Draw (ephemeral) and other upland areas resulting in

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	<i>only that a few seep willows are present. There is otherwise an absence of obligate species. The fact that Sands Draw joins the San Simon River bed in itself is no justification for riparian determination. Sands Draw is also ephemeral in nature. The saline well within the Sands Draw exclosure does leave increasingly salty deposits in the watershed, but the well water evaporates prior to entering the San Simon River bed.</i>	<p>an overall increased amount and duration of flow, therefore, the PFC assessment was conducted. Presence of seep willow (<i>Baccharis salicifolia</i>), which is not a true willow, was not used to justify Intermittent status, or as justification for riparian habitat.</p> <p>Although considered intermittent, PFC showed a lack of riparian obligate species (only facultative and upland vegetation was present), and the lack was due in part to lack of water. The PFC considers site potential. The current lack of obligate riparian species does not mean that the San Simon is incapable of producing such vegetation in the future with proper grazing management and favorable climatic conditions.</p>
EA – 1	<i>On page 8 under other terms and conditions, Ryan Detention Dam has been listed as an area of indefinite livestock exclusion. There is no identifiable justification or reasoning for this condition to be on the permit and it should be withdrawn from the terms and conditions.</i>	<p>This term and condition was on the previous permit. There is no riparian vegetation behind the Ryan Detention Dam, and therefore the exclosure fence is not for preservation of riparian habitat but is for the protection of the detention dam itself.</p> <p>In accordance with 43 CFR 4130.3-2 Other terms and conditions, "The authorized officer may specify in grazing permits or leases other terms and conditions which will assist in achieving management objectives, provide for proper range management or assist in the orderly administration of the public rangelands."</p>
EA – 2	<i>Grazing can be a useful tool in restoring the degraded San Simon floodplain in the San Simon Pasture, Ryan Seeding Pasture, and Joy Valley Pasture by loosening the soil with hoof action for increased water retention and seed distribution. Water</i>	Consideration for water development would require further NEPA. This EA is for permit issuance only. Maintenance of pasture and boundary fencing is required upon permit issuance to manage movement of livestock and prevent livestock from being trapped in areas without adequate water sources.

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	<i>availability in these pastures is currently nonexistent. Water is essential for wildlife and livestock distribution. A critical concern is the likelihood of livestock becoming trapped in those pastures without water. Watering infrastructure needs to be developed to prevent animals from perishing from lack of water. This should be addressed by appropriate means.</i>	

Appendix E: Summary of Response to Comments from Public Comment Period

Commentor/ Section	Comment	BLM Response
RC	<p>The San Simone River flows directly through the Badger Den Allotment. As tentatively alluded to in the EA, this river has likely experience sever direct and indirect impacts from human disturbance over the last ~150 years including livestock grazing. Currently the river is in a heavily degraded state that barely supports habitat for fish and avian species of special conservation concern. However, with proper management, improved riparian vegetation and increased surface water conditions can be achieved that would do more to support threatened and endangered species in the watershed.</p> <p>The BLM should consider an alternative that excludes all livestock grazing within the San Simone river floodplain. A library of research has documented the response of riparian plant communities to the removal of livestock disturbance. I note none of this research is cited in the Badger Den EA. Please review applicable research regarding livestock impacts to riparian and aquatic communities such as the papers I list below and consider implementing best management practices by restricting all livestock access to the San Simone River and primary tributaries. The BLM should further acknowledge removal of grazing from these floodplains will allow the area the potential to develop into suitable habitat for species like Yellow-</p>	<p>The EA describes the river in Section 1.1 as only containing water after moderate rain events. The U.S. Geological Survey has classified the river as intermittent in the National Hydrography Dataset (NHD). The Land Health Evaluation (LHE) summarizes in Section 7.4.2 that current conditions can be attributed to historic overgrazing, extended drought, channelization of the San Simon River, upstream dam and dike development, railroad and road development, and other factors. It was determined the LHE that current livestock grazing is not a contributing factor for Reaches 2 and 3 not meeting Standard 2 (<i>See</i> LHE Section 7.4.2).</p> <p>Section 2.3 of the EA includes an alternative to exclude livestock year-round from the river channel pastures, which is similar in scope to year-round exclusion from the San Simon floodplain. This alternative was eliminated from detailed analysis due to the present conditions of the allotment, as described and analyzed in the LHE, not warranting the analysis of this alternative (<i>See</i> EA Section 2.3). Restricting use in riparian areas during the growing period was discussed in the LHE, and in Section 1.2 (Land Health Evaluation) of the EA as a recommended management action. This was carried forward and incorporated into the Proposed Action as a Term and Condition of the permit (EA p.9).</p> <p>Impacts to fish were excluded from analysis, as described in Section 1.6.1 of the EA as an issue identified but eliminated</p>

Commentor/ Section	Comment	BLM Response
	<p>billed Cuckoo, Desert Pupfish, and Southwestern Willow Flycatcher. Failure to do so means you are contributing to a continued degradation of capable suitable habitat that cumulative jeopardizes the species in the region.</p>	<p>from detailed analysis due to the exclusion of Sands Draw from grazing, and the absence of riparian areas suitable for hosting proper habitat for fisheries (EA Sec. 3.4.1 Affected Environment).</p> <p>Impacts to wildlife, including T&E and BLM Sensitive species, were analyzed in Section 3.4 of the EA and rationales for the species considered in the analysis were given in Appendix C of the EA.</p> <p>The team reviewed the research submitted in this comment. Items were not considered for use in this EA because the research conducted could not be compared to this project's affected environment or were not needed to describe impacts.</p>
Anonymous	<p>The Badger Den EA fails to recognize that Southwestern Willow Flycatcher breed within the project area and fails to appropriately analyze potential impacts to the species. Southwestern Willow Flycatcher are known to utilize habitat along Sands Draw. I have personally detected territorial males during the spring in 2016, 2018, and 2019 at two tank locations in this draw, the first tank at 32.501199, -109.339875 and the second tank at 32.493237, -109.384239. I provided this observational data to Wildlife Biologist Mark McCabe in multiple emails though clearly this information is not being used in project analysis as it has not been used in this EA. Further suitable habitat for Southwestern Willow Flycatcher occurs along the San Simon River, specifically just upstream of were</p>	<p>The Badger Den Allotment was considered in the 2012 Gila District Grazing BO; however, due to the conclusion by the BLM during preparation of the Biological Assessment (BA) that the Southwest willow flycatcher (SWFL) was not present within the allotment, nor was there any critical, potential, or occupied habitat, the Biological Opinion's (BO) stipulations for SWFL do not apply to the Badger Den Allotment. This analysis was conducted using vetted government data from Arizona Game and Fish (AZGFD) and the U.S. Fish and Wildlife Service (USFWS).</p> <p>Mark McCabe (now the Natural Resource Specialist for the BLM Tucson Field Office) was contacted regarding the emails and data referenced in this comment. After reviewing his email inbox by searching key words related to this comment and subject (i.e., San Simon Valley, Badger Den,</p>

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	<p>Hackel Road crosses the San Simon River and downstream of the San Simon River/Sands Draw junction. There are several other observations of Willow Flycatcher in eBird from within the project area.</p> <p>The Safford BLM references the "Biological Opinion on the Gila District Livestock Grazing Program" (#22410-2006-F-0414, 2012) in the Badger Den EA. However, during this consultation effort, the Safford BLM does not accurately assess habitat for the Southwestern Willow Flycatcher along the San Simon River and within the Badger Den Allotment. The Safford BLM also does not include observational data of the species within the Badger Den Allotment that is available to or has been provided to the agency within the consultation. This consultation document additionally does stipulate that the Safford BLM should conduct monitoring for listed species including the Southwestern Willow Flycatcher. The Safford BLM fails to comply with this consultation as it does not survey for or monitor habitat of Southwestern Willow Flycatcher.</p> <p>I would ask that the Safford BLM 1) Utilize the best available occurrence data and acknowledge that Southwestern Willow Flycatcher are known to be present within the Badger Den Allotment along Sands Draw and likely to be present along the San Simon River; 2) Include appropriate analysis of impacts from livestock grazing to the species within the</p>	<p>Southwest willow flycatcher, etc.), Mr. McCabe found no record of the conversations or data. He also has no recollection of hearing about any observations of SWFL in the San Simon River area. A contact name for whoever submitted this information would make finding these records more feasible; however, it does not guarantee that the data would be used in this analysis without verification and vetting of the data and observer.</p> <p>The website eBird.org is not a standardized site for Federal and State agencies to use when evaluating the presence of Federally listed species for proposed actions. This is a public-scientist based resource that uses vetted biologists to verify submitted data; however, the submission of Federally listed species occurrences is classified information due to the sensitivity of that information. Surveying for Federally listed species requires standardized training by the USFWS and AZGFD, as well as the request and approval from both agencies for a scientific collection permit. Any data collected regarding Federally listed species by qualified and permitted individuals is required to be submitted to the USFWS and AZGFD. That data is then distributed appropriately to land management agencies, such as the BLM, for classified use to inform analyses and decisions for proposed actions. If data regarding the presence of SWFL within the Badger Den Allotment was collected and submitted appropriately and according to the scientific collection permit requirements, the BLM Safford Field Office (SFO) would see that data reflect in the databases regularly used for NEPA analyses.</p>

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	<p>Badger Den EA; 3) Complete appropriate consultation with the U.S. Fish and Wildlife Service for project impacts to the species within the Badger Den Allotment; 4) In compliance with stipulations in your current consultation for grazing activities, conduct surveys for Southwestern Willow Flycatcher within the project area and complete monitoring of suitable habitat for the species.</p> <p>As stated before, I did provide occurrence data for Southwestern Willow Flycatcher observations to Mark McCabe on several occasions and have emails back from him confirming he received the information. I will state my intent to object to a signed Finding of No Significant Impact if this relevant species occurrence data I provided is not at least acknowledged within the Badger Den EA.</p>	<p>The EA did not use eBird data specifically; however, the BLM used other sources such as the AZGFD environmental review tool and the USFWS IPaC to identify Federally listed species for the project area. The species in question was not considered in the analysis due to neither agencies reporting the area as providing potential, suitable, occupied, or critical habitat, nor were there recorded observations of the species from either agency. Appendix C Federally Listed, BLM Sensitive and General Wildlife Species discloses the BLM effects determination for listed species that have potential to occur in the area, as required by BLM policy and consultation requirements for meeting Section 7 of the Endangered Species Act. The BLM is not required to seek concurrence for species it determines the proposed action will have no effect.</p> <p>Spatial data provided to the SFO by AZGFD in 2020 does not show any suitable or potential habitat for SWFL along the San Simon River, nor is there any designated critical habitat along the San Simon. Habitat suitability was assessed by the ID Team during site visits for PFC and determined to be low quality based on the current habitat description in the southwestern willow flycatcher survey protocol (Sogge et al. 2010). Riparian habitat is limited on the Badger Den Allotment and primarily occurs within existing enclosures, which would not be subjected to grazing. <i>See</i> section 3.4.3 of the EA for analysis of impacts.</p>
JB	<p>The EA says that the BLM's Badger Den allotment includes 61 acres of state land. But according to the allotment map on page 27, and State Land Department records, there is no state land within the boundaries of the allotment.</p>	<p>The western boundary of the Badger Den Allotment includes a sliver of State Land. As mentioned in the EA, the State Land only comprises 61 acres, therefore, the allotment boundary line covers the portion of state land inside of the</p>

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		allotment. <i>See</i> EA Exhibit A. The maps showing pastures and improvements for the EA display the sliver of State Land in the southwest corner of the allotment in the HX pasture. The scale of the maps and weight of the boundary lines on the maps influence the perception of how much land is there as compared to the rest of the allotment.
JB	<p>1. Is the proposed allowable forage utilization rate the cumulative annual rate?</p> <p>2. Why are you proposing to implement a maximum allowable forage utilization rate that was established 43 years ago and has since been proven to be obsolete?</p> <p>3. Why didn't you analyze a cool season only grazing scheme for the entire allotment?</p> <p>4. Why do you think it's appropriate to authorize grazing in the desert during a drought?</p> <p>5. What is the estimated cost of repairing the allotment's range improvements, and where will the money likely come from?</p> <p>6. Does the applicant meet the legal qualifications required to obtain a grazing permit for the allotment?</p>	<p>1. Allowable forage utilization is based on current year's growth. Wording has been added in Section 3.1.3 of the EA to show that utilization is based on annual growth. The BLM permitted grazing year begins in March which is the same time that the critical growing season begins for the San Simon channel pasture deferment.</p> <p>2. Impacts associated with allowable usage rates are addressed in the EA under Section 3.1.3 of the EA and state that grazing capacities established in the Upper Gila San Simon ES (UG) were determined by range surveys and ocular estimates to average of 40 percent utilization by wildlife and livestock to keep grasses at healthy viable populations and maintain plant type compositions. Based on sequential sampling, this average utilization rate is still applicable and acceptable as referenced in the "Utilization Studies and Residual Movements" technical report from 1996 for the BLM H-4180-1 Rangeland Health Standards Handbook. Maximum use is not allowed, only light to moderate use rates resulting in vegetation communities being maintained at healthy populations would be permitted. Compliance inspections would be conducted periodically to ensure appropriate utilization is being met.</p> <p>3. A cool season grazing alternative has been added to the EA in Section 2.3, Alternatives Considered but Eliminated from Detailed Analysis. Cool season grazing (November</p>

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		<p>through February) is included for river channel pastures in the Proposed Action for protection of the San Simon River channel. This ensures the LHE recommended actions listed in Section 1.2 of the EA are being considered.</p> <p>4. Conditions of drought were analyzed in the Badger Den LHE. The LHE describes ecological sites as exhibiting natural fluctuation with fire/drought to maintain reference state conditions. The Safford District RMP incorporates the Upper Gila San Simon ES (UG), which analyzed grazing capacity for allotments and incorporates varying vegetation production due to fluctuating rainfall amounts. The Safford Drought Policy follows the UG decision document which states utilization limits clearly during drought.</p> <p>5. This is outside the scope of this EA because the inventory and costs associated with livestock infrastructure does not affect the BLM's consideration of the permit issuance as stated in the Purpose and Need.</p> <p>6. Application for preference was submitted and reviewed as mandated in 43 CFR 4110.1. The applicant is qualified, and the application was approved and is pending implementation in accordance with NEPA and associated decision documents.</p>
LK - 2.1	<p>The requirement that all livestock be indefinitely excluded from Ryan Detention Dam should be removed. The explanation given for the decision to exclude livestock from Ryan Detention Dam is for protection of the physical structure itself. This is not a reasonable basis for exclusion. Earthen dams, commonly known as dirt tanks, are widely used expressly for livestock use. The Ryan dam is dramatically more substantial than common dirt</p>	<p>Ryan Detention Dam was built in 1967. In 1981, a decision was signed (EA #AZ-040-1-30) for construction of the fence and exclusion of livestock to facilitate vegetative rehabilitation and commensurate increase in siltation of the channel behind the dam. No end date for livestock exclusion was included in the analysis of that EA. Because Ryan Detention Dam is dramatically more substantial than common dirt tanks, the need for it to continue functioning to detain silt and maintain stability is important. The</p>

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	tanks. The dam retains no water and livestock activity on and around the dam will be minimal. Removing Ryan Dam from Other Terms and Conditions will necessarily require removing other references to exclusion from the location as well.	information in the 1981 EA is still applicable and the Term and Condition regarding the Ryan Detention Dam Exclusion area will remain in effect.. Other references to the exclusion area throughout the document will also remain.
LK – 3.1.2.1	“Grasses would be undamaged by grazing” should read “Grasses would be unimpacted by grazing”. Current wording implies grazing is inherently harmful to grasses.	Section 3.1.2.1 was reviewed and revised to better clarify that grasses would not be grazed by livestock under the No Action and No Grazing Alternative.
LK - 3.1.2.2	Groundwater pumping further up the San Simon valley is increasing and lowering the water table in those areas. This very likely also affects conditions and should be recognized.	<p>A scientific literature review was conducted on this topic. There is a lack of scientific, peer-reviewed research specific to the San Simon Valley and the effects of groundwater pumping to determine potential effects to the water table in this area.</p> <p>Article 1: Knechtel, M.M and Lohr, E.W. (1938). Geology and Ground-water Resources of the Valley of Gila River and San Simon Creek, Graham County, Arizona. U.S. Department of the Interior, U.S. Geological Survey. Washington, DC.</p> <p>This paper discusses how water diversions starting in the late 1800s by settlers, along with grazing, is what has likely caused the decades of erosion and loss of grasslands due to increased run-off. The argument is that the diversion of surface flows combined with grazing and other land uses is what has caused the decades of degradation to the soils, vegetation, and water resources.</p> <p>Article 2: Richey, A. S., Thomas, B. F., Lo, M.-H., Reager, J. T., Famiglietti, J. S., Voss, K., Swenson, S., and Rodell,</p>

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		<p>M. (2015). Quantifying renewable groundwater stress with GRACE. <i>Water Resource. Res.</i>, 51, 5217–5238, doi:10.1002/2015WR017349.</p> <p>“Only recently have stress studies evolved from implicitly including groundwater as base flow in modeled runoff, to explicitly quantifying stress with groundwater withdrawal statistics, modeled recharge, and nonrenewable groundwater use from compiled withdrawal statistics. These recent advances in groundwater stress analysis have improved our global understanding of groundwater availability to meet current water demands. However, groundwater withdrawal statistics are often outdated and measured by inconsistent methods between geopolitical boundaries” (p. 5218).</p> <p>Therefore, this issue of groundwater pumping is not analyzed in the EA because research is still remote and speculative.</p>
LK - 3.1.2.2	To eliminate any potential confusion about which locations are considered to be riparian, the sentence beginning “Other riparian area exclosures...” should have the phrase “such as” deleted.	To better identify the specific areas referred to, wording in Section 3.1.2.2 has been changed to: “Riparian areas behind HX Dam and within the Sands Draw Exclosure...”
LK - 3.1.3.2	Delete “such as” as referenced above.	To better identify the specific areas referred to, wording in Section 3.1.3.2 has been changed to: “Riparian areas behind HX Dam and within the Sands Draw Exclosure...”
LK - 3.2.3	Livestock activity can aid in moisture absorption and vegetation establishment by loosening topsoil.	Some research suggests that intense livestock trampling for short periods followed by rest can lead to increased soil organic matter, increased germination of seeds, and increased ability of the soil to infiltrate and retain water, while other research suggests that this positive outlook may be speculative (Nordberg 2016). No information regarding
LK - 3.3.3	Livestock hoof action can also help reduce soil loss by creating indentions allowing seeds to get below the surface for germination.	

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		hoof action impacts were added to the EA because literature was inconclusive.
LK - 3.4.2	This section, beginning with “The absence of livestock grazing would result in LESS disturbance of the soil and vegetation, RESULTING in MORE available forage and cover...etc.” to the end of the paragraph is in error. The No Action alternative is a benchmark to compare impacts of other management alternatives as defined in section 2.2. Existing impacts continued into the future will remain essentially unchanged. There will be no impact.	Wording in Section 3.4.2 has been revised to show the benchmark of the No Action alternative instead of comparing it to the Proposed Action. Analysis for the No Action and No Grazing Alternative resulted in no impact.
WWP – Intro (1)	Please explain and include an explanation as to why BLM was pressured to complete this project by a certain date or time frame in light of the fact that this allotment has been vacant for nearly two decades. Was the rush to complete this project under the Trump administration? Is there political pressure to authorize this particular allotment to this particular permittee? Why are permittees given preferential treatment over the interested public?	As mandated by the Administrative Procedure Act, “within a reasonable time, each agency shall proceed to conclude a matter presented to it.” (5 U.S.C. 555(b)). This project with the LHE, EA, and associated consultation, cooperation, and coordination (CCC) is being completed through the appropriate grazing and NEPA processes to respond to the grazing application. The interested public are involved in the process through CCC and were provided the draft of the LHE, including the grazing applicant, to solicit comment.
WWP – Intro (2)	The photos of UA sites in the LHE appear to show that at least some of the areas monitored have been grazed while this allotment was supposed to be vacant. Photo identified as “Figure 24. US Site BD-8, 2014” taken in September shows grasses present while the same site photos from 2018 shows a complete absence of grasses, yet the precipitation for 2014 and 2018 are similar. Dec. 2020 LHE at 70 and 50. The same lack of grasses is shown in Figure 20 (2014) and Figure 21 (2018). Dec. 2020 LHE at 68. WWP noted with concern that the LHE site photos	<p>UA monitoring reports for 2014 and 2018 share different locations for BD-8: 2014: “12 S 0638225 UTM 3594762” 2018: “12 S 0638161 3594963”</p> <p>Monitoring data for both years are useful for comparison in the LHE. The 2018 location was used for AIM monitoring and is intended to continue to be used for AIM data collection in the future. The LHE has been corrected to describe this location difference, and the Errata Sheet for the LHE is included as an appendix to the EA.</p>

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	show very little grass, generally, and this begs the question – what are cows going to eat on the Badger Den allotment?	Pictures for sites BD-4 and BD-8 show more annual grasses growing in 2014 than in 2018. Monitoring methods record only perennial vegetation. Growth of annual vegetation varies on yearly timing, location, and duration of precipitation and not only on total yearly amount of precipitation. 2014 precipitation patterns appear to have favored annual growth more than 2018.
WWP – I.	The BLM continues to ignore, or at least minimize, the fact that the San Simon watershed is one of the most degraded watersheds in the country. WWP again strongly urges BLM continue their management of this allotment as vacant and consider retiring this allotment to allow for continued rest from livestock grazing so that these public lands may provide a refuge for wildlife and serve as potential study sites for restoration projects on historically degraded arid lands.	<p>The Badger Den Permit Issuance EA considers multiple alternatives including the Proposed Action and the No Action and No Grazing Alternatives.</p> <p>Prior to the Taylor Grazing Act there was no regulation of grazing use on public lands. Livestock numbers were often greater than landscapes could support. The San Simon Valley where the Badger Den Allotment is located included dense populations of livestock which, when combined with other damaging factors described in the LHE resulted in extensive soil loss and landscape damages. The Taylor Grazing Act reduced livestock numbers to manageable levels. Subsequent land management projects were conducted such as the construction of dams and dikes for water control and sediment capture. Many structures throughout the west proved ineffective and/or were abandoned. Many of these non-functional structures continue to alter surface runoff patterns and can greatly exacerbate erosion (Nichols, et al 2020). The major detention dams on or near the Badger Den Allotment such as Sands Draw, HX, and Fan Detention Dams are maintained to avoid land degradation, altered vegetation, and loss of cultural resources that are caused by altered runoff patterns and enhanced erosion. The LHE for the Badger Den Allotment shows Land Health Standards are being achieved for Standards 1 and 3 while Riparian-Wetland Sites were not meeting Standard 2. Factors that contributed to existing condition include historic overgrazing,</p>

Commentor/ Section	Comment	BLM Response
		<p>extended drought, channelization of the San Simon River, upstream dam and dike development, railroad and road development, and other factors.</p> <p>After the Taylor Grazing Act regulated livestock numbers, subsequent carrying capacity analysis reduced livestock numbers further to appropriate levels through the Safford District RMP and associated Land Use Plans. This and other adjustments to permitted grazing use are documented in the LHE and Permit Issuance EA. At the time of the previously cancelled permit (1993), livestock numbers were considered appropriate to the allotment. Removal of the grazing permit in 1993 was not due to land health concerns. Over 20 years of rest on the allotment, with livestock trespass immediately following the permit cancellation with the previous permittee and a minor amount of unauthorized livestock use since that time, has not resulted in further damage to land health, and has not repaired land health to pre-civilization condition. The LHE instead states that “current land health and vegetative conditions represent what the allotment is currently capable of achieving” and states that “Livestock grazing is an appropriate use of the San Simon River when managed properly to allow for continued bank stability, channel aggradation, and recruitment or establishment of desirable riparian/wetland species.” This recommendation has been implemented in the Badger Den Permit Issuance EA.</p> <p>Several permanent exclosures are also incorporated in the EA to provide for wildlife habitat and for protection of sensitive resources.</p>
WWP – II.A. (1)	Impacts to springs and other water resources/exclusion areas were not analyzed because	Unauthorized livestock use within the exclosures is not within the scope of analysis of the proposed action. Existing

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	<p>these areas are “fenced to prevent livestock grazing.” This required BLM to ignore the evidence of trespass livestock in these areas, in violation of NEPA and common sense. Dec. 2020 EA at 7- 8. The BLM should have analyzed these areas and determined whether or not they were meeting the Land Health Standards and whether livestock were a cause of the failure to meet standards.</p>	<p>resource conditions and authorized use were considered by the interdisciplinary team in evaluating potential impacts of the proposed action during the scoping process. These areas are excluded from livestock grazing and this stipulation would be added to the terms and conditions. In Section 7.2 of the LHE, the IDT found that “Because livestock grazing has not been permitted on the allotment since 1993 and the allotment has been predominantly underutilized and/or vacant since that time, current livestock grazing is not a contributing factor in not meeting Standard 2. Livestock grazing is an appropriate use of the San Simon River when managed properly to allow for continued bank stability, channel aggradation, and recruitment or establishment of desirable riparian/wetland species.”</p>
WWP – II.A. (2)	<p>Impacts to cultural resources were not analyzed because a 2009 inventory of resources did not show impacts to areas eligible for inclusion in the National Register of Historic Places. The BLM also cites information regarding 15 areas where livestock congregated in the past (again, in 2009) as the rationale for refusing to conduct an appropriate analysis of impacts expected from the currently proposed grazing permit. This is inappropriate. BLM should have and must now disclose and discuss the impacts of the proposed livestock grazing authorization on cultural resources now known to BLM. Dec. 2020 EA at 7.</p>	<p>The BLM conducted a Class I survey in February 2021. The determination of no impact remains the same. This information has been updated in Section 1.6.1 of the EA.</p> <p>If a permit is issued, the standard terms and conditions concerning cultural resources would be adhered to by the permittee, which specifically states, “If in connection with operations under this authorization, any human remains, funerary objects, sacred objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (P.L. 101-601; 104 Stat. 3048; 25 USC 3001) are discovered, the permittee/lessee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Authorized Officer of the discovery. The permittee/lessee shall continue to protect the immediate area of the discovery until notified by the Program Manager that operations may resume.”</p>

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WWP – II.A. (3)	<p>While we appreciate the BLM including an accurate description of the repeated, willful trespass by the previous permittee. Dec. 2020 EA at 66.</p> <p>Unfortunately, the BLM refused to analyze the impacts of trespass livestock grazing because this use is not authorized. Dec. 2020 EA at 8. However, this use is ongoing, well known and well documented, and does have impacts on natural resources within the allotment. The BLM has not disclosed how trespass livestock have impacted the resources of the allotment in any way, other than to disclose that they occur. This is a cumulative effect that should have been fully analyzed and disclosed and the refusal to do so is a violation of NEPA.</p>	<p>The LHE provided analysis of the allotment’s current condition. The current condition includes impacts caused by all past actions including those described in Section 3 of the LHE such as past authorized use, past trespass, and more recent incidental unauthorized livestock use. Section 3 also states that no resource damage was observed or documented by incidental unauthorized livestock use on the Badger Den Allotment. Section 7 of the LHE reported whether current condition of the allotment was meeting land health standards.</p> <p>In the EA, the No Action and No Grazing Alternative (Section 2.2) serves as a baseline to analyze the current condition. The Proposed Action does not disclose impacts caused by trespass livestock because these are unauthorized uses and therefore outside of the scope of this EA. Impacts associated with unauthorized livestock was an issue considered but eliminated from detailed analysis in Section 1.6.1 of the EA, which states that, livestock use is either authorized through the issuance of a grazing permit, or it is unauthorized, and the BLM will act according to regulation 43 CFR 4150.</p>
WWP – II.A. (4)	<p>Another NEPA violation stems from the BLM’s reliance on grazing capacity determination via ocular reconnaissance in 1978. Dec. 2020 EA at 12. WWP can find no recent determination of grazing capacity in the EA or LHE. ... Schmutz indicates that in dry years the method is designed for use after normal seasonal growth and does not take into account decades of drought. There are no current photos of key areas in the LHE or EA for the Badger Den</p>	<p>According to the EA “The grazing capacity analysis for the Badger Den Allotment was determined in 1978 as a part of the UG and was incorporated into the grazing permit in 1981 through a grazing decision. The UG was incorporated into the Safford District RMP in 1991. Grazing capacity analyses in the UG were determined by the ocular reconnaissance range survey method and ocular estimates as described in the UG and were established to allow for an average of 40 percent utilization of annual growth of key perennial grass</p>

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	<p>allotment showing much in terms of grasses (with the exception of one photo – Figure 24 in the LHE), much less utilization, indicating that BLM has not taken the hard look necessary to make a Finding of No Significant Impact for this authorization. Additionally, BLM cannot rely upon this outdated method for and determination of carrying capacity.</p>	<p>species by wildlife and livestock to keep grasses at healthy viable populations and maintain plant type compositions.”</p> <p>The EA further states, “Properly managed livestock grazing has been considered in the LHE as an acceptable use, therefore, full preexisting permitted use with restrictions added for resource protection as part of the Proposed Action is an appropriate baseline from which to establish livestock use. If use rates exceed allowable use and will result in resource damages, then standard compliance inspections allow for potential resource damage to be noted and acted upon in accordance with 43 CFR 4110.3-3.”</p> <p>Current drought conditions are accounted for through the Safford Drought Policy. The Safford Drought Policy follows the UG decision document which states utilization limits clearly.</p>
WWP – II.A. (5)	<p>In this Badger Den EA the BLM acknowledges that livestock grazing can reduce fine fuels such as grasses, reducing the incidence of wildfire, which can further shrub encroachment into grasslands. Yet, the BLM still intends to return livestock grazing to an area that is clearly in desperate need of additional rest and restoration.</p>	<p>Appendix B includes information for Fire Regimes, “The Proposed Action is not expected to impact fire regimes. See Section 3.1 for more information.” Section 3.1.3 has been adapted to include that natural disturbances such as occasional fire or drought reduce shrub composition and allow grasses to reestablish. Also, that wildfire occurrence may be reduced as a result of grazing and fewer fine fuels to burn. The EA now states that the majority of the Badger Den Allotment is too low in elevation to carry fire except in years of exceptional ephemeral growth and the proposed number of livestock would not impact potential for fire in those conditions. The LHE for the Badger Den Allotment shows Land Health Standards are being achieved for Standards 1 and 3 while Riparian-Wetland Sites were not meeting</p>

Commentor/ Section	Comment	BLM Response
		Standard 2. Factors that contributed to existing condition include historic overgrazing, extended drought, channelization of the San Simon River, upstream dam and dike development, railroad and road development, and other factors.
WWP – II.A. (6)	For the No Action alternative the BLM states only that there would be negligible impacts to water quality and bank stability from wildlife use, but does not quantify or discuss how exclusion of livestock would continue to improve bank stability and water quality. Dec. 2020 EA at 16. This information should have been included. The BLM further compounds this error of analysis by stating that the Proposed Action, which excludes (in theory) livestock from certain riparian corridors between March and October would “significantly reduce” impacts of livestock grazing on water quality and bank stability. So, just to clarify what BLM would like the public to believe, prohibiting livestock grazing entirely would have a less significant positive impact on water quality and bank stability than allowing livestock grazing for four months of the year.	Section 3.2.3 of the EA has been revised to provide clarity for the intended meaning and includes that with the proposed action of deferring livestock from the channel pastures from March through October, impacts to water quality and bank stability would be significantly reduced compared to year-long use in these areas.
WWP – II.A. (7)	Further, BLM does not appear to have conducted the T Factor analysis for soil erosion for the No Action alternative, just the Proposed Action. Dec. 2020 EA at 16. The public therefore has no way to compare the two alternatives in terms of soil erosion.	Section 3.3 of the EA addresses the impacts to soil erodibility utilizing an analysis of the K and T factors. Adjustments have been made to the EA for clarity. The T factor is presented in the affected environment section to define the baseline conditions of the Badger Den Allotment. This information is not used to show an increase or decrease in soil loss and erodibility, but rather to provide a baseline for determining impacts from the Proposed Action.

Commentor/ Section	Comment	BLM Response
		<p>The EA discusses the erodibility of soils on the Badger Den Allotment, which are expected to be negligible based on the soil types present and the analysis of the K and T factors.</p> <p>Additionally, for the water quality in Section 3.2, the EA discusses that due to stabilizing vegetation on the banks, and the proposed deferred grazing, an increase in sediment is not anticipated to occur in the San Simon River.</p>
WWP – II.A. (8)	<p>The question neither asked nor answered by BLM in this EA is <i>how much soil has already been lost to erosion on this allotment?</i> Has the productivity already been impaired? It is also confusing that the table showing the T Factor indicates that zero percent (0%) of the allotment has a T Factor of 4. Apparently, the allotment the majority of the soils have a T Factor of 5, and it is unclear why the BLM did not just state this clearly.</p>	<p>In the LHE and the EA, the BLM describes the current condition of the resources on the Badger Den Allotment, which considers the impacts from past uses. The No Action and No Grazing Alternatives are the baseline to compare the impacts of the Proposed Action. How much soil has been lost to erosion is not necessary for analysis in the EA. However, it is considered indirectly through analysis of the T and K Factors in section 3.3.1 of the EA which show that the majority of the Badger Den Allotment is less susceptible to sheet and rill erosion and has a high tolerance of soil loss (could lose up to five tons of soil per acre per year before their long-term productivity would be reduced) before productivity is impaired. Section 3.3.4 addresses how the San Simon watershed has been known to produce high sediment yields, but with the use of sediment barriers and detention dams, sediment has begun filling in areas that were once gullied or highly eroded. Section 3.2.3 of the EA also mentions aggradation of the San Simon.</p> <p>In response to a previous comment from WWP (III.C.10, Appendix D), The BLM state that the Arizona Department of Environmental Quality (the agency that monitors streams</p>

Commentor/ Section	Comment	BLM Response
		<p>and water bodies for impairment) has not identified any stretches of the Gila River directly downstream of the confluence with the San Simon River as being impaired. The BLM's LHE showed that within the Badger Den Allotment, the San Simon River was not meeting standard 2. Reasons identified in section 7 of the LHE include historic overgrazing, extended drought, channelization of the San Simon River, upstream dam and dike development, railroad and road development, and other factors.</p> <p>Section 1.2 of the EA (p.2-3) states, "Due to the vacancy of the allotment, current livestock grazing is not contributing toward not meeting standards. Lands not meeting standards are a result of a number of factors including but not limited to historic overgrazing prior to the establishment of the Taylor Grazing Act and soil loss that resulted from that use, extended drought broken by intense thunderstorms, railroad and road development and subsequent effects on ecological function of hydrology, channel excavation in 1883 from the Gila River up the San Simon Valley to confine flow, and environmental effects from an earthquake in 1887 (Humphreys, 2015; USDI BOR, 2000)".</p> <p>The LHE was prepared and utilized the Interpreting Indicators of Rangeland Health protocol (TR-1734-6) to evaluate the biotic conditions on the allotment, which indicate productivity on the allotment. The LHE concluded that the allotment is capable of maintaining a productive and diverse native plant community, which indicates that the soils on the allotment are retaining their integrity regarding texture, organic matter content, size and stability of</p>

Commentor/ Section	Comment	BLM Response
		structural aggregates in the exposed layers, permeability of the subsoil, and an appropriate depth to a slowly permeable layer.
WWP – II.A. (9)	Again, the acres and specific area are not disclosed in the Humphrey’s report, but BLM should have that information available and should have conducted the analysis (done the math) needed to determine whether the San Simon watershed has already been degraded to the point of impairing productivity.	See the response to the previous question (WWP – II.A. (8)) regarding current condition of the San Simon Watershed within the Badger Den Allotment. In the LHE and the EA, the BLM describes the current condition of the resources on the Badger Den Allotment, which considers the impacts from past uses. An analysis of the functionality of the of the San Simon channel was conducted in the LHE for Standard 2. Other pertinent watershed issues were evaluated in the LHE and/or are identified and addressed in the EA such as analysis of the T and K factor in Sections 3.2 and 3.3 of the EA and addressed in the comment response for WWP – II.A. (7) and (8) above. For the purpose of this EA, the project area is defined as the Badger Den Allotment, not the San Simon watershed. The Humphrey’s report was added as a resource to provide context to the historical complexities of the project area and is not intended to speak to analysis or the degradation of the watershed as a whole.
WWP – II.A. (10)	The BLM indicates that the No Action alternative would benefit wildlife because there would be less disturbance of soils and vegetation, resulting in more cover throughout the year. Dec. 2020 EA at 22. The BLM’s recognition that the No Action alternative would have beneficial impacts for wildlife while ignoring those same beneficial impacts on soils is arbitrary and capricious, and is likely to lead to an abuse of discretion if the BLM proceeds to a Finding of No Significant Impact.	Impacts from the No Action and No Grazing Alternative were clarified in the EA (Section 3.4.2) for consistency with the other issue statements.

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WWP – II.A. (11)	BLM also states that livestock grazing authorized at the historic levels would have negligible impacts on wildlife and vegetation, despite its earlier acknowledgement that historic grazing has significantly harmed the natural resources found in the allotment. Returning livestock to an area that is only just beginning to recover from harmful livestock grazing after decades of non-use by livestock permittees is certain to have an impact on the wildlife that have returned to this area.	<p>Factors that contributed to existing conditions include “historic” overgrazing. When referring to “historic” overgrazing, we are referring to grazing use prior to the 1934 Taylor Grazing Act as identified in the documents. The Proposed Action is to return livestock at “preexisting” permitted levels identified through RMP and UG, which were last permitted in 1993, and not returning use rates to those “historic” rates that occurred prior to the Taylor Grazing Act. Through the UG analysis, 73 AUMs are reserved for wildlife forage for the Badger Den Allotment.</p> <p>There is no wildlife data available prior to the Taylor Grazing Act to quantify impacts from historic grazing and to determine how wildlife abundance would change today if livestock were excluded. Therefore, to understand the impacts of grazing on wildlife and wildlife habitat, the BLM compares the current conditions in the No Action and No Grazing Alternatives to the Proposed Action.</p>
WWP – II.A. (12)	WWP provided a literature review and asked BLM to incorporate these references and information into the analysis for this project. After a quick review of the very short references section for the EA, we see that none of our recommended references were included. The references we provided were relevant, specific to the project area or vegetation and habitat types, and much more recent than the references BLM has included.	The BLM reviewed and considered articles and literature sent and included information relevant to describing the affected environment. Other materials were considered but not incorporated because they did not pertain to the scope, or the purpose and need of this analysis.
WWP – II.A. (13)	The BLM refused to adequately or accurately analyze the impacts of this project on the [Aplomado] falcon because the species is not currently present in the project area (“has a low potential to occur on the	Rationale for excluding this species from analysis was presented in Appendix C of the EA and was addressed in the LHE: “No record of the species occurring within allotment boundary.

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	<p>allotment due to limited habitat suitability” Dec. 2020 EA at 37), yet the information we provided indicated that livestock grazing in and around the project area may be a cause of that absence. The BLM should have disclosed this information in the EA yet did not.</p>	<p>Habitat consists of open grassland with scattered trees, low ground cover, and elevations from 3,500 to 9,000 feet. Very limited distribution in the U.S. in Texas and New Mexico. The species’ historical range extends into southeastern Arizona; however, the species is still considered to be extirpated from Arizona with no recent records of the species. In Arizona, no documented nesting attempts have occurred since 1940 (AZGFD 2021), or since 2006 when the whole state of Arizona was included in the 10(j) area designation (50 CFR Part 17, 42298-42315). There is no designated or proposed critical habitat for this species.”</p> <p>Reported observation in 1977 west of Rodeo, New Mexico in Cochise County, Arizona. Sight records since 1940 are unsubstantiated, and the falcon is considered possibly extirpated in Arizona (per conversation with USFWS; AZGFD 2021).</p> <p>One article you provided (Truett 2002) concluded that no cause-and-effect relationship between historic changes in grazing intensity by cattle and prairie dogs, and changes in Aplomado falcon abundance can be demonstrated at this time (p. 396). This information does not change the analysis conducted regarding the Aplomado falcon.</p> <p>The second article you provided (Macias-Duarte et al. 2016) addressed the impacts of converting grasslands to croplands on Aplomado falcon reproductive success in the state of Chihuahua in northern Mexico. This article was determined not relevant for the scope and Proposed Action of this EA.</p>

Commentor/ Section	Comment	BLM Response
		<p>Research has shown that the falcon is also capable of cohabitating in and around grazing operations in Mexico and Texas, according to the USDOD and USFWS. https://www.fws.gov/endangered/esa-library/pdf/aplomado_falcon_fact_sheet.pdf</p>
WWP – II.A. (14)	<p>The BLM has failed to identify the Safford Field Office Vegetation Management Project as a reasonably foreseeable future action that must be included in the cumulative effects analysis.</p>	<p>The EA has been revised to include the project as a reasonably foreseeable future action in sections 3.1.4, 3.2.4, 3.3.4, and 3.4.4.</p>
WWP – II.A. (15)	<p>The BLM states that the long-term impacts of historic livestock grazing are ongoing and significant, and these historic impacts are the cause of the allotment failing to meet Land Health Standards. Dec. 2020 EA at 46. Yet at the same time the BLM expects the long-term impacts of the proposed livestock grazing authorization would be negligible. How can this be?</p>	<p>Prior to the Taylor Grazing Act there was no regulation of grazing use on public lands. Livestock numbers were often greater than landscapes could support. The San Simon Valley where the Badger Den Allotment is located included dense populations of livestock which, when combined with other damaging factors described in the LHE, resulted in extensive soil loss and landscape damages. The Taylor Grazing Act reduced livestock numbers to manageable levels. Subsequent land management projects were conducted such as the construction of dams and dikes for water control and sediment capture. Many structures throughout the west proved ineffective and/or were abandoned. Many of these non-functional structures continue to alter surface runoff patterns and can greatly exacerbate erosion (Nichols, et al 2020). The major detention dams on or near the Badger Den Allotment such as Sands Draw, HX, and Fan Detention Dams are maintained to avoid land degradation, altered vegetation, and loss of cultural resources that are caused by altered runoff patterns and enhanced erosion. The LHE for the Badger Den Allotment shows Land Health Standards are being achieved for Standards 1 and 3 while Riparian-Wetland Sites were not meeting Standard 2.</p>

Commentor/ Section	Comment	BLM Response
		<p>Factors that contributed to existing condition include historic overgrazing, extended drought, channelization of the San Simon River, upstream dam and dike development, railroad and road development, and other factors.</p> <p>After the Taylor Grazing Act regulated livestock numbers, subsequent carrying capacity analysis reduced livestock numbers further to appropriate levels through the Safford District RMP and associated Land Use Plans. This and other adjustments to permitted grazing use are documented in the LHE and Permit Issuance EA. At the time of the previously cancelled permit (1993), livestock numbers were considered appropriate to the allotment. Removal of the grazing permit in 1993 was not due to land health concerns. Over 20 years of rest on the allotment, with livestock trespass immediately following the permit cancellation with the previous permittee and a minor amount of unauthorized livestock use since that time, has not resulted in further damage to land health, and has not repaired land health to pre-civilization condition. The LHE instead states that “current land health and vegetative conditions represent what the allotment is currently capable of achieving” And states that “Livestock grazing is an appropriate use of the San Simon River when managed properly to allow for continued bank stability, channel aggradation, and recruitment or establishment of desirable riparian/wetland species.” This recommendation has been implemented in the Badger Den Permit Issuance EA.</p>
WWP – II.A. (16)	The Taylor Grazing Act is cited by the BLM as on rationale for authorizing livestock grazing on an allotment that is clearly damaged from past livestock grazing and currently unsuitable for livestock	See the previous response above regarding historic grazing being grazing prior to the Taylor Grazing Act (1934) before livestock grazing was managed by a federal agency. Response also describes why proposed grazing use is

Commentor/ Section	Comment	BLM Response
	<p>grazing. Dec. 2020 EA at 48. This seems to be a good time to remind BLM that the Taylor Grazing Act was necessitated by livestock damage nearly identical to what we see on the Badger Den allotment. Further, BLM's assumption that "livestock grazing is an applicable use of the lands on the Badger Den allotment if livestock grazing is managed properly" underscores BLM's intentionally turning a blind eye to the well-known, admitted, and documented inability to ensure livestock are managed properly as well as permittees inability to manage their livestock properly.</p>	<p>considered appropriate through the Land Health Evaluation as well as through impacts analysis of the EA.</p> <p>Livestock management as described in Section 1.1 Background of the EA shows how BLM management resulted in appropriate adjustments to carrying capacity, and eventual cancellation of the grazing permit which decision was made for Term and Condition violation and not for rangeland health purposes.</p>
WWP – II.A. (17)	<p>We note that the photos of the key areas show very little grass or other forage suitable for or preferred by livestock. What exactly does the BLM expect the livestock will eat on this allotment?</p>	<p>Information regarding photos at key areas is addressed in response to comment WWP – Intro (2). Additionally, photos at key areas are a very small snapshot of the overall 49,000-acre allotment within the Badger Den Allotment. The key areas are, however, a representative sample of the entire allotment. Available forage is minimal as expected in this desert ecosystem. In response to another comment in Appendix D of the EA we also state, "The Proposed Action would be to allow 152 animal units to graze the 49,000-acre allotment which allows for only 2 cattle to graze per section of land each year. It was determined to be the appropriate carrying capacity for the allotment through the Safford District RMP. This analysis was appropriate at the time of evaluation and is considered appropriate for current allotment condition when implemented with appropriate terms and conditions for proper livestock management."</p>
WWP – II.A. (18)	<p>For the stream reaches Functioning at Risk (FAR) that will continue to be available for livestock grazing under this pending decision, BLM justifies the</p>	<p>Livestock would be allowed to utilize all vegetation within the river channel pastures in the Badger Den Allotment November through February of each year, which</p>

Commentor/ Section	Comment	BLM Response
	<p>continued damage from livestock by stating the stream sections are FAR due to a lack of alkali sacaton and willow, but that Bermuda grass, salt cedar, and mesquites were stabilizing the banks. Dec. 2020 EA at 55. Which species will livestock prefer – salt cedar and mesquite, or willow and sacaton? In the absence of willow and sacaton, will livestock consume the Bermuda grass and mesquite? Will the livestock consume annuals that could also stabilize the banks? How does permitting livestock use in these reaches contribute to the recovery of the stream and promote a return to Proper Functioning Condition?</p>	<p>predominately includes upland areas, not just riparian. Section 3.1.3.2 of the EA states that 7,642 acres are within the river channel pastures and only 135 acres are considered riparian. The carrying capacity for the Badger Den Allotment is established to allow an average of 40 percent of key perennial grass species. The other pastures would also be available for grazing year-round. If use rates exceed allowable use and will result in resource damages, then standard compliance inspections allow for potential resource damage to be noted and acted upon in accordance with 43 CFR § 4110.3-3.</p> <p>Even in the absence of livestock through the No Action and No Grazing Alternative, the EA describes in section 3.1.2.2, “Improvement of riparian condition along the San Simon is predominantly dependent on timing and duration of precipitation. Lack of moisture within the San Simon River corridor, which is being held behind the detention dams constructed in the uplands of the Badger Den and surrounding allotments, is expected to continue to contribute as a causal factor as to why Standard 2 would continue to not be met along the San Simon River even in the absence of livestock grazing.”</p>
WWP – II.B. (1)	<p>The grazing EIS (1978) and RMP (1991) are extremely outdated and fail to account for the impacts of ongoing drought and regional development. The BLM proposes to return livestock to an allotment that has not had authorized use since 1993, which is a significant change. The failure of the allotment to meet rangeland health standards is a significant</p>	<p>The BLM is required to consider many authorities when evaluating a Federal action. Those elements of the human environment that are subject to the requirements specified in statutes, regulations, or executive orders must be considered in all EAs. Other resource concerns identified within this EA have been considered by BLM resource specialists to determine whether they would be potentially affected by the proposed action.</p>

Commentor/ Section	Comment	BLM Response
	concern. There is no legal way for the BLM to make a Finding of No Significant Impact on this allotment.	Allowing grazing in this allotment is not a significant change to the landscape because it is designated as open to grazing through the Safford District RMP. Not meeting Standard 2 is not considered a significant impact because the cause is not attributed to current livestock grazing. As stated in the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, “Where new activities or practices are required to assure significant progress toward meeting standards, livestock grazing use can continue contingent upon determinations from monitoring data that the implemented actions are effective in making significant progress toward meeting the standards.” These determinations can be found in the associated LHE. Please refer to 43 CF 4180.2 for the standards and guidelines for grazing administration process.
WWP – II.B. (2)	Information requested by the public during the prior CCC comment period has not been provided. Concerns raised by the public during the prior CCC comment period regarding the adequacy of the analysis and the need to use accurate assumptions remain unaddressed. The BLM has failed to adequately analyze the direct, indirect, and cumulative effects (including trespass livestock impacts).	<p>There have been multiple comment periods regarding the Badger Den Allotment. During the public scoping period for the LHE and Draft Chapters 1 & 2 of the EA, the BLM received comments from WWP and the applicant. These comments and their responses were made available in Appendix D of the completed Draft EA which was sent out for public comment 12/11/2020. Responses regarding trespass or unauthorized livestock use delivered in Appendix D of the EA are still applicable.</p> <p>Section 1.6.1 <i>Issues Identified but Eliminated from Detailed Analysis</i> includes, “The BLM recognizes that unauthorized livestock use has occurred on the Badger Den Allotment, and the effects of this use has been documented in the associated LHE. However, unauthorized livestock use is not</p>

Commentor/ Section	Comment	BLM Response
		a part of the Proposed or No Action Alternatives, and therefore is not analyzed in this EA. Livestock use is either authorized through the issuance of a grazing permit, or it is unauthorized, and the BLM will act according to regulation 43 CFR 4150.”
WWP – II.B. (3)	The BLM has apparently decided to use livestock grazing as a tool to manage vegetation as part of this permit authorization.	The multiple-use and sustained yield mission of the BLM requires consideration for many uses. The BLM website states, “Congress tasked the BLM with a mandate of managing public lands for a variety of uses such as energy development, livestock grazing, recreation, and timber harvesting while ensuring natural, cultural, and historic resources are maintained for present and future use.” (https://www.blm.gov/about/our-mission). Proper livestock grazing is defined and managed through the Safford District RMP and the associated LHE and ESDs as an acceptable use of lands.
WWP – III. (1)	It is unclear why the BLM makes much ado about the adjacent permittees having to maintain their allotment fences “without any assistance from the Badger Den permittee” under the no action alternative. Dec. 2020 EA at 12. Is this a hardship the adjacent permittees cannot bear? Is this true despite the many cooperative agreements, grants, and help the permittees receive from BLM and other government agencies to maintain these fences?	Boundary fences are typically maintained by multiple operators. When there is no neighboring operator to assist with fence maintenance, then the one operator may be fully responsible for maintenance depending on the cooperative agreement or range improvement permit associated with each fence. Upon issuance of a grazing permit for the Badger Den Allotment, existing agreements would be used to determine fence maintenance responsibility.
WWP – III. (2)	Why is Badger Den Well “in the process of being repaired” prior to the determination by BLM to authorize livestock grazing on the allotment? Dec. 2020 EA at 55. This would appear to be an inappropriate pre-decisional action.	The response to this concern in Appendix D of the EA is still applicable, “Badger Den Well is in process of being repaired. For purposes of this EA, impacts of fully permitted use is being considered. If Badger Den well or other base waters are in disrepair, then livestock numbers will be affected as described in the EA (EA Section 3.1.3).” The

Commentor/ Section	Comment	BLM Response
		BLM will regulate base water pursuant to 43 CFR 4110.1 and 4110.2-1. Regardless of the outcome of this EA, Badger Den Well would be repaired by the BLM to provide a reliable base water for potential future livestock use, as well as to provide water for wildlife in the area.
WWP – III. (3)	The BLM’s failure to analyze the impacts of the implementation of any new infrastructure is a violation of NEPA and an abdication of BLM’s responsibility to fully analyze and disclose the impacts of the proposed action. Dec. 2020 EA at 56. The BLM also refused to consider or analyze the impacts of improving currently ineffective exclosures, which WWP has provided evidence of, yet relies upon an assumption that the resources within these ineffective exclosures are protected, which they are not. The BLM should have taken the requisite “hard look” at the on-the-ground impacts of this decision and has stubbornly refused, again.	No new infrastructure will be constructed as a part of this EA. Future actions will align with 43 CFR 4120.3-1 Conditions for range improvements and 43 CFR 4120.3-2 Cooperative range improvement agreements.
WWP – III. (4)	Additionally, please explain why and where wildlife friendly fencing would not be possible. Dec. 2020EA at 13.	This is outside of the scope of this EA because no fences are being constructed at this time. All BLM fence work must comply with the BLM Fencing Handbook H-1741-1. If and when new fences are constructed, a separate NEPA analysis will be conducted. Existing fences will be maintained, and the BLM strives to make each fence line wildlife-friendly.
WWP – IV.	The BLM has failed to adequately respond to our concerns regarding base water. The “base water” for this allotment is apparently non-functioning. Please disclose whether and/or when this well was repaired.	The status has not changed since the last response to this question. The response to this concern in Appendix D of the EA is still applicable, “Badger Den Well is in process of being repaired. For purposes of this EA, impacts of fully permitted use is being considered. If Badger Den well or other base waters are in disrepair, then livestock numbers will be reduced as described in the EA (EA Section 3.1.3).”

Commentor/ Section	Comment	BLM Response
		The BLM will regulate base water pursuant to 43 CFR 4110.1 and 4110.2-1. Regardless of the outcome of this EA, Badger Den Well would be repaired by the BLM to provide a reliable base water for potential future livestock use, as well as to provide water for wildlife in the area.
WWP – V. (1)	To determine whether the areas known as the HX Detention Dam and Sands Draw exclosures were “productive and diverse” the BLM did nothing more than take a look, basing its determination on “ocular visits.” Dec. 2020 EA at 11. This “drive by” approach to determining the land health of these important areas is inadequate.	The EA identified these areas in 3.1.1.2 <i>Riparian</i> and states that these areas are excluded from livestock grazing and are therefore not included in Standard 2 of the LHE. Although monitoring was not warranted for Standard 2, ocular observations regarding HX and Sands Draw showed that these exclosures showed productive and diverse riparian-wetland plant communities, as mentioned in the EA. Unauthorized livestock use within these exclosures is not within the scope of analysis of the proposed action, therefore additional monitoring was not warranted. Existing resource conditions and authorized use were considered by the interdisciplinary team in evaluating potential impacts of the proposed action during the scoping process.
WWP – V (2)	The portion of the allotment in and adjacent to the San Simon River is not meeting Standard 2, due at least in part to livestock grazing. Dec. 2020 EA at 14. BLM must therefore prohibit all livestock grazing in the San Simon River and adjacent riparian area. To do otherwise is a violation of the BLM’s own guidelines, the RMP, and FLMPA. The BLM cannot rely upon the excuse that riparian vegetation is dependent on precipitation and that is one factor impacting the failure to meet standards to justify allowing livestock grazing in this area, especially because BLM is well aware that NOAA has predicted	See response to WWP-II. A. (18) regarding riparian impacts analysis of the EA. See also response to WWP-II. A. (4) regarding proper utilization during drought. Not meeting Standard 2 is not considered a significant impact, per the LHE it was determined that Standard 2 was not being met and that the cause is not attributed to current livestock grazing and authorizing livestock grazing has been determined to not hinder the allotment from meeting standards. As stated in the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, the

Commentor/ Section	Comment	BLM Response
	an incredibly dry season ahead and all of the southwest is in a long-term, ongoing drought.	authorized officer will review activities which identify terms and conditions for management of public lands. The review will be interdisciplinary and conducted under existing rules which provide for cooperation, coordination, and consultation with affected individuals, federal, state, and local agencies, tribal governments, private landowners, and interested publics. This review will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the significant progress determination. Significance will be determined on a case by case basis, considering site potential, site condition, weather and financial commitment. Livestock grazing will continue where significant progress toward meeting standards is being made. Where new activities or practices are required to assure significant progress toward meeting standards, livestock grazing use can continue contingent upon determinations from monitoring data that the implemented actions are effective in making significant progress toward meeting the standards.” These determinations for Standard 2 can be found in the associated LHE. In addition, proposed implementation of new Term and Conditions targeted toward assuring significant progress toward meeting standards can be found in the EA. Please refer to 43 CF 4180.2 for the standards and guidelines for grazing administration process.
WWP – V (3)	Additionally, livestock grazing is currently allowed within the San Simon River corridor, despite recommendations by BLM to restrict livestock grazing in this area. Dec. 2020 EA at 14. If the BLM proposes to prohibit Badger Den livestock from utilizing this river corridor, how does BLM propose keeping the livestock from the Tanque and 111	Fencing is already in place to restrict livestock movement into the Badger Den Allotment through the river channel. Please refer to 43 CFR 4120.3-2 for range improvement agreements and 4150.2 for process of managing unauthorized livestock use, should it occur.

Commentor/ Section	Comment	BLM Response
	Ranch allotments from entering the Badger Den portion of the corridor? What types of and in which locations will fencing be necessary to move the corridor towards meeting the Land Health Standards?	
WWP – VI.	The one thing that was clear from the LHE was that many areas are moving from grasslands to shrubtype ecological sites. This is a well-known result of livestock grazing, especially when grazing occurs on arid lands. This is a troubling development and one that should indicate livestock grazing is not suitable. WWP provided peer reviewed scientific literature on this point that BLM has failed to incorporate into its analysis. This is a failure to use the best available science, and simply poor process by land managers.	<p>The LHE indicated that some communities had shifted to alternative stable states. The shift was attributed to reasons discussed in Section 7 of the LHE and included historic overgrazing (prior to the 1934 Taylor Grazing Act), extended drought, railroad and road development, and other factors. Upland Land Health Standards are being met as documented through the LHE. The LHE summarizes in section 7.1.1 <i>Standard 1 Determinations</i>, “Because livestock grazing has not been permitted on the allotment since 1993 and the allotment has been predominantly underutilized and/or vacant since that time, current land health represents what the allotment is capable of achieving without management actions being implemented such as vegetation or soil treatments. Management actions may be considered for these treatments, whether meeting Standard 1 or not, however, often these sites are stable alternative states and considered an appropriate site condition. For sites that have not naturally transitioned back into HCPC [historic climax plant community], established ESD STM models allow for proper grazing in transitioning back to HCPC; therefore, proper grazing is an appropriate management action, and would not further degrade the landscape.”</p> <p>Regarding transitions from shrub to grassland, “Shrub-driven declines in grass cover and production also help explain observations of shrub encroachment into arid grasslands where disturbances related to livestock grazing (Browning</p>

Commentor/ Section	Comment	BLM Response
		and Archer 2011) and fire (O'Connor et al. 2014) have been eliminated. Further development of dryland state-and-transition models (for example, Bestelmeyer et al. 2011) should incorporate biotic interactions as a mechanistic driver of state change.” (Pierce et al. 2019). Though this information states that where grazing and fire is lacking on the landscape, shrub encroachment could transition from grassland to shrubland, further research and development is warranted, and therefore not considered in this analysis.
WWP – VII. (1)	Unfortunately, the BLM has failed to adequately address climate change in this analysis. In light of the well-known increasing and significant impacts climate change is having on the desert, we are baffled as to how the BLM can find the livestock grazing on what should be protected lands is appropriate. The answer must be that the BLM failed to actually identify, look at, or analyze the impacts of livestock grazing in light of climate change and drought. The lack of information on these issues in the EA provides ample evidence that our concerns are valid and correct.	Please see Section 1.6.1 as this issue and rationale has been added to the EA.
WWP – VII. (2)	The BLM should exclude livestock year-round from the following pastures that contain riparian vegetation, referred to as the “river channel pastures”: San Simon, Ryan Seeding, and Joy Valley Pastures. Dec. 2020 EA at 9. The BLM failed to consider the changes in growing season that are likely given global climate change, historic and ongoing drought, and changes in wildlife migration and habitats responsive to plant phenotypic plasticity resulting from climate change and drought.	Exclusion of livestock year-round from the river channel pastures has been added to Section 2.3 of the EA as an alternative considered but eliminated from detailed analysis. Reasons for elimination are described in the EA and include, “The LHE considered ESDs for appropriate use of lands, which include the use of appropriately managed livestock. In areas which have departed from reference condition, proper livestock management is considered appropriate in transitioning back to reference condition. The LHE analysis recommended management action includes, “Consideration

Commentor/ Section	Comment	BLM Response
		<p>should be given to deferment of livestock from sensitive riparian areas during critical growing periods to assist with production and maintenance of riparian-wetland plant communities.” This has been considered through the Proposed Action of the EA with applicable livestock grazing deferment. Additionally, the No Action alternative considers impacts associated with continued year-round exclusion of livestock; therefore, no additional analysis is warranted.</p> <p>The BLM cannot address changes to wildlife migration and habitats responsive to plant phenotypic plasticity resulting in climate change and/or drought because doing so would be speculative.</p>
WWP – VIII. (1)	First, we asked the BLM to accurately describe how Animal Unit Months (AUMs) are calculated. In the past, federal agencies generally use an estimated 1,000-pound cow to calculate AUMs. This is in error and does not reflect the current understanding of livestock weights. BLM’s response is that this is irrelevant.	The response provided in Appendix D of the EA for this comment is still applicable and states, “Animal unit month (AUM) means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month. The weight of the cow is not considered in the grazing regulations. Adjustments to permitted use are based on assessments of rangeland health. If livestock require more forage to support a larger weight, then forage could show excessive use and adjustments to carrying capacity would be made to comply with allowable utilization rates established in the Safford District RMP.”
WWP – VIII. (2)	Second, we asked the BLM to consider and disclose the impacts of the very important issue of trespass livestock, yet BLM refused. The BLM states that “[d]ue to the vacancy of the allotment, current livestock grazing is not contributing toward not meeting standards.” Dec. 2020 EA at 2. However, this statement should be modified to state that	<p>Impacts associated with unauthorized livestock was an issue considered but eliminated from detailed analysis in the EA and states, “6. How would unauthorized livestock impact the Badger Den Allotment?</p> <p>The BLM recognizes that unauthorized livestock use has occurred on the Badger Den Allotment, and the effects of</p>

Commentor/ Section	Comment	BLM Response
	<p>“current AUTHORIZED livestock grazing is not contributing toward not meeting standards, trespass livestock and historic livestock grazing are contributing to the failure to meet standards.”</p>	<p>this use has been documented in the associated LHE. However, unauthorized livestock use is not a part of the Proposed or No Action Alternatives, and therefore is not analyzed in this EA. Livestock use is either authorized through the issuance of a grazing permit, or it is unauthorized, and the BLM will act according to regulation 43 CFR 4150.”</p> <p>The advised change in wording will not be incorporated because the LHE states, “No resource damage has been observed or documented by incidental unauthorized livestock use on the Badger Den Allotment.” Therefore, whether authorized or not, current livestock grazing is not contributing toward not meeting standards.</p>
WWP – VIII. (3)	<p>Third, we asked the BLM to revise the language used regarding livestock infrastructure and the assumptions that this infrastructure is beneficial to wildlife. BLM did not adequately respond to our concerns, though it does appear that BLM acknowledged that much of the infrastructure on this allotment is non-functional.</p>	<p>Several scoping comments relate to livestock infrastructure (comment IV, V, IX.C, IX.D, and XI). Each comment was responded to in Appendix D of the EA. Response to comment IV covered presence and condition of existing improvements and states that range improvement presence and/or condition is addressed in the EA as far as it affects the proposed or alternative actions. Several responses mention how Badger Den Well is in the process of being repaired and state that for purposes of this EA, impacts of fully permitted use is being considered. Responses to comments and the EA also clarify that if Badger Den Well or other base waters are in disrepair, then livestock numbers will be reduced as described in Section 3.1.3 of the EA. Section 3.1.3 also discusses other required improvement maintenance such as pasture fencing of river channel pastures as well as other base waters.</p>

Commentor/ Section	Comment	BLM Response
		<p>Regarding construction of infrastructure and impacts to wildlife, the EA responded to comment IV and IX.C in Appendix D that existing infrastructure is already in place and the EA does not implement construction of new infrastructure, therefore no additional NEPA is required. Additionally, there are no known records of big game migratory species and therefore no disruption to wildlife corridors, as well as no indication that pre-existing infrastructure has disrupted wildlife habitat connectivity or migration.”</p> <p>The request to include an Economic Impacts Analysis regarding infrastructure repair was responded to in comments IX.D and XI in Appendix D.</p> <p>Regarding use of the term “range improvement”, this is an appropriate term for rangeland infrastructure. According to The Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.), the term “range improvement” means any activity or program on or relating to rangelands which is designed to improve production of forage; change vegetative composition; control patterns of use; provide water; stabilize soil and water conditions; and provide habitat for livestock and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical means to accomplish the desired results.”</p> <p>Public land infrastructure is permitted through “range improvement permits” or “cooperative range improvement agreements.” For existing improvements/infrastructure, the</p>

Commentor/ Section	Comment	BLM Response
		EA references both range infrastructure and range improvements and the terms are considered synonymous.
WWP – IX.	WWP asked BLM to include an accurate economic analysis, including the costs to the BLM (and therefore, the public) related to managing livestock permits and must disclose the amount of money lost to the grazing program as a result of extremely low grazing fees (just \$1.35 per AUM in 2019 and 2020) as compared to private and state land livestock grazing rates. We asked that this information be disclosed and the public provided an opportunity to review and comment upon this important aspect of the proposed grazing authorization. BLM refused.	<p>An analysis of program costs is beyond the scope of this Environmental Assessment. Grazing is considered a public service and is part of the BLM mission, as defined in FLPMA. As part of the agency mission, program administration is considered a public service and is not in any kind of comparative competition with private or state government programs.</p> <p>The grazing fee charged by the BLM is mandated and determined by formulas in the Public Rangeland Improvement Act (PRIA, PL 95-514) of 1978. BLM does not have the authority to go beyond the limits of the statute in determining annual grazing fees, as determined by Congress. The Federal government is not responsible for “livestock infrastructure repair” and does not determine what funding sources allottees may use.</p> <p>BLM does not analyze economic impacts at the individual level. At the industry level, the addition of roughly 1,500 AUMs from the leasing of the Badger Den Allotment would not be reasonably expected to have significant impacts to the livestock industry in either Graham County, or the State of Arizona. No further economic or social impact analysis is warranted.</p>
WWP – X.	The BLM has violated FLMPA by using extremely outdated management direction, refusing to provide information and opportunities necessary for the public to fully engage in the NEPA process, and will further violate FLMPA if it approves this grazing	These decisions from the Safford District RMP are still relevant, and the EA does not use any data or analysis from the RMP.

Commentor/ Section	Comment	BLM Response
WWP – X.	<p>authorization because there will be an unnecessary and undue degradation of public lands as a result.</p> <p>Violations of the (outdated) RMP, and therefore additional FLMPA violations include the following decisions from RMPs (VM02, VM04, WF02, WF14, WS01, WS05, Standard 3 of Guidelines, and 43 CFR 4100.0-2)</p>	<p>Further, the Safford District RMP was amended by the Decision Record for the Statewide Land Use Plan Amendment for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration Environmental Assessment (EA) (BLM 1997b). This decision established that grazing management, which provides for plant growth and reproduction of those plant species needed to reach desired plant community objectives, will be applied to all allotments under year-long grazing and that future grazing decisions would be in accordance with the Arizona Standards and Guidelines.</p>
WWP – XI.	<p>The relationship between livestock grazing and fire is complicated and the BLM has again done inadequate analysis of the impacts of returning livestock grazing to this allotment as it relates to fire and grassland conversion. WWP provided peer-reviewed scientific literature on this point and BLM has refused to incorporate this information into the analysis.</p>	<p>This concern is addressed in Section 3.1.3 of the EA and more information has been added to address the relationship between livestock grazing and fire.</p>

Appendix F: Errata Sheet to the Draft Environmental Assessment and Land Health Evaluation

The Draft Badger Den Allotment (No. 51100) Grazing Permit Issuance Environmental Assessment (EA) (DOI-BLM-AZ-G010-2020-0014-EA) was made available for public review during a 30-day comment period from December 11, 2020 through January 15, 2021. Notification of the Draft EA, which incorporates by reference the associated Land Health Evaluation (LHE) Report, was distributed via certified email to nine individuals and organizations and posted to a BLM ePlanning website. Two comment letters were received, and two comments were submitted via ePlanning. The BLM has chosen to incorporate corrections and revisions into the LHE in the interest of clarity of information. Revisions contained therein did not result in any substantive modifications that would affect the proposed action, alternatives, findings, or decisions. This Errata Sheet documents these changes. The revised LHE was signed March 8, 2021.

Land Health Evaluation		
Page	Section	Subject
3-4	4.1	Revised write-up to address Aplomado falcon due to all of AZ being the 10(j) area to ensure evaluation of species is clear and thorough.
9-10	6.4	Revised Table 2 to show that Site (BD-8) moved approximately 700 feet to the Northwest in 2018. The key area remained in the same ecological site and data collected for both 2014 and 2018 were used and compared to provide informative site characteristics.
45	10. References	Added AZGFD reference for Aplomado falcon
56	Appendix A	Revised Table 11 to show that Site (BD-8) moved approximately 700 feet to the Northwest in 2018. The key area remained in the same ecological site and data collected for both 2014 and 2018 were used and compared to provide informative site characteristics.
56-57	Appendix B	Updated the description and rationale for why the Aplomado falcon is not going to be impacted by grazing.
72	Appendix C	Updated the description for Figure 25 to include the site name and the phrase “(changed location)” to clarify why the two BD-8 pictures were different.

A Proposed Decision was mailed on June 2, and again on July 15, 2021, for issuance of the grazing permit on the Badger Den Allotment. The Badger Den Allotment Permit Issuance EA was made available at <http://go.usa.gov/xwH8x>. After publishing the Proposed Decision for the Badger Den Allotment (No. 51100) Grazing Permit Issuance Environmental Assessment (EA) (DOI-BLM-AZ-G010-2020-0014-EA) and received timely protest points, the BLM has chosen to incorporate several corrections and revisions into the Final EA in the interest of clarity of information. Revisions contained therein did not result in any substantive modifications that

would affect the proposed action, alternatives, findings, or decisions. This Errata Sheet includes a documentation of these changes.

Environmental Assessment		
Page	Section	Subject
7	1.6	The description of issues identified was revised to match the analysis in chapter three. This replaced the words “ground cover” with the words “water quality” for Issue 2. Issue 3 was included as “How would grazing livestock effect erodibility of soils?”
7-8	1.6.1	The word “will” was replaced by the word “would” in two issues identified but eliminated from detailed analysis.
10	2.1	A serial comma was added to the third Other Term and Condition for clarity, it now reads, “In order to improve livestock distribution on the public lands, all salt blocks and/or mineral supplements shall not be placed within one quarter of a mile of any riparian area, wet meadow, or watering facility (either permanent or temporary) unless stipulated through a written agreement or decision in accordance with 43 CFR 4130.3-2(c).”
35	Appendix B	In order to clarify known information, the section for Invasive, Non-native Species was changed. The previous text, “The Project will implement invasive and noxious weed species stipulations to prevent the spread of weeds.” Was changed to, “Non-native invasive species were noted as being few in the LHE. Native invasive species were present and had resulted in ecological site transitions away from reference condition. Return to reference condition was considered in Section 7 of the LHE and could occur in the presence of properly managed livestock grazing. Control of any noxious or invasive species found on the allotment would be addressed through a separate EA.”
36	Appendix B	The determination for Livestock Grazing Management was changed from “NI” to “PI” because livestock grazing management was analyzed in detail in the EA.
40	Appendix C	Due to multiple comments during public involvement regarding Mexican wolf, this species was included with an effects determination.
42	Appendix C	Due to multiple comments during public involvement regarding southwestern willow flycatcher, this species was included with an effects determination.
111	Appendix F	Added corrections to Appendix F – Errata Sheet to show corrections and revisions to the EA. Revisions did not result in substantive modification that would affect the Proposed Action, alternatives, findings, or decisions.