United States Department of the Interior

Fish and Wildlife Service
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In Reply Refer to:
AESO/SE

22410-2006-F-0414	02-21-04-F-0022
02-21-92-F-0070	02-21-04-F-0454
02-21-96-F-0160	02-21-05-F-0086
02-21-96-F-0422	22410-2007-F-0119
02-21-96-F-0423	22410-2007-F-0225
02-21-00-F-0029	22410-2007-F-0233
02-21-03-F-0462	22410-2008-F-0103

May 21, 2012

Memorandum

To: Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona

From: Field Supervisor

Subject: Biological Opinion on the Gila District Livestock Grazing Program

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). We received your request on March 24, 2008. At issue are impacts that may result from the proposed Gila District Livestock Grazing Program located in Apache, Navajo, Greenlee, Graham, Cochise, Santa Cruz, Pima, Pinal, and Gila counties, Arizona; and in Grant and Hidalgo counties, New Mexico. The proposed action may affect the southwestern willow flycatcher (*Empidonax traillii extimus*, flycatcher) and critical habitat, New Mexico ridge-nosed rattlesnake (*Crotalus willardi obscurus*, NMRR) and critical habitat, desert pupfish (*Cyprinodon macularius*) and critical habitat, Gila chub (*Gila intermedia*) and critical habitat, Gila topminnow (*Poeciliopsis occidentalis occidentalis*), Little Colorado spinedace (*Lepidomeda vittata*) and critical habitat, loach minnow (*Tiaroga cobitis*) and critical habitat, spikedace (*Meda fulgida*) and critical habitat, razorback sucker (*Xyrauchen texanus*) and critical habitat, Huachuca water umbel (*Lilaeopsis schaffneriana* ssp. *recurva*) and critical habitat, Peebles Navajo cactus (*Pediocactus peeblesianus* var. *peeblesianus*), and Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*, PPC).

In your memorandum, you requested our concurrence that the proposed action may affect, but is not likely to adversely affect, jaguar (*Panthera onca*), ocelot (*Leopardus (=Felis) pardalis*)

Chiricahua leopard frog (*Lithobates chiricahuensis*), lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), Mexican gray wolf (*Canis lupus baileyi*), Mexican spotted owl (*Strix occidentalis lucida*, MSO) and critical habitat, beautiful shiner (*Cyprinella formosa*) and critical habitat, Yaqui catfish (*Ictalurus pricei*) and critical habitat, Yaqui chub (*Gila purpurea*) and critical habitat, Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*), and Arizona hedgehog cactus (*Echinocereus triglochidiatus* var. *arizonicus*). We concur with those determinations and provide our rationale in Appendix A at the end of this BO.

Your request is a reinitiation of three previous livestock grazing consultations:

1. Programmatic Biological Opinion for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (#02-21-96-F-0160) with reinitiations (1997 BO);

2. Biological Opinions for the Phoenix District Portion of the Eastern Arizona Grazing EIS and the Upper Gila-San Simon Grazing EIS (#02-21-96-F-0422 and #02-21-96-F-0423) with amendment (Phoenix District BOs); and

3. Biological Opinion for Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem (#02-21-00-F-0029) (18 Allotments BO).

This biological opinion is based on information provided in the biological assessment (BA) submitted with your request memorandum, telephone conversations, electronic mail, previous consultations addressing livestock grazing in the project area, and other sources of information. All appropriate conservation measures, analyses, and reasonable and prudent measures from the consultations that are being reinitiated are incorporated into this BO. Other consultations addressing livestock grazing are also incorporated where appropriate. All these consultations are listed in the consultation history section. Some of the specific conservation measures based on previous consultations are listed in the conservation measures section. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, livestock grazing activities and their effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office**.**

Contents

Consultation History

- September 26, 1997. We issued the Programmatic Biological Opinion for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeastern Arizona (#02-21-96-F-0160). The opinion was reinitiated twelve times from 1997-2009.

- January 8, 1998. We issued the Biological Opinion on the Upper Gila River-San Simon Grazing Environmental Impact Statement (#02-21-96-F-0423).

- November 3, 1998. We issued reinitiation number one for #02-21-96-F-0160.

- November 16, 1998. We issued reinitiation number two for #02-21-96-F-0160.

- November 17, 1998. We issued reinitiation number three for #02-21-96-F-0160.

- March 4, 1998. We issued the Biological Opinion on the Phoenix District Portion of the Eastern Arizona Grazing Environmental Impact Statement (#02-21-96-F-0422).

- April 16, 1999. We issued reinitiation number one for the Phoenix District Portion of the Eastern Arizona Grazing EIS and the Upper Gila-San Simon Grazing EIS biological opinions (#02-21-96-F-0422 and 02-21-96-F-0423).

- April 12, 2000. We issued reinitiation number four for #02-21-96-F-0160.

- December 11, 2000. We issued reinitiation number five for #02-21-96-F-0160.

- October 4, 2002. We issued the biological opinion for the Las Cienega NCA Resource Management Plan, which was the sixth reinitiation of #02-21-96-F-0160.

- October 23, 2003. We issued the biological opinion for the Livestock Grazing on 18 Allotments Along the Middle Gila River Ecosystem (#02-21-00-F-0029).

- June 10, 2004. We issued the reinitiated biological opinion for the Gila Box Riparian National Conservation Area Interdisciplinary Activity Plan, Graham County, Arizona (#02-21-92-F-0070), which was the seventh reinitiation of #02-21-96-F-0160.

- June 29, 2004. We issued the conference opinion for the Martinez Canyon Native Fish Restoration (02-21-03-F-0462).

- August 12, 2004. We issued the concurrence for the re-authorization of the 10-year grazing permit for the Washboard Wash allotment (02-21-01-I-0063).

- September 3, 2004. We issued the biological and conference opinion for the Bureau of Land Management (BLM) Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (02-21-03-F-0210) (Fire BO).

- April 6, 2005. We issued the biological opinion for the Effects of Existing Land Management Practices on Reestablished Populations of Gila Topminnow and Desert Pupfish in the Aravaipa Creek Watershed (#02-21-04-F-0022).

- April 19, 2005. We issued the biological opinion for the Proposed Reestablishment of Spikedace, Loach Minnow, Gila Topminnow, Desert Pupfish, and Augmentation of Gila Chub into Multiple Springs and Streams within the Muleshoe Cooperative Management Area (02-21-04-F-0454).

- 2006 to 2007. Informal discussions through meetings, telephone conversations, electronic mail, and review of draft documents.

- August 26, 2006. We issued the concurrence for the emergency capping of the Watson Wash Well (22410-2006-IE-0610)

- December 12, 2006. We issued the reinitiated biological and conference opinion for the Safford Resource Management Plan (#02-21-05-F-0086) (RMP BO).

- December 27, 2006. We issued reinitiation number eight (#22410-2007-F-0119 to extend the expiration date of the #02-21-96-F-0160 to September 30, 2007.

- June 28, 2007. We issued the biological opinion for Restoration of Native Fishes in Lower Bonita Creek and Implementation of a Memorandum of Understanding (MOU) and 10-Year Operation Plan between the BLM and the City of Safford (#22410-2007-F-0233).

- November 1, 2007. We issued the biological opinion for Continuing and Future Actions on the Proposed Reestablishment of Desert Pupfish and Gila Topminnow into Howard and Posey Wells Wildlife Water Development Exclosures within the San Simon Valley (#22410-2007-F-0225).

- March 24, 2008. We received your request for formal consultation on the Gila District Grazing Program.

- June 12, 2008. We issued reinitiation number nine for the Safford/Tucson Field Offices' Livestock Grazing Program, Southeast Arizona (#02-21-96-F-0160) to extend the expiration date to September 30, 2008.

- October 10, 2008. We requested an extension of time to complete the Gila District livestock grazing program biological opinion (22410-F-2006-0414).

- November 13, 2008. We received your agreement to the extension of time to complete the Gila District livestock grazing program biological opinion (22410-F-2006-0414).

- November 19, 2008. We issued reinitiation number ten for #02-21-96-F-0160, to extend the expiration date of the opinion to December 31, 2008.

- December 31, 2008. We issued the Biological Opinion on Aquatic Species Conservation at the San Pedro Riparian and Las Cienegas National Conservation Areas, Arizona (22410-2008-F-

0103).

- January 27, 2009. We issued reinitiation number eleven for #02-21-96-F-0160, to extend the expiration date of the opinion to February 28, 2009.

- March 19, 2009. We issued reinitiation number twelve for #02-21-96-F-0160, to extend the expiration date of the opinion to September 30, 2009.

- September 24, 2009. We received your memorandum to change your request from concurrence to formal consultation for the Huachuca water umbel and Pima pineapple cactus. You also requested to change your proposed action to remove the actions of using prescribed fire and vegetation management to improve range condition because the Fire BO (#02-21-03-F-0210) covers consultation for these types of actions.

- October 19, 2009. We sent you the draft biological opinion on the Gila District Grazing Program (#22410-2006-F-0414) for your review and comments.

- October 2009 to December 2011. Informal discussions through meetings, telephone conversations, electronic mail, and review of draft documents.

- January 31, 2012. We received your suggested edits and comments on the draft biological opinion on the Gila District Grazing Program.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The BLM proposes to continue livestock grazing on public lands within the Gila District. This proposed action includes 382 allotments (this excludes the Ironwood Forest National Monument and Las Cienegas Natural Conservation Area), encompassing 1,817,291 public land acres in eastern Arizona and small portions in southwestern New Mexico. A total District preference of 175,469 Animal Unit Months (AUM), or an equivalency of 14,622 head of cattle year long, are currently permitted on these allotments and represents the maximum use if all allotments were fully stocked. The BLM proposes to use the livestock management tools described in Federal regulations, Resource Management Plans (RMPs), grazing Environmental Impact Statements, and Arizona's Guidelines for Grazing Administration and other grazing policies, including that for drought, to enhance or maintain upland and riparian health and enhance or maintain desired conditions.

The active preference represents the upper limit of livestock use that can be authorized within a year based on the amount of forage available for livestock grazing as established in the land use plan (LUP), activity plan, or by decision of the authorized officer. LUPs also set forth program constraints and general management practices needed to achieve multiple use management objectives. Livestock grazing activities and management actions approved by the authorized officer shall be in conformance with the LUP. The BLM periodically reviews the permitted use specified in a grazing permit or grazing lease and makes changes as needed to manage, maintain or improve rangeland productivity, to assist in restoring ecosystems to properly functioning condition, to conform with land use plans or activity plans, or to comply with the regulations.

Changes in permitted use are supported by monitoring, field observations, ecological site inventory or other data acceptable to the authorized officer. Management of the allotments varies, using yearlong, seasonal, or ephemeral grazing, pasture rotations, and different rest scenarios. The 382 allotments also contain 3,814,996 acres of lands not administered by the BLM. The proposed action will occur in the project area, which includes lands within the jurisdiction of the Safford and Tucson field offices, area shown in Figure 1. Allotment boundaries, land status and/or property ownership within allotments are also shown in Figure 1. All allotments and proposed management are listed in Table 1 of this BO. BLM proposes to continue livestock grazing activities on the allotments as long as BLM implements the proposed action. Grazing activities in the Ironwood Forest National Monument and Las Cienegas Natural Conservation Area are addressed in separate BOs, and are not included in this consultation.

As part of the proposed action, some areas of public lands within the District have been excluded from livestock grazing (maybe year-long or seasonally) for resource benefits, including benefitting threatened or endangered species. Livestock grazing in these areas is not permitted, is considered unauthorized use, and is not considered part of the proposed action. The BLM, by regulation, will resolve unauthorized use of as stated in 43CFR Sec. 4150 which in part is presented below.

Sec. 4150.2 Notice and order to remove.

(a) Whenever it appears that a violation exists and the owner of the livestock is known, written notice of unauthorized use and order to remove livestock by a specified date shall be served upon the alleged violator or agent of record, or both, by certified mail or personal delivery. The written notice shall also allow a specified time from receipt of notice for the alleged violator to show that there has been no violation or to make settlement under Sec. 4150.3.
(b) Whenever a violation has been determined to be not willful and incidental, the authorized officer shall notify the alleged violator that the violation must be corrected, and how it can be settled, based upon the discretion of the authorized officer.
(c) When neither the owner of the unauthorized livestock nor his agent is known, the authorized officer may proceed to impound the livestock under Sec. 4150.4.

BLM has flexibility to effect changes in grazing management to address rangeland health, including: The use of permit/lease terms and conditions to achieve resource objectives 43 CFR (section 4130.3); Modification of terms and conditions when active use or related management practices are not meeting plan objectives or standards and guidelines (section 4130.3–3); Suspension of active use in whole or in part due to the reasons set forth in section 4130.3–3 based on monitoring, field observations, ecological site inventory or other acceptable methods (section 4110.3–2); and Issuance of immediate full force and effect decisions to close areas to grazing when the authorized officer concludes that soil, vegetation, or other resources require immediate protection because continued grazing use poses an imminent likelihood of significant resource damage.

Installation of new range improvements (such as water sources and fences) and maintenance of existing and new improvements are included in the proposed action, though specific improvements and their locations are not identified.

The project area includes both Section 3 and Section 15 lands (refer to Section 3 and Section 15 of the Taylor Grazing Act). On Section 3 lands (within Grazing Districts), BLM management of public lands can influence management on adjoining non-BLM administered lands within grazing allotments. The Safford Grazing District contains Section 3 lands primarily in Graham County with small portions of southern Greenlee and northeastern Cochise counties. On section 15 BLM lands (outside of Grazing Districts), BLM's management is generally very limited because of mixed ownership land patterns and most allotments have small parcels of BLM lands and, are difficult to manage. Section 15 lands are primarily in Navajo, Apache, Santa Cruz, Cochise, Pima, and Pinal counties. The few Section 15 allotments that have a substantial amount of public land in large blocks, not in a checker board pattern, would have more management flexibility.

The action area includes areas proposed for grazing activities plus additional areas influenced by the proposed action. The major drainages that can carry these influences out of the project area are the: 1) Gila River drainage, including the San Pedro, Santa Cruz, and San Simon rivers, ending at the western boundary of the Gila District (generally downstream on the Gila River to the Ashurst-Hayden Diversion Dam and the Santa Cruz River drainage to the Pima County boundary with Pinal County); 2) Little Colorado River and tributaries to the project area boundary; and 3) headwaters of the Río Yaqui in the project area.

Arizona Standards for Rangeland Health and Guidelines for Grazing Administration

BLM manages livestock grazing to achieve and maintain public land health. To achieve desired conditions, the agency uses rangeland health standards and guidelines, which the BLM developed in the 1990s with input from the citizen-based Resource Advisory Councils across the West. Standards describe specific conditions needed for public land health, such as the presence of stream bank vegetation and adequate canopy and ground cover. Guidelines are the management techniques designed to achieve or maintain healthy public lands, as defined by the standards.

The Department of the Interior's final rule for Grazing Administration, issued on February 22, 1995, and effective August 21, 1995, required that BLM State Directors develop State or regional standards and guidelines for grazing administration in consultation with BLM Resource Advisory Councils (RAC), other agencies, and the public. Each State was given until February of 1997 to develop state standards and guidelines or use the standards and guides as provided in the grazing regulations. In 1997, the Secretary of Interior approved Arizona's Standards for Rangeland Health and Guidelines for Grazing Administration. The Decision Record, signed by the BLM State Director (April 1997) provides for full implementation of the Standards and Guides in Arizona BLM Land Use Plans.

Rangeland Health Standards (now referred to as Land Health Standards) are measurable and attainable goals for the desired condition of biological resources and physical components/characteristics of desert ecosystems found within the Gila District. BLM typically evaluates indicators of land health by ascertaining the effects of livestock grazing on natural resources on landscape units called ecological sites. The Arizona Rangeland Health Standards are defined below:

- Standard 1 - Upland Sites: Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site).

- Standard 2 - Riparian-Wetland Sites: Riparian-wetland areas are in proper functioning condition.

- Standard 3 - Desired Resource Conditions: Productive and diverse upland and riparian-wetland communities of native species exist and are maintained.

An Interdisciplinary team completes a Land Health Allotment (LHA) evaluation (now referred to as the Evaluation Report) of land health standards and determines the causal factors for not achieving a standard.

The LHA evaluation process evaluates three land health standards: 1-upland condition; 2 riparian conditions; and 3-desired resource condition. The evaluation steps are:

A. Identify assessment areas to be evaluated for achievement of land health standards. The evaluation can be completed at the allotment level or higher levels such as watersheds, landscapes, and groups of allotments.

B. Prioritize areas for evaluation.

C. Assemble existing information e.g., monitoring data, inventory data, trend, utilization, climate data and actual use information.

D. Evaluate data to ascertain whether land health standards are achieved. If additional information is needed to draw conclusions about the achievement of standards, then Technical Reference (TR) 1734-6, *Interpreting Indicators of Land Health,* or additional monitoring data may be necessary.

E. Prepare an Evaluation Report to document whether land health standards are achieved. The Report can be helpful to identify the appropriate action needed to make significant progress toward achieving the standards where they are not met. The Evaluation Report will include:

   - Identification of the area evaluated.
   - A reference to information sources used in the evaluation.
   - A summary of the data used to ascertain whether standards are achieved.
   - A list of standards and/or objectives evaluated.
   - Indicators used to evaluate whether standards are achieved, and conclusions drawn by the interdisciplinary (ID) team. Monitoring is related to the indicators that were used to ascertain non-achievement.

   If the Evaluation Report documents that standards are not achieved in the assessment area, then the authorized officer will determine significant causal factors for non-achievement. If existing grazing management practices or levels of grazing use on public land are significant factors, then an appropriate action or actions will be developed and implemented in accordance with 43 CFR subpart 4180.2(c).

   Once the Determination of Land Health Achievement is completed the authorized officer issues a decision:

- If existing grazing management or levels of grazing use are determined to be significant causal factors for not achieving land health standards, the authorized officer will take appropriate action by issuing a decision to modify grazing, construct management facilities, or implement treatments in accordance with 43 CFR subparts 4160. "Appropriate action" under 43 CFR subpart 4180.2(c) has been taken when the decision to implement the action is issued.
- If the significant causal factors are a result of BLM-authorized activities other than grazing, the authorized officer will take action to correct the situation in accordance with regulations applicable to that activity. If the causal factor is an activity or event outside of BLM's control, no action is required. However, this may provide an opportunity to coordinate and cooperate to achieve management that will remedy the factors causing the land health standards to not be achieved on public land.
- Monitoring to determine if actions taken are resulting in significant progress toward achieving the standard(s) is a high priority. Monitoring is tied to the indicators that were used to ascertain achievement or non-achievement.

Baseline Condition and Trend data.

The BLM used inventory and monitoring data to assess ecological site conditions and status from 1983 to 1997. This information has been assessed for most of the allotments within the Gila District. The Ecological Site Inventory method (ESI) referenced in the 1997 BO (1997 BO, Table 5, and Pages 39-43) evaluates current conditions against Potential Natural Community (PNC) for the site.

A potential natural community is a biotic community that would become established on an ecological site if all successional sequences were completed without interference by humans under contemporary environmental conditions. The potential natural community recognizes past influences by humans, including past land use and including exotic species of plants or animals. Human influence is excluded from the present onward to eliminate the complexities of future management. A potential natural community explicitly recognizes that naturalized exotic species may persist in the final stage of secondary succession and that succession after disturbance does not always reestablish the original vegetation (adapted from Habich 2001).

An ecological site, as defined for rangeland, is a conceptual division of the landscape, which is a distinctive kind of land with specific soil and physical characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation, and in its ability to respond similarly to management actions and natural disturbances. The Natural Resource Conservation Service periodically updates ecological descriptions.

The BLM typically monitors change on ecological sites in response to management or weather but makes livestock-grazing management changes on a management unit of pastures or allotments rather than ecological sites because ecological sites are typically too small in size to manage separately for livestock grazing. Prevalent ecological sites within pastures or allotments are typically monitored through use of key areas or critical areas (i.e. riparian areas). Response to management or weather on these key areas or critical areas is used as a basis for judging whether livestock-grazing management is in need of change within pastures or allotments.

This BO uses data from LHE reports if available, and ESI data for rangeland condition information (Tables 2 and 3). Ecological Site Condition and trend information used in the analyses of this BO may be the most complete information available for BLM land in the Gila District because not all of the allotments have land health evaluations. The condition and trend information for BLM lands in Table 2 was updated for this consultation by rangeland specialists based on the best available data and their knowledge of the allotments, but additional field data may not have been collected since the 1997 BO (Tim Goodman, pers. comm.). Land Health Evaluations are an ongoing process. The data presented in Table 3 are the results of land health conditions at a point in time, and provide the best available information about current conditions.

Using data from either method may not necessarily reflect current conditions for listed species. The habitat needs for individual species must be evaluated against the existing conditions and realistic potential for an allotment. The ESI method is based on current condition in relation to the potential natural community (PNC) for the site, which may not necessarily reflect habitat conditions for a listed species. LHA evaluation process provides an evaluation against a desired resource condition that may reflect the status of certain habitat components.

For this analysis, we are assuming that both methods provide a general assessment of rangeland condition (e.g., soil stability and ground cover appropriate to soil type, climate, and land form). While the data may not be sufficient to determine if a specific land parcel provides the specific habitat components for a species, it likely is sufficient to reflect general conditions. For example, land parcels that are meeting the LHSs are more likely to result in less erosion and fewer extreme flood events than parcels that do not meet the LHSs, though this may not be always the situation

These assessments are for BLM lands only. They do not include assessments of non-BLM lands in the allotments.

CONSERVATION MEASURES

All conservation measures and reasonable and prudent measures from previous consultations addressing grazing within the project area that are continuing or have not been fully implemented are incorporated in this BO. The conservation measures listed below are the result of reviewing and editing the measures of the previous documents that are applicable for this proposed action, and additional measures the BLM has proposed during this current consultation. Any conservation measure or reasonable and prudent measure from a previous consultation that has been implemented and that would affect the status of a species is reflected in the Environmental Baseline section (see the Safford and Tucson Field Offices' annual monitoring reports for actions regarding specific measures). The BLM will implement the following conservation measures to reduce adverse effects to listed species and critical habitat from authorized livestock grazing actions on BLM lands within the designated allotments listed in Table 1.

General Measures

General measures will be implemented for all livestock grazing actions, including maintenance or construction of range improvements in the Gila District unless otherwise modified in species or site specific measures. The BLM will:

1. Consider effects to listed species and designated critical habitat during grazing allotment evaluations. Realistic and achievable habitat elements that benefit listed species will be included when determining desired resource condition.
2. Review, for every proposed project, the FWS county list and conduct appropriate surveys and clearances for threatened and endangered species.
3. Submit an annual monitoring report to the FWS Arizona Ecological Services Field Office on or before March 15. These reports shall briefly summarize for the previous calendar year: 1) implementation and effectiveness of these measures and 2) documentation of incidental take, if any. The report shall also summarize livestock grazing actions on allotments that may affect occupied, suitable and critical habitat for listed species, including: any inventories, monitoring, evaluations, range improvement projects, and known unauthorized livestock use in areas excluded or otherwise closed to grazing that benefit listed species.
4. Work to remove unauthorized livestock from areas excluded or otherwise closed to grazing that provide a benefit to listed species and their habitat (see Table 4 for a current list of exclosures). The BLM will contact the owner of the livestock as soon as possible after the unauthorized use is reported and request removal. The unauthorized use will be resolved through CFR authorities (43 CFR Sec. 4150). The BLM will work as quickly as practical to repair exclosure fences or notify permittees to repair fences. Where unauthorized use is a recurrent problem, alteration or additional barriers to livestock movement will be considered.
5. Provide a biologist to present instruction for activities in the field in areas with listed species and act as a spot monitor where the potential for take exists.
6. Require all trucks and heavy equipment associated with BLM projects to use existing roads. Washes and stream beds will be avoided.
7. Continue to implement all reasonable efforts to minimize adverse affects to listed fish for actions in and adjacent to stream channels (fence, road, or water development activities).
8. Require all heavy equipment associated with BLM projects to be pressure washed to remove mud and seeds, before transporting to project site. Field equipment will be decontaminated according to established protocols. Employees, contractors and other associates will be advised of any special site specific or species protocols.
9. Require, during any BLM construction project, equipment to be parked well away from stream channels and washes to prevent potential contamination. Equipment will be checked daily for leaks.
10. Not construct new permanent roads or trails within listed species' habitats, with the possible exception of lesser long-nosed bat foraging areas. Fence lines will not be bladed prior to fence installation. Some vegetation work, including limbing and off-road travel, may be authorized on a case-by-case basis.
11. Require large surface disturbing actions to use straw waddles or other approved sediment catching measures in place.
12. Avoid, to the extent possible, impacts to native riparian vegetation.

13. Manage for appropriate vegetation species in riparian areas that support listed species. At a minimum this will likely be seasonal grazing use (winter use only), but complete exclusion will also be considered. After riparian areas are closed to grazing, livestock use will not be authorized until fencing or other control methods are in place.
14. Inspect fences used for excluding livestock from BLM managed riparian areas/pastures before livestock are turned out.
15. Place livestock supplements, including salt, at least a quarter mile away from riparian areas.
16. Conduct, in order to minimize impacts, trailing through BLM riparian areas so that 1) livestock are present for the shortest period of time possible in riparian/aquatic areas, 2) the shortest route across the stream/river is taken, 3) trailing across streams/rivers is conducted as infrequently as possible, and 4) whenever possible, trailing is conducted when bankline soil moisture is relatively low.
17. Continue to evaluate all existing and proposed stock water sources on BLM-managed lands with regard to their degree of risk for introducing nonnative aquatic species to habitat with listed aquatic species or designated as Critical Habitat. The BLM will then, in conjunction with the FWS and Arizona Game and Fish Department (AGFD), develop and implement management techniques or practices for the tanks with perennial water. Management techniques may include, but are not limited to, seasonal drying, replacement of the existing tanks with troughs, or other appropriate methods.
18. Coordinate control efforts with the FWS and AGFD if invasive aquatic species are discovered in developed water on BLM land. The water will be dried or treated with piscicide through a coordinated effort to eliminate the invasive species. Where appropriate, grazing permits will have a standard term and condition that non-native aquatic species will not be stocked in waters on public lands.
19. Locate new facilities away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function or goals for threatened and endangered species (TES). Existing facilities will be managed in a way that does not conflict with riparian-wetland function or TES goals, or will be relocated or modified when incompatible with riparian-wetland function or TES goals.

Southwestern willow flycatcher

1. Mapping: The BLM will maintain maps that convey information about flycatcher habitat. These maps will be reassessed as conditions change, (example; fire and floods). Maps will include the following information:
    a. Location, size, shape, and spacing of habitat areas.
    b. Habitat stage with respect to flycatchers according to the following classification: suitable-occupied, suitable-unoccupied, suitable un-surveyed, potential in the short-term (1 to 3 years), and potential in the long-term (greater than 3 years).

c. Status of flycatcher surveys for each area of suitable habitat: either the date(s) surveyed or indication that the area has not been surveyed.

2. Habitat Management Guidelines: The BLM will implement the following guidelines:

   a. Livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-September 1).

   b. Manage suitable flycatcher habitat so that suitable characteristics are not eliminated or degraded.

   c. Manage riparian areas to allow natural regeneration and, therefore, allow those sites with potential to progress into suitable habitat.

3. Range Improvements: The BLM will locate range improvement projects outside of flycatcher occupied areas, except for fences, cattle guards, and gates needed to exclude or better manage livestock. Within breeding habitat, implement construction, maintenance, or management activities outside of the flycatcher breeding season. Any range improvement project within two miles of occupied, suitable or critical habitat, including those proposed to improve flycatcher habitat, will be reviewed by the FWS for compliance with the Biological opinion.

4. Cowbird Control: To reduce the likelihood of nest abandonment and loss of flycatcher productivity owing to cowbird parasitism associated with BLM-authorized grazing activities in or near occupied habitats, BLM will implement the following:

   a. Investigate, identify, and assess livestock concentration areas on BLM lands in the action areas that are likely foraging areas for cowbirds. This will be done within a 5-mile radius of occupied or un-surveyed suitable southwestern willow flycatcher habitat. The BLM will evaluate ways to reduce any concentration areas found. The BLM will pay special attention to those facilities within two miles of breeding habitat, since this is the range in which alteration of concentration areas are most effective.

   b. The BLM will ensure that willow flycatcher surveys and nest monitoring take place at least every three years in the areas where the BLM controls significant breeding habitat and public land grazing is a predominate use on adjacent lands. This will be initiated along the Gila River between Winkleman and the Dripping Spring Wash confluence and between Kelvin Bridge and the Buttes. If jointly determined, other areas may be added. Monitoring protocols will be updated as necessary and nest monitoring may use surrogate species.

   c. If cowbird parasitism in monitored areas is determined to be ten percent of nests or greater, the BLM and the FWS will meet and discuss reasons for the parasitism and possible management actions.

5. On BLM lands with suitable or potential willow flycatcher habitat, restrict livestock grazing on riparian vegetation to winter use only from November 1 to March 30, and monitoring will be done to ensure utilization levels do not exceed 30 percent limits on apical meristems of woody vegetation 0-6 feet tall (e.g. cottonwoods and willows). Monitoring will be done prior to, during, and after the livestock have used a riparian pasture. Once the 30 percent utilization limit is met, all livestock will be removed from the pasture. To the extent feasible, the BLM shall offer to assist the permittee in managing livestock use in the non-BLM portions of the allotment for the benefit of the flycatcher.

6. Work with private landowners in the Brunchow Hill allotment to exclude livestock from BLM lands in that allotment within the RNCA.
7. The BLM will ensure that livestock are removed from occupied or unsurveyed suitable habitat before the start of each southwestern willow flycatcher breeding season (April 1); this could include sweeps (checking within exclosures for livestock and removing any livestock found).

New Mexico ridge-nosed rattlesnake

1. The BLM will inform permittees and all field personnel who implement any portion of the proposed action in the Ben Snure, Sycamore, and Guadalupe W., AZ allotments of regulations and protective measures as described herein for the New Mexico ridgenosed rattlesnake. All field personnel shall be informed that intentional killing, disturbance, or harassment of threatened or endangered species is a violation of the Act and could result in prosecution. All personnel shall be advised that care should be exercised when operating vehicles in the project area to avoid killing or injuring snakes on roads.
2. The BLM will, at least once a year (preferably at the end of the growing season), monitor New Mexico ridge nosed rattlesnake habitat. Monitoring will focus on vegetative cover and at a minimum will include photographs.
3. The BLM will remove livestock grazing from burned areas above 5,000 feet in allotments with NMRR habitat for at least two monsoon seasons following a prescribed or wild fire to facilitate vegetation recovery after prescribed fire.

Fish-General

1. The BLM will conduct informational and educational programs pertaining to Arizona's native fishes and their habitats.
2. In occupied or suitable aquatic habitat for listed species or their designated critical habitat, the BLM will monitor appropriate aquatic habitat variables, riparian vegetation, and streambanks as they relate to livestock management and unauthorized livestock use, at least annually, using accepted BLM standards and methodologies.
3. The BLM will ensure that livestock do not have access to occupied or designated critical habitat before the permittee of the Muleshoe Allotment is allowed to graze.
4. The BLM will monitor populations of Gila topminnow, desert pupfish, loach minnow, spikedace, Little Colorado spinedace, and Gila chub at least annually.

Desert pupfish and Gila topminnow

1. The BLM will conduct habitat restoration activities for Gila topminnow and desert pupfish and continue to augment existing populations.
2. The BLM will ensure the timely repair and maintenance of structures required to maintain aquatic ecosystem function for Gila topminnow and desert pupfish.
3. When livestock use occurs on the South Rim Allotment, the BLM will monitor utilization limits for upland and riparian vegetation, and stream bank alteration and ensure that livestock are moved prior to exceeding these limits.

4. During years when livestock are present on the South Rim allotment, the BLM will monitor annually the utilization of woody riparian vegetation and physical impacts on streambanks before, during, and after livestock have been in the pasture. A fenced riparian exclosure will be constructed if utilization in the area exceeds 30 percent of woody riparian species (measured as a percentage of apical meristems within 2m (6 ft) of the ground grazed) or trampling, chiseling, or other physical impact by livestock on more than 20 percent of the alterable streambanks by length occurs in any two out of three years. If an exclosure becomes necessary under these terms, it shall be designed in cooperation with FWS and AGFD. BLM shall include results of monitoring in the annual report to our office.
5. On the South Rim Allotment during the winter grazing period, the BLM will inspect and monitor each reestablishment site and any sites that are occupied through dispersal.
6. If constructed on the South Rim Allotment, the BLM will ensure that fences are inspected and maintained a minimum of three times per year. Livestock will be removed from the Oak Grove Canyon sites or the potential enclosure of Parsons Springs, if built, as soon as possible.
7. The BLM will notify the FWS and AGFD by telephone or e-mail upon detection of more than 20 dead or dying fish of any species. This will be a clear indicator something is wrong and does not require specialized biological knowledge, as opposed to the skills needed to identify (specifically) Gila topminnow or desert pupfish.
8. The BLM will cooperate with the FWS and AGFD to identify other project-level measures to protect populations of pupfish and topminnow from grazing program impacts as specific impacts are identified.

Loach minnow and spikedace

1. The BLM will cooperate with the FWS and the AGFD to identify site-specific measures to protect loach minnow and spikedace populations from effects of the grazing program as specific effects are identified.
2. The BLM will limit trailing of livestock in loach minnow and spikedace habitat to 10 livestock through Aravaipa Creek on the Hell Hole allotment no more than three times per year, and trailing along the San Francisco River in the San Francisco allotment for no more than 0.25 mi and no more than twice a year.
3. Unless specifically consulted on, the BLM will not authorize off-road use of heavy equipment during project activities, within the wetted areas of Aravaipa Creek and the San Francisco River.

Razorback sucker

1. The BLM will work with private land owners to prevent unauthorized use by livestock on the BLM managed portions of the Gila River, Bonita Creek, Eagle Creek, and the San Francisco River.

Huachuca water umbel

1. The BLM will install and maintain range improvements to keep unauthorized livestock use out of the San Pedro RNCA.

2. The BLM will work with private landowners in the Brunchow Hill allotment to exclude livestock from BLM-administered lands in that allotment within the riparian zone of the RNCA.
3. The BLM will continue to work with Natural Resource Conservation Service, FWS, and landowners in the allotments to develop and implement watershed improvement projects that will increase infiltration.

Peeble's Navajo cactus

1. The BLM will fence additional occupied areas in the Apache Butte Allotment from livestock grazing as continuing surveys identify individuals and populations.

2. The BLM will conduct surveys before range improvements are constructed, and implement measures needed to avoid harming individual cacti.

Pima pineapple cactus

1. The BLM will not authorize seeding or planting of nonnative plant species in allotments with suitable Pima pineapple cactus habitat or in adjoining allotments that could result in invasion of nonnative plants into Pima pineapple cactus habitat.
2. Before construction of range improvement projects, the BLM will conduct surveys for Pima pineapple cactus in all areas directly or indirectly affected by the action. Areas indirectly affected may include areas within 0.5 mile of new water sources, or areas in which cattle numbers are increased due to fences or pasturing. Surveys shall be in accordance with FWS protocol. Range developments shall be planned to avoid direct impacts (death or injury) to Pima pineapple cactus as a result of construction or maintenance activities. For all site specific project proposals within the range of Pima pineapple cactus, the BLM will submit to the FWS a project plan and request a determination of adequacy.
3. The BLM will maintain or take actions to achieve healthy upland conditions on allotments with PPC habitat.
4. Within PPC habitat, the BLM will, on its lands or in cooperation with adjoining land owners, take actions that may include developing grazing strategies, planning and developing range improvement projects and vegetation management, and providing technical assistance that will promote the conservation of the PPC.

Jaguar and Ocelot

1. The BLM will work with Wildlife Services, the AGFD, and the FWS as necessary with regard to minimizing the potential for effects to jaguars and ocelots related to predator control on BLM lands.
2. The BLM will inform any entity associated with the livestock grazing program to not subject jaguars or ocelots to any predator control activities.
3. The BLM will continue, at least annually, to inform permittees with allotments within the range of the jaguar or ocelot, as appropriate, of the potential occurrence of jaguars or ocelots in their allotments, the status of the jaguar and ocelot, and that take of jaguar or ocelot, including harm and harassment, is prohibited under the Act and could result in prosecution.

4. The BLM will maintain dense, low vegetation (mesquite, cottonwood, willow, etc.) in major riparian or xero-riparian corridors on BLM-administered lands within the jaguar and ocelot ranges to the extent possible under the BLM's grazing program.
5. The BLM will continue to implement grazing actions that improve conditions of riparian areas.
6. The BLM will appropriately report any observations of jaguars or ocelots. The BLM, FWS, and AGFD will share information concerning general jaguar and ocelot locations and movement so that appropriate grazing related notifications and actions can be taken to protect against adverse affects.

Lesser long-nosed bat

1. The BLM will ensure that grazing related actions do not directly or indirectly affect day roost sites on BLM land as they are identified. The BLM will ensure that grazing program actions such as road construction and maintenance do not facilitate public access to known lesser long-nosed bat roosts.
2. The BLM will support surveys for lesser long-nosed bats to facilitate better management of lesser long-nosed bats and their habitat. Within the foraging range of lesser long-nosed bats, the BLM will consider the bat's forage base in any allotment evaluation, and, if necessary, modify grazing actions appropriately to reduce adverse affects.
3. The BLM will conduct, prior to construction of range improvement projects, pre-construction surveys for paniculate agaves and saguaros that may be directly affected by construction activities, or in the case of new water sources, may occur within 0.5 mi of the proposed water source. If agaves or saguaros are found during pre-construction surveys, the following measures shall be implemented:
    a. Locate fences, pipelines, waters, and other range improvement projects to reduce as much as possible injury and mortality of agaves and saguaros.
    b. Limit disturbance to the smallest area practicable and locate projects in previously-disturbed areas whenever possible.
    c. Limit vehicle use to existing routes and areas of disturbance except as necessary to access or define boundaries for new areas of construction or operation.
    d. Limit all workers' activities and vehicles to designated areas.
4. The BLM will not seed/plant non-native plants on any allotments in which paniculate agaves or saguaros occur.

Mexican spotted owl

1. Establish protected activity centers (PACs) for all known MSO pair or nest sites.
2. Continue to reduce impacts of livestock grazing in riparian areas that are or may be MSO habitat.

Chiricahua leopard frog

1. Coordinate with FWS and AGFD in removing non-native aquatic species from livestock ponds that, through surveys, are found to be occupied by Chiricahua leopard frogs.

SCOPE OF THE CONSULTATION

This consultation is programmatic, in that the effects of the livestock grazing program are evaluated broadly over a large range of actions and a large number of allotments. The BLM has the responsibility under section 7(a)(2) of the Act and 50 CFR 402.14(a) to review its future actions to determine whether any action may affect a listed species or critical habitat, and if such a determination is made, to enter into consultation with the FWS if that action does not fall within the scope of this programmatic BO or if that action has not been the subject of previous consultation. Reinitiation criteria are listed in the "REINITIATION NOTICE" of this document. However, to the extent possible, this opinion is designed so that all aspects of the program are addressed herein to the project level. The FWS offers this perspective for planning purposes only.

Some aspects of the proposed action were not described in detail, or the exact location, size, effects, etc., of specific projects are not specified in order to provide some flexibility in livestock management. This is particularly true for the installation of range improvement structures. As a means to extend the consultation to the project level, the opinion establishes a process whereby, as the details of such projects are developed, their effects can be evaluated and conservation measures developed and implemented under this opinion. No further consultations on these projects are required so long as the BLM and FWS agree that none of the reinitiation criteria are triggered, as outlined in the "REINITIATION NOTICE". In considering whether or not the reinitiation criteria are triggered, the BLM and FWS will determine if the type of proposed project and the nature of the impacts anticipated are addressed within the scope of activities of this BO, and the impacts are described and analyzed in this BO. In making this determination, the BLM and FWS will evaluate the additive effects (number and impacts of all such projects authorized under this opinion) to ensure that the cumulative sum of such projects do not exceed the extent or nature of that evaluated here, that the impacts do not exceed what is anticipated in this opinion, and that any anticipated take would not be exceeded. If anticipated effects or take of a proposed project exceed the anticipated effects in this opinion, the project type is not included in the "DESCRIPTION OF THE PROPOSED ACTION" for this BO, or anticipated take would be met or exceeded, the project would be subject to additional section 7 consultation if the BLM determines that the project may affect a listed species or its critical habitat.

This opinion evaluates all effects of the proposed action, including effects of interdependent or interrelated activities (50 CFR 402.02), some of which occur on non-Federal lands. Although the effects of grazing activities on non-Federal lands are addressed herein where they are interrelated or interdependent to the proposed action, reasonable and prudent measures (RPMs) and terms and conditions only apply to discretionary BLM actions, not actions conducted by private individuals, the State of Arizona, or others that do not require authorization from the BLM. Anticipated incidental take in the "Take Statements" for animal species is based on these effects analyses, and if the RPMs are implemented, the BLM is exempted from incidental take prohibitions in section 9 of the Act so long as such take is in compliance with the incidental take statement. The take

statement only applies to activities funded, authorized, permitted, or implemented by the BLM and does not authorize take by private individuals, the State of Arizona, or others, unless such take is incidental to an action that is authorized or permitted by the BLM and described in the "Description of the Proposed Action." Permittees and others conducting grazing activities not authorized by the BLM should apply for a section 10(a)(1)(B) take permit from the FWS for those activities that may result in take of a listed species.

The BLM and the FWS will review grazing actions in relation to the scope of the consultation at least once a year.

INTERDEPENDENT AND INTERRELATED ACTIONS

In accordance with 50 CFR 402.14(g), FWS is required to consider all effects of the proposed action, which refer to "the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." "Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration" (50 CFR 402.02). FWS's Section 7 Handbook provides further guidance on the definition of "interrelated and interdependent or interdependent actions" by establishing the following rule: Determining if an action is interrelated or interdependent depends on the "but for" test. Could the Federal, State, or private activity occur "but for" the proposed action?

The percentage of BLM lands in an allotment is a determining factor in whether grazing on non-BLM lands in an allotment is interrelated or interdependent to the proposed action. If the BLM administers a large percentage of the allotment, grazing on the non-Federal portions might be conducted very differently or not at all if the BLM lands are not grazed. For instance, if BLM lands comprise one pasture in a three pasture rest-rotation grazing system, then if the pasture cannot be grazed, the non-Federal lands may be grazed under some other grazing system. These other grazing systems may have significantly different effects on listed species as compared to a three pasture system.

Determining on which allotments grazing on the non-Federal portions of the allotment is interrelated or interdependent would require an allotment by allotment analysis. Because of the large number of allotments under consultation and the programmatic nature of this biological opinion, such an analysis is not warranted. Instead, FWS assumes that the effects of grazing on the non-Federal portions of the allotments are interrelated and interdependent when the BLM lands exceed thirty percent of the total area within an allotment. Effects of livestock management actions outside of BLM lands in any allotments with less than thirty percent BLM land are considered cumulative effects.

STATUS OF THE SPECIES AND CRITICAL HABITAT

Southwestern willow flycatcher

The flycatcher was listed as endangered, without critical habitat on February 27, 1995 (60 FR 10694). Critical habitat was designated on October 19, 2005 (70 FR 6088). In response to a

lawsuit by the Center for Biological Diversity over our 2005 critical habitat rule, and on July 13, 2010, we agreed to redesignate critical habitat. The resulting settlement left the existing critical habitat designation from 2005 in effect until a final rule designating critical is complete. We proposed revised critical habitat designations on August 15, 2011 (76 FR 157), and expect to publish a final rule to designate revised critical habitat by July 31, 2012.

The southwestern willow flycatcher recovery plan (U.S. Fish and Wildlife Service 2002a) (RP) describes reasons for endangerment, flycatcher status, addresses recovery actions, includes detailed issue papers, and provides recovery goals. Recovery is based on reaching numerical and habitat related goals for each specific Management Unit (MU) established throughout the subspecies' range and establishing long-term conservation plans.

The southwestern willow flycatcher is a small grayish-green passerine bird (Family Tyrannidae) measuring approximately 5.75 inches. The song is a sneezy "fitz-bew" or a "fit-a-bew", the call is a repeated "whitt". It is one of four currently recognized willow flycatcher subspecies (Phillips 1948, Unitt 1987, Browning 1993). It is a neotropical migrant that breeds in the southwestern U.S. and migrates to Mexico, Central America, and possibly northern South America during the non-breeding season (Phillips 1948, Stiles and Skutch 1989, Peterson 1990, Ridgely and Tudor 1994, Howell and Webb 1995). The historical breeding range of the southwestern willow flycatcher included southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern Utah, extreme southern Nevada, and extreme northwestern Mexico (Sonora and Baja) (Unitt 1987).

The southwestern willow flycatcher breeds in dense riparian habitats from sea level in California to approximately 8,500 feet in Arizona and southwestern Colorado. Historical egg/nest collections and species' descriptions throughout its range describe the southwestern willow flycatcher's widespread use of willow (*Salix* spp.) for nesting (Phillips 1948, Phillips *et al.* 1964, Hubbard 1987, Unitt 1987, San Diego Natural History Museum 1995). Currently, southwestern willow flycatchers primarily use Geyer willow (*Salix geyeriana*), coyote willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), boxelder (*Acer negundo*), saltcedar (*Tamarix* sp.), Russian olive (*Elaeagnus angustifolio*), and live oak (*Quercus agrifolia*) for nesting. Other plant species less commonly used for nesting include: buttonbush (*Cephalanthus* sp.), black twinberry (*Lonicera involucrata*), cottonwood (*Populus* spp.), white alder (*Alnus rhombifolia*), blackberry (*Rubus ursinus*), and stinging nettle (*Urtica* spp.). Based on the diversity of plant species composition and complexity of habitat structure, four basic habitat types can be described for the southwestern willow flycatcher: monotypic willow, monotypic exotic, native broadleaf dominated, and mixed native/exotic (Sogge *et al.*1997).

The flycatcher's habitat is dynamic and can change rapidly: nesting habitat can grow out of suitability; saltcedar habitat can develop from seeds to suitability in five years; heavy runoff can remove/reduce habitat suitability in a day; or river channels, floodplain width, location, and vegetation density may change over time. The flycatcher's use of habitat in different successional stages may also be dynamic. For example, over-mature or young habitat not suitable for nest placement can be occupied and used for foraging and shelter by migrating, breeding, dispersing, or non-territorial southwestern willow flycatchers (McLeod *et al.* 2005, Cardinal and Paxton 2005). That same habitat may subsequently grow or cycle into habitat used for nest placement. Flycatcher habitat can quickly change and vary in suitability, location, use, and occupancy over

time (Finch and Stoleson 2000).

There are currently over 275 known southwestern willow flycatcher breeding sites in California, Nevada, Arizona, Utah, New Mexico, and Colorado (all sites from 1993 to 2008 where a territorial flycatcher has been detected) holding over an estimated 1,214 territories (see the latest rangewide status summary in the project file). It is difficult to arrive at a grand total of flycatcher territories as not all sites are surveyed annually. Numbers have increased since the bird was listed and some habitat remains unsurveyed; however, after nearly a decade of intense surveys, the existing numbers are just past the upper end of Unitt's (1987) estimate of 20 years ago (500-1000 pairs). About 50 percent of the 1,214 territories currently estimated throughout the subspecies' range are located at four general locations (Cliff/Gila Valley – New Mexico, Roosevelt Lake - Arizona, San Pedro River/Gila River confluence – Arizona, Middle Rio Grande, New Mexico).

Arizona distribution and abundance

While numbers have significantly increased in Arizona (145 to 495 territories from 1996 to 2005) (English *et al.* 2006), overall distribution of flycatchers throughout the state has not changed substantially. Currently, population stability in Arizona is believed to be largely dependent on the presence of two large populations (Roosevelt Lake and San Pedro/Gila River confluence). Therefore, the result of catastrophic events or losses of significant populations either in size or location could greatly change the status and survival of the bird. Conversely, expansion into new habitats or discovery of other populations would improve the known stability and status of the flycatcher.

Critical habitat

The primary constituent elements of critical habitat are based on riparian plant species, structure and quality of habitat, and insects for prey. A variety of river features such as broad floodplains, water, saturated soil, hydrologic regimes, elevated groundwater, fine sediments, etc. help develop and maintain these constituent elements. The primary constituent elements are:

1. Riparian habitat in a dynamic successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) that comprises:

    a. Trees and shrubs that include, but are not limited to, willow species, box elder, tamarisk, Russian olive, cottonwood, stinging nettle, alder, ash, poison hemlock, blackberry, oak, rose, false indigo, Pacific poison ivy, grape, Virginia creeper, Siberian elm, and walnut.

    b. Dense riparian vegetation with thickets of trees and shrubs ranging in height from 2 to 30 meters (6 to 98 feet). Lower-stature thickets (2 to 4 meters or 6 to 13 feet tall) are found at higher elevation riparian forests, and tall-stature thickets are found at middle- and lower-elevation riparian forests;

    c. Areas of dense riparian foliage, at least from the ground level up to approximately 4 meters (13 feet) above ground, or dense foliage only at the shrub level, or as a low, dense tree canopy;

d. Sites for nesting that contain a dense tree and/or shrub canopy (the amount of cover provided by tree and shrub branches measured from the ground) (i.e., a tree or shrub canopy with densities ranging from 50 percent to 100 percent); or

e. Dense patches of riparian forests that are interspersed with small openings of open water or marsh, or shorter/sparser vegetation that create a mosaic that is not uniformly dense. Patch size may be as small as 0.1 hectare (0.25 acre) or as large as 70 hectares (175 acres).

2. A variety of insect prey populations found within or adjacent to riparian floodplains or moist environments, including: flying ants, wasps, and bees; dragonflies; flies; true bugs; beetles; butterflies/moths and caterpillars; and spittlebugs.

A variety of river features such as broad floodplains, water, saturated soil, hydrologic regimes, elevated groundwater, fine sediments, etc. help develop and maintain these constituent elements.

Past consultations

Since listing in 1995, at least 160 Federal agency actions have undergone (or are currently under) formal section 7 consultation throughout the flycatcher's range. A list of these activities can be found in the administrative record for this consultation. Many activities continue to adversely affect the distribution and extent of all stages of flycatcher habitat throughout its range (e.g. development, urbanization, grazing, recreation, native and non-native habitat removal, dam operations, river crossings, ground and surface water extraction, etc.).

New Mexico ridge-nosed rattlesnake

We listed the New Mexico ridge-nosed rattlesnake (*Crotalus willardi obscurus*) as a threatened species on August 4, 1978 (43 FR 34476). Critical habitat was also designated in Bear, Spring, and Indian canyons of the Animas Mountains from 6,048 to 8,320 feet elevation. The species has a very limited range and is threatened by habitat destruction and alteration, and collecting. At the time of listing, this subspecies was not known to occur in the Peloncillo Mountains that lie across the border of New Mexico and Arizona, but it has since been found in the range.

The New Mexico ridge-nosed rattlesnake is a small (maximum of 2.19 feet (0.67 meters) total length) montane species known only from the Animas Mountains, Hidalgo County, New Mexico; Peloncillo Mountains, Hidalgo County, and Cochise County, Arizona; and the Sierra San Luis, Sonora and Chihuahua, Mexico (Campbell *et al.* 1989, Painter 1995, Degenhardt *et al.* 1986, Keegan *et al.* 1999). *Crotalus willardi obscurus* is one of five subspecies of the ridge-nosed rattlesnake found from montane areas of southeastern Arizona and southwestern New Mexico, south through the Sierra Madre Occidental to Zacatecas, Mexico.

Crotalus willardi obscurus is an inhabitant of insular woodlands that were more widespread and continuous during Pleistocene glaciation events (Maldonado-Koerdell 1964, Barker 1992, Van Devender 1995). *Crotalus willardi obscurus* has been found in steep, rocky canyons with intermittent streams or on talus slopes at elevations ranging from approximately 5,200-8,500 feet (Campbell *et al.* 1989, Barker 1991, Painter 1995, Degenhardt *et al.* 1986, A. Holycross, Arizona State University, pers. comm., 1997), and likely occurs as low as 5,000 feet in the Peloncillo

Mountains (Holycross 1999). Geographic isolation, genetic divergence, and ecological non-exchangeability define evolutionary significant units (ESUs) in a threatened sky-island rattlesnake. Holycross and Douglas (2007) used molecular genetics to examine connectivity among the three disjunct populations of New Mexico ridge-nose rattlesnake. Data supported a hypothesis of northward range expansion from Mexico followed by isolation on sky island mountain ranges as the climate warmed and dried out. The Peloncillo population was found to be especially bottlenecked, apparently occurs in low density, and is ecologically quite different from the Animas and Sierra San Luis populations in regard to habitat use as well as diet. The authors label the Peloncillo population as an ESU, with the Animas and San Luis populations comprising management units of a second ESU.

Because of the small and disjunct nature of the populations, the subspecies is sensitive to habitat destruction or modification, and collection. U.S. Fish and Wildlife Service (1985) estimated that as many as 130 New Mexico ridge-nosed rattlesnakes may have been collected in the Animas Mountains between 1961 and 1974. Collection during this period may have significantly affected the Animas population (Harris and Simmons 1976, U.S. Fish and Wildlife Service 1985). The Animas Mountains are largely privately owned, access to habitat areas is now strictly controlled, and the C. w. obscurus population there is now protected from collection. The majority of the subspecies' suitable habitat in the Peloncillo Mountains is managed by the Coronado National Forest and the BLM and is open to public use, providing greater opportunities for illegal collection.

Holycross et al. (2002) stated that preservation of encinal and pine-oak woodlands and associated faunal communities is essential to the conservation of the New Mexico ridge-nosed rattlesnake. Fire, combined with climate change that drives declining forest health and susceptibility to fire (van Mantgem et al. 2009), is the most important threat to the subspecies and its woodland habitat (Smith et al. 2001, Barker 1991). Large, high intensity, stand-replacing fire occurred in the snake's habitat in the Animas Mountains in 1989 (Swetnam and Baisan 1996) and in the Sierra San Luis in 1989 (Barker 1991) and before 1952 (Marshall 1957). The 1997 escaped Maverick prescribed fire in the Peloncillo Mountains burned woodlands at high intensities in two of the 12 areas where C. w. obscurus had been observed in that mountain range. The 2003 Baker prescribed burn took place in the southeastern headwater areas of Sycamore Creek, the northwestern and northeastern headwater areas of Guadalupe Canyon, and the northeastern aspects of the Guadalupe Mountains. The Coronado National Forest estimated that approximately 54 percent of the 47,528-acre project area burned to some degree (CNF 2004). Approximately 105 acres (2 percent) of the approximately 5,000 acres of New Mexico ridge-nosed rattlesnake habitat ranked as 3 and 4 in the Peloncillo Mountains burned at a high intensity. Consultation on the Peloncillo Programmatic Fire Management Plan on the Coronado National Forest (#02-21-04-F-0474) was completed in 2005. This plan includes the use of wildland fire and prescribed burns in the Peloncillo Mountains on Forest Service lands. Other recent fires include the Adobe fire in the Animas Mountains, 2007, and the Whitmire fire, 2008, in the Peloncillo Mountains. The Adobe wildfire burned through designated critical habitat for this species, with much of the area in Indian Creek being subjected to high-severity fire effects. Much of the riparian and pine woodland overstory in Indian Creek was lost to this wildfire. Areas in Bear and Spring canyons appear to have been similarly affected, but an evaluation has not occurred. Several occupied talus slides in Indian Creek were partially buried in sediment and ash during post-fire runoff events. A total of 3,990 acres were burned by the Whitmire fire in the Peloncillo Mountains. The fire burned through part of three polygons of

core New Mexico ridge-nosed rattlesnake habitat identified by Smith *et al.* (2001). Preliminary analysis indicated that the fire effects were low and the upper canopy in the core habitat polygons was not impacted.

Overgrazing can result in negative effects for the subspecies (U.S. Fish and Wildlife Service 1985) due to reduction in snake hiding cover and prey cover, and habitat reduction and alteration. In addition, mining, commercial and recreational development, and logging practices remain potential threats (U.S. Fish and Wildlife Service 1985). J. Jarchow [pers. comm. in Johnson (1983)] found that *C. w. willardi* suffers from a variety of diseases and pathogenic organisms; however, there is no evidence documented that shows ridge-nosed rattlesnake populations are threatened by disease (U.S. Fish and Wildlife Service 1985). Relatively small litter size and long female reproductive cycles suggest that New Mexico ridge-nosed rattlesnake populations are not capable of rapid growth, making them particularly sensitive to factors causing population decline (Holycross 2001, Holycross and Goldberg 2001).

Further information on the taxonomy, range, distribution, biology, and threats to the New Mexico ridge-nosed rattlesnake can be found in Applegarth (1980), Barker (1992, 1991), Campbell *et al.* (1989), Degenhardt (1972), Degenhardt *et al.* (1986), Johnson (1983), Painter (1995), Holycross (2000, 1998, 1996, 1995a & b), Holycross and Douglas (1997, 2007), Holycross and Goldberg (2001), Smith *et al.* (2001), Ernst and Ernst (2003).

Critical Habitat

Critical habitat for the New Mexico ridge-nosed rattlesnake was designated concurrently with listing and consists of Bear, Spring, and Indian canyons in the Animas Mountains between 6,048 ft (1,844 m) and 8,320 ft (2,536 m) in elevation (43 FR 34479). The critical habitat primary constituent elements for the New Mexico ridge-nosed rattlesnake are:

• Dens are available which provide winter and summer retreats,

• Vegetation provides cover, and

• Lizards and rodents are abundant in the area and provide an adequate source of food items.

Activities that would impact designated critical habitat for the New Mexico ridge-nosed rattlesnake are not identified in the final designation, but activities that impact these constituent elements would include, but are not limited to; high-severity wildfire, excessive erosion and sedimentation into talus slides, and use of pesticides that may impact the forage base for this species.

Desert pupfish

The desert pupfish was listed as an endangered species with critical habitat in 1986 (51 FR 10842). Critical habitat was designated in Arizona at Quitobaquito Springs in Pima County and in California along parts of San Felipe Creek, Carrizo Wash, and Fish Creek Wash. Historical distribution of desert pupfish in Arizona included the Gila, San Pedro, Salt, and Santa Cruz rivers, and likely the Hassayampa, Verde, and Aqua Fria rivers, although collections are lacking for the

latter three. The desert pupfish is also found in the Lower Colorado River, Rio Sonoyta basin, Salton Sink basin, and Laguna Salada basin (Eigenmann and Eigenmann 1888, Garman 1895, Gilbert and Scofield 1898, Evermann 1916, Miller 1943, Minckley 1980, Black 1980, Turner 1983, Miller and Fuiman 1987).

One or more threats imperil most natural and transplanted populations. Since the 19th century, desert pupfish habitat has been steadily altered by stream bank erosion, the construction of water impoundments that dewatered downstream habitat, excessive groundwater pumping, the application of pesticides to nearby agricultural areas, and the introduction of non-native fish species. The non-native bullfrog occurs in parts of the desert pupfish's range. It is an opportunistic omnivore with a diet that includes fish. Introduced salt cedar (*Tamarix* spp.), a high water use, non-native plant, occurring in proximity to pupfish habitat may cause a lack of water at critical times. The remaining populations continue to face these threats, and the Salton Sea area populations, in particular, are severely threatened. The entire range of the species in Arizona is covered by a Safe Harbor Agreement, which we anticipate will facilitate establishment of populations on non-Federal lands.

Additional life history information can be found in the recovery plan (U.S. Fish and Wildlife Service 1993) and other references cited there. Our records indicate that in Arizona, 37 formal conferences or consultations have been completed for actions affecting desert pupfish.

Critical Habitat

Critical habitat was designated for the desert pupfish at Quitobaquito Spring, Organ Pipe Cactus National Monument, Pima County, Arizona; and along portions of San Felipe Creek, Carrizo Wash, and Fish Creek Wash, Imperial County, California. These areas provide the PCEs necessary to maintain pupfish, including adequate food and cover, and are at least partially isolated from predatory and competing exotic fishes.

Gila chub

We listed the Gila chub as endangered with critical habitat on November 2, 2005 (70 FR 66664). Historically, Gila chub were recorded from rivers, streams, and spring-fed tributaries throughout the Gila River basin in southwestern New Mexico, central and southeastern Arizona, and northern Sonora, Mexico (Miller and Lowe 1967, Minckley 1973, Rinne 1976, DeMarais 1986, Propst 1999, and Weedman *et al.* 1996). Today the Gila chub is restricted to small, isolated populations scattered throughout its historical range. Critical habitat includes approximately 160 miles of stream reaches in Arizona and New Mexico, organized into seven river units.

Decline of Gila chub is due to habitat loss from past and current dewatering of rivers, springs, and cienegas (e.g. from diversions, impoundments, and groundwater pumping), poor land management practices (e.g. excessive livestock grazing) resulting in erosion and arroyo formation, and the concomitant introduction of predacious and competing non-indigenous fish species (Miller 1961, Minckley 1985). Life history information can be found in the status review (Weedman *et al.* 1996), the final rule, and references cited therein.

The Gila chub is a small-finned, deep-bodied, chunky, darkly colored member of the minnow family Cyprinidae. Adult males average about six inches in total length; females can exceed eight inches. Gila chub commonly inhabit pools in smaller streams, springs, and cienegas, and can survive in small artificial impoundments (Miller 1946, Minckley 1973, Rinne 1975). Highly secretive, preferring quiet, deeper waters, especially pools, or remaining near cover like undercut banks, terrestrial vegetation, boulders, and fallen logs, they feed on large and small aquatic and terrestrial invertebrates and sometimes other small fishes, organic debris, aquatic plants, and diatoms (Rinne and Minckley 1991).

Gila chub occur in New Mexico only in Turkey Creek (Grant County); in Arizona, they occur in Indian, Larry, Little Sycamore, Silver, Spring, Sycamore, and Walker creeks, Lousy Canyon, Williamson Valley Wash, and Red Tank Draw (Yavapai County), Sabino Canyon (Pima County), Sheehy Spring and O'Donnell Creek (Santa Cruz County), Cienega Creek (Pima and Santa Cruz counties), Redfield, Hot Springs, and Bass canyons (Graham and Cochise counties), Babocomari River (Santa Cruz and Cochise counties), the San Carlos and Blue rivers (Gila and Graham counties), Harden Cienega and Dix Creek, (Greenlee County), Eagle Creek (Graham and Greenlee counties), and Bonita Creek (Graham County); and in Mexico, Gila chub occur or occurred in Cienega los Fresnos and Cienega la Cieneguita at Rancho Los Fresnos, Sonora (Varela-Romero *et al.* 1992, Weedman *et al.* 1996).

Most known extant Gila chub populations are small. Only one, in Cienega Creek, is considered stable and secure; about two thirds are considered stable but threatened, and a third are unstable and threatened (Weedman *et al.* 1996). Reestablishment of Gila chub has been attempted in three Arizona sites; two are believed to be extant, in Lousy Canyon and Larry Creek, which are tributaries to the Agua Fria River.

Our records indicate that, rangewide, approximately twenty informal or formal conferences or consultations have been completed or are underway for actions affecting Gila chub.

Critical Habitat

Critical habitat for Gila chub includes about 163 mi (262 km) of stream reaches in Arizona and New Mexico (70 FR 66664). When we designated critical habitat, we determined the primary constituent elements for Gila chub. Constituent elements include those habitat features required for the physiological, behavioral, and ecological needs of the species. For Gila chub, these include:

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

2) Water temperatures for spawning ranging from 63 to 75 °F (17-24 °C), and seasonally appropriate temperatures for all life stages (varying from about 50 to 86 °F [10 °C to 30 °C]);

3) Water quality with reduced levels of contaminants, including excessive levels of sediments adverse to Gila chub health, and adequate levels of pH (e.g. ranging from 6.5-9.5), dissolved oxygen (e.g. ranging from 3.0-10.0 ppm) and conductivity (e.g. 100-1000 mmhos);

4) Food base consisting of base consisting of invertebrates (e.g. aquatic and terrestrial insects) and

aquatic plants (e.g. diatoms and filamentous green algae);

5) Sufficient cover consisting of downed logs in the water channel, submerged aquatic vegetation, submerged large tree root wads, undercut banks with sufficient overhanging vegetation, large rocks and boulders with overhangs, a high degree of streambank stability, and a healthy, intact riparian vegetation community;

6) Habitat devoid of nonindigenous aquatic species detrimental to Gila chub or habitat in which detrimental nonindigenous species are kept at a level that allows Gila chub to continue to survive and reproduce; and

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

Gila topminnow

The Gila topminnow was listed as endangered in 1967 without critical habitat (32 FR 4001). Only Gila topminnow populations in the United States, and not in Mexico, are listed under the ESA. The reasons for decline of this fish include past dewatering of rivers, springs and marshlands; impoundment, channelization, diversion, and regulation of flow; land management practices that promote erosion and arroyo formation; and the introduction of predacious and competing non-indigenous fishes (Miller 1961, Minckley 1985). Other listed fish suffer from the same impacts (Moyle and Williams 1990). Life history information can be found in the 1984 recovery plan (U.S. Fish and Wildlife Service 1984a), the draft revised Gila topminnow recovery plan (Weedman 1999), and references cited in the plans.

The status of Gila topminnow has changed little since our February 11, 2008, Intra-Service Biological and Conference Opinion on Issuance of an Enhancement of Survival Permit (TE-083686-0) to the AGFD (file number 22410-2003-F-0022). We hereby incorporate by reference the Status of the Species section of that biological opinion. For additional information about the Gila topminnow see the previously listed citations and Voeltz and Bettaso (2003). Our records indicate that, rangewide, 72 formal conferences or consultations have been completed for actions affecting Gila topminnow.

Little Colorado spinedace

The Little Colorado spinedace was listed as threatened with critical habitat designated on October 16, 1987 (52 FR 35034). Threats were identified as habitat alteration and destruction, predation by and competition with non-native aquatic organisms, and recreational fishery management. A complete discussion of the taxonomic, distributional, and life history information of the spinedace has been compiled in the Little Colorado Spinedace Recovery Plan (U.S. Fish and Wildlife Service 1998a).

The spinedace is a small (about 4 inches) minnow native to the Little Colorado River (LCR) drainage. This fish occurs in disjunct populations throughout much of the LCR drainage in Apache, Coconino, and Navajo counties. Extensive collections summarized by Miller (1963) indicated that the spinedace had been extirpated from much of its historical range from 1939 to 1960. Although few collections were made of the species prior to 1939, the species is believed to

have inhabited the northward flowing LCR tributaries of the Mogollon Rim, including the northern slopes of the White Mountains.

As would be expected for a species adapted to fluctuating physical conditions, the spinedace is found in a variety of habitats (Miller and Hubbs 1960, Miller 1963, Nisselson and Blinn 1989, Blinn and Runck 1990). It is unclear whether occupancy of these habitats reflects the local preferences of the species or its ability to tolerate less-than-optimal conditions. Available information indicates that suitable habitat for the Little Colorado spinedace is characterized by clear, flowing pools with slow to moderate currents, moderate depths, and gravel substrates (Miller 1963, Minckley and Carufel 1967). Cover provided by undercut banks or large rocks is often a feature of spinedace habitat. Spinedace have also been found in pools and flowing water conditions over a variety of substrates, with or without aquatic vegetation, in turbid and clear water (Nisselson and Blinn 1991, Denova and Abarca 1992). Water temperatures in occupied habitats ranged from 58 to 78 degrees Fahrenheit (Miller 1963). Miller (1963) called the spinedace "trout like" in behavior and habitat requirements, and it is likely that prior to 1900 the spinedace used habitats now dominated by non-native salmonids.

As with most aquatic communities in the southwest, the LCR basin contains a variety of aquatic habitat types and is prone to rather severe seasonal and yearly fluctuations in water quality and quantity. Both mountain streams and lower-gradient streams and rivers have provided habitat for the spinedace. Residual pools and spring areas are important refuges during periods of normal low water or drought. From these refuges, spinedace are able to recolonize other stream reaches during wetter periods. This ability to quickly colonize an area has been noted in the literature (Minckley and Carufel 1967) as well as in observations by others familiar with the species. Populations seem to appear and disappear over short time frames and this has made specific determinations on status and exact location of populations difficult. This tendency has been observed by both researchers and land managers (Miller 1963, Minckley 1965, Minckley 1973) and has led to concerns for the species' survival.

Factors affecting spinedace habitat include livestock grazing, water diversions and groundwater pumping, water quality, competition and predation from non-native fishes and crayfish, and drought. These factors are not unique to the LCR drainage, but are extremely widespread throughout the LCR main stem and in Silver and Chevelon creeks. Livestock grazing can have direct effects through trampling of vegetation, increased sedimentation, and harming individual fish in the riparian areas. Livestock grazing could have indirect effects through affecting the condition of the uplands that may increase sedimentation in the river through erosion, and through the presence of livestock water sources that may contain non-native animals that could move downstream during rain events.

Native fishes associated with spinedace include speckled dace (*Rhinichthys osculus*), bluehead sucker (*Pantosteus discobolus*), Little Colorado sucker (*Catostomus* sp.), roundtail chub (*Gila robusta*), and Apache trout (*Oncorhynchus gilae apache*) (U.S. Fish and Wildlife Service 1998a). The list of non-native fishes is much larger and includes species with varying degrees of incompatibility with the spinedace's long-term survival. The presence of non-natives was one of the primary reasons the species was listed, and may contribute to the disjunct distributional patterns observed and the spinedace's retreat to what may be suboptimal habitats. Non-native fish may compete with, prey upon, and harass native fishes, and alter their habitats. In the last 100

years, at least ten non-native fish species have been introduced into spinedace habitats. These include rainbow trout (*Oncorhynchus mykiss*), fathead minnow (*Pimephales promelas*), and golden shiner (*Notemigonus crysoleucus*). Surveys in East Clear Creek have documented the presence of these three non-native species and brown trout (*Salmo trutta*) in the watershed (Denova and Abarca 1992). Data from research experiments and field observations indicate that at least the rainbow trout is a predator and potential competitor with the spinedace (Blinn *et al*. 1993).

The spinedace is assumed to still occupy the watersheds it is known from historically (Chevelon, Silver, Nutrioso, East Clear Creek, and the LCR proper). Populations are generally small and the true population size for any occupied stream is unknown due to the yearly fluctuations and difficulty in locating fish. Spinedace have a tendency to disappear from sampling sites from one year to the next and may not be found for several years. This ephemeral nature makes management of the species difficult because responses of the population to changes within the watershed cannot be measured with certainty. However, all of the known populations have decreased since 1993 and drought conditions continue to put additional strain on all known populations.

The most recent survey and habitat data for each watershed are indicated below:

East Clear Creek Watershed: Spinedace currently occupy small, perennial pool habitats in West Leonard Canyon, Leonard Canyon (including Dines Tank), Bear Canyon, Dane Canyon, and Yeager Canyon. The populations and available habitat are all relatively small throughout the watershed, but West Leonard and Leonard canyons continue to be one of the most dependable locations to find spinedace in the entire watershed. The Bear, Dane, and Yeager canyon populations are sustained by moving spinedace from West Leonard Canyon and Dines Tank to these areas.

In October 2007, non-native green sunfish (*Lepomis cyanellus*) (multiple size classes), largemouth bass (*Micropterus salmoides*), and yellow bullhead (*Ameiurus natalis*) were detected near the boat ramp and in the Bear Canyon arm of the C.C. Cragin (Blue Ridge) Reservoir. These non-native species had not been located here prior to this time and if they were to access the above drainages, these predatory fishes could completely derail recovery efforts in the watershed. High-flow events during the winter of 2007-2008 could have allowed these fish to spread up- and downstream of these locations. However, surveys conducted to date in 2008 have not located these non-native fishes upstream of the reservoir. Currently Bear Canyon is the only occupied habitat located upstream of C.C. Cragin Reservoir. However, efforts will be made to stock spinedace in Miller and Kehl canyons, which are also located upstream of the reservoir.

Chevelon Creek Watershed: Currently, spinedace occupy a section of Chevelon Creek, several miles upstream of Chevelon Creek's confluence with the LCR on the privately owned Rock Art Ranch. Chevelon Creek through the Ranch supports robust populations of spinedace, where large schools of fish (40-50 individuals) can be seen swimming in pools downstream of The Steps, something not seen in any other currently occupied area (Lopez *et al.* 1998).

On July 23, 2007, AGFD stocked 95 spinedace into five pools on West Chevelon Creek on the Apache-Sitgreaves National Forest. This tributary to middle Chevelon Creek contains only native

fish at this time and is expected to provide habitat for spinedace. In July 2008, surveys located spinedace within the perennial pools where they were originally stocked and downstream of the area in ephemeral reaches. It is unclear how many fish are still present or if they spawned in 2008. Further surveys and stockings of this area are needed in order to ensure that spinedace persist in this Chevelon Creek tributary if it is to contribute to recovery.

There are non-native species present throughout this reach, but green sunfish and crayfish, both predators of spinedace, were found to be uncommon in areas where spinedace numbers were highest (Lopez *et al.* 1998). However, AGFD has reported that largemouth bass appear to be increasing in abundance above The Steps. At this time, the distribution and abundance of largemouth bass in this reach and how that may be impacting spinedace populations in the area is unknown. In addition, Willow Springs Lake, a reservoir located at the head of Chevelon Creek, contains a thriving population of smallmouth bass (*Micropterus dolomieu*). Though the smallmouth bass are currently located many miles upstream of known spinedace locations in Chevelon Creek, their occurrence and potential to move downstream are a threat to spinedace and other native fish in the drainage. The presence of these predatory, non-native fishes may adversely impact the future abundance and persistence of spinedace in Chevelon Creek.

Little Colorado River (including Nutrioso Creek and Rudd Creek): Spinedace are documented in the LCR from Springerville downstream to St. Johns, Arizona (Dorum and Young 1995). Spinedace occur on both the AGFD Wenima and Becker Wildlife Areas within this reach of the LCR in small to moderate numbers. The most recent survey efforts in July 2005 found 39 spinedace at Wenima and 92 spinedace at Becker Wildlife Area. Surveys conducted in 2008 by the AGFD and BLM also located spinedace above Lyman Lake in the LCR.

Spinedace have been located in middle Nutrioso Creek from the Apache-Sitgreaves Forest boundary upstream to Nelson Reservoir and from Nelson Reservoir upstream to Nutrioso, Arizona (Lopez *et al.* 2001a). Also, spinedace were first located in Rudd Creek in 1994 (Lopez *et al.* 2001b).

In the spring of 2005, AGFD personnel surveyed several 328-foot transects in Rudd and Nutrioso creeks. In Rudd Creek, only a single spinedace and a few speckled dace were captured. A total of seven spinedace were captured upstream of Nelson Reservoir in Nutrioso Creek. No spinedace were found below the reservoir, but many fathead minnow and green sunfish were captured. Surveys conducted in April 2006 in Nutrioso Creek located 128 spinedace upstream of Nelson Reservoir. The largest concentration of spinedace was found on the EC Bar Ranch. No spinedace were located downstream of Nelson Reservoir (in Nutrioso Creek) or in Rudd Creek. However, in June 2006, AGFD relocated 415 spinedace from a drying pool in Nutrioso Creek to a more permanent pool on the EC Bar Ranch, and relocated 74 spinedace to Rudd Creek. Surveys conducted in 2008 located spinedace above Nelson Reservoir, and above and below the gauging station on Nutrioso Creek. Spinedace were also located on lower Rudd Creek, below AGFD's property.

Silver Creek: As stated above, spinedace were thought to be extirpated from Silver Creek until a small number of fish were rediscovered in lower Silver Creek in July 1997 (Lopez *et al.* 1999). However, numerous surveys since then have failed to find spinedace, including an extensive survey in 2004 funded by a cooperative agreement with the BLM (McKell and Lopez 2005). It is

believed that changes to the habitat since 1997 have likely increased habitat for non-native fishes and impacted our ability to capture spinedace during surveys. If spinedace are still present in Silver Creek, it may be that they exist at such low numbers that our current sampling techniques are insufficient to detect them in this altered habitat.

In 1997, the habitat in Silver Creek consisted primarily of shallow riffle/run habitat with occasional relatively small pools. Starting in 1999 and continuing to the present, the same areas consist of almost exclusively deep, wide pool habitat due to extensive beaver dams. In addition, the extensive pool habitat, which extends for miles, has created prime habitat for non-native fish and crayfish. This change in habitat has made sampling the area extremely difficult. At this time, both the FWS and AGFD are hopeful that spinedace still exist in lower Silver Creek. However, the prognosis for spinedace recovery in Silver Creek is bleak at this time. The habitat is conducive to promoting non-native fish and crayfish and there are fewer and fewer native fish found within Silver Creek.

In addition to the above in-stream populations of spinedace, there are currently two refugial populations of spinedace. We have a refugial population of East Clear Creek spinedace located at the Flagstaff Arboretum and a refugial population of LCR spinedace at AGFD's Grasslands Property. We currently do not have a refugial population for the Chevelon Creek genetic sub-group, although we hope to have a captive population established at Winslow High School for the Chevelon Creek genetic sub-group in the near future.

Our information indicates 27 formal consultations have been completed or are underway for actions affecting Little Colorado spinedace rangewide. Adverse effects to Little Colorado spinedace have occurred due to these projects and many of these consultations have required reasonable and prudent measures to minimize effects of incidental take on Little Colorado spinedace. However, as is the case with many aquatic species, it is difficult, if not impossible, to quantify the actual incidental take of spinedace to date. The continued invasion of non-native aquatic species into spinedace habitat and the on-going reductions in surface water (due to both drought and groundwater pumping) are two of the greatest threats to the species and are contributing factors to the spinedace's overall decline. These threats are considered by the FWS sufficient to warrant a reclassification of spinedace as endangered (U.S. Fish and Wildlife Service 2008).

Critical Habitat

Forty-four stream miles of critical habitat were designated: 18 miles of East Clear Creek immediately upstream and 13 miles downstream from C.C. Cragin Reservoir (formerly called Blue Ridge Reservoir) in Coconino County; eight miles of Chevelon Creek in Navajo County; and five miles of Nutrioso Creek in Apache County. Constituent elements of critical habitat consist of clean, permanent flowing water with pools and a fine gravel or silt-mud substrate.

Loach minnow

Loach minnow was listed as a threatened species on October 28, 1986 (51 FR 39468). The status was changed to endangered and critical habitat was designated on February 23, 2012 (77 FR 10810) FR . Critical habitat designation includes portions and some tributaries of the Gila River

in eastern and central Arizona and western New Mexico. Loach minnow is endemic to the Gila River basin of Arizona and New Mexico within the United States, and Sonora, Mexico, where it was recorded only in the Rio San Pedro.

Loach minnow is a bottom-dwelling inhabitant of shallow, swift water over gravel, cobble, and rubble substrates (Rinne 1989, Propst and Bestgen 1991). Loach minnow uses the spaces between, and in the lee of, larger substrate for resting and spawning (Propst *et al*. 1988; Rinne 1989). It is rare or absent from habitats where fine sediments fill the interstitial spaces (Propst and Bestgen 1991). Some studies have indicated that the presence of filamentous algae may be an important component of loach minnow habitat (Barber and Minckley 1966). Loach minnow feeds exclusively on aquatic insects (Schrieber 1978, Abarca 1987). Loach minnow live two to three years with reproduction occurring primarily in the second summer of life (Minckley 1973, Sublette *et al*. 1990). Spawning occurs March through May (Britt 1982, Propst *et al*. 1988); however, under certain circumstances loach minnow also spawn in the autumn (Vives and Minckley 1990). The eggs of loach minnow are attached to the underside of a rock that forms the roof of a small cavity in the substrate on the downstream side. Limited data indicate that the male loach minnow may guard the nest during incubation (Propst *et al*. 1988, Vives and Minckley 1990).

Loach minnow is endemic to the Gila River basin of Arizona and New Mexico within the United States, and Sonora, Mexico, where it was recorded only in the Rio San Pedro. Historically, loach minnow in Arizona were found in the Salt River mainstem near and above the Phoenix area, the White River, East Fork White River, Verde River, Gila River, San Pedro River, Aravaipa Creek, San Francisco River, Blue River, and Eagle Creek, as well as some tributaries of these streams. In New Mexico, loach minnow historically occupied the Gila River including its West, Middle, and east Forks, the San Francisco River, the Tularosa River, and Dry Blue Creek (Minckley 1973, Minckley 1985).

Actions that may adversely affect the species can include road crossing construction and maintenance, livestock grazing, water withdrawals, contaminants, recreational activities, and non-native aquatic species. Our information indicates that approximately 275 consultations have been completed or are underway for actions affecting spikedace and loach minnow. The majority of these opinions concerned the effects of grazing, roads and bridges, or agency planning. Additional consultations dealt with timber harvest, fire, flooding, recreation, realty, animal stocking, water development, recovery (including loach minnow reintroduction efforts), and water quality issues.

The status of loach minnow is declining rangewide. Although it is currently listed as threatened, the FWS determined in 1994 that a petition to uplist the species to endangered status is warranted (59 FR 35303). The FWS confirmed this decision in 2000 (65 FR 24328). A reclassification proposal is pending; however, work on it is precluded due to work on other higher priority listing actions.

Critical Habitat

Critical habitat was designated for loach minnow in eight critical habitat units, which were based on sufficient primary constituent elements (PCEs) being present to support one or more of the species' life history functions. Some units contain all PCEs and support multiple life processes,

while some units contain only a portion of the PCEs necessary to support the species' particular use of that habitat. Where a subset of the PCEs was present at the time of designation, the critical habitat rule protects those PCEs and thus the conservation function of the habitat. The descriptions of the PCEs are:

1. Habitat to support all egg, larval, juvenile, and adult loach minnow. This habitat includes perennial flows with a stream depth of generally less than 1 m (3.3 ft), and with slow to swift flow velocities between 0 and 80 cm per second (0.0 and 31.5 in. per second). Appropriate microhabitat types include pools, runs, riffles, and rapids over sand, gravel, cobble, and rubble substrates with low or moderate amounts of fine sediment and substrate embeddedness. Appropriate habitats have a low stream gradient of less than 2.5 percent and are at elevations below 2,500 m (8,202 ft). Water temperatures should be in the general range of 8.0 to 25.0 °C (46.4 to 77 °F).
2. An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddis flies, stoneflies, and dragonflies.
3. Streams with no or no more than low levels of pollutants.
4. Perennial flows or interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.
5. No nonnative aquatic species, or levels of nonnative aquatic species that are sufficiently low to allow persistence of loach minnow.
6. Streams with a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of transporting sediments.

Refer to the federal register notice for specific information about designated loach minnow critical habitat (FRN 77(36):10810), and the 1997 BO and the BA for additional information on loach minnow status.

Spikedace

Spikedace was listed as a threatened species on July 1, 1986 (51 FR 23769). The status was changed to endangered and critical habitat was designated on February 23, 1012 (77 FR 10810). Critical habitat designation includes portions and some tributaries of the Gila River in eastern and central Arizona and western New Mexico.
Spikedace live in flowing water with slow to moderate velocities over sand, gravel, and cobble substrates (Propst *et al*. 1986, Rinne and Kroeger 1988). Specific habitat for this species consists of shear zones where rapid flow borders slower flow, areas of sheet flow at the upper ends of mid-channel sand/gravel bars, and eddies at the downstream riffle edges (Propst *et al*. 1986).
Spikedace spawn from March through May with some yearly and geographic variation (Barber *et al*. 1970, Anderson 1978, Propst *et al*. 1986). Actual spawning has not been observed in the wild, but spawning behavior and captive studies indicate eggs are laid over gravel and cobble where they adhere to the substrate. Spikedace live about two years with reproduction occurring primarily in one-year old fish (Barber *et al*. 1970, Anderson 1978, Propst *et al*. 1986). It feeds primarily on

aquatic and terrestrial insects (Schreiber 1978, Barber and Minckley 1983, Marsh *et al*. 1989).

Actions that may adversely affect the species can include road crossing construction and maintenance, livestock grazing, water withdrawals, contaminants, recreational activities, and non-native aquatic species. Our information indicates that approximately 275 consultations have been completed or are underway for actions affecting spikedace and loach minnow. The majority of these opinions concerned the effects of grazing, roads and bridges, or agency planning. Additional consultations dealt with timber harvest, fire, flooding, recreation, realty, animal stocking, water development, recovery (including spikedace reintroduction efforts), and water quality issues (U.S. Fish and Wildlife Service 2001).

The status of spikedace is declining rangewide. Although it is currently listed as threatened, the FWS determined in 1994 that a petition to uplist the species to endangered status is warranted (59 FR 35303). The FWS confirmed this decision in 2000 (65 FR 24328). A reclassification proposal is pending, however, work on this decision is precluded due to work on other higher priority listing actions.

Critical Habitat

Critical habitat was designated for spikedace in eight critical habitat units, which were based on sufficient primary constituent elements (PCEs) being present to support one or more of the species' life history functions. Some units contain all PCEs and support multiple life processes, while some units contain only a portion of the PCEs necessary to support the species' particular use of that habitat. Where a subset of the PCEs was present at the time of designation, the critical habitat rule protects those PCEs and thus the conservation function of the habitat. The description of the PCEs is:

1. Habitat to support all egg, larval, juvenile, and adult spikedace. This habitat includes perennial flows with a stream depth of generally less than 1 m (3.3 ft), and with slow to swift flow velocities between 5 and 80 cm per second (1.9 and 31.5 in. per second). Appropriate stream microhabitat types including glides, runs, riffles, the margins of pools and eddies, and backwater components over sand, gravel, and cobble substrates with low or moderate amounts of fine sediment and substrate embeddedness. Appropriate stream habitat with a low gradient of less than 1.0 percent, at elevations below 2,100 m (6,890 ft). Water temperatures in the general range of 8.0 to 28.0 °C (46.4 to 82.4 °F).
2. An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddis flies, stoneflies, and dragonflies.
3. Streams with no or no more than low levels of pollutants.
4. Perennial flows or interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.
5. No nonnative aquatic species or levels of nonnative aquatic species that are sufficiently low to allow persistence of loach minnow.

6. Streams with a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of transporting sediments.

Refer to the Federal Register notice for specific information about designated spikedace critical habitat (FRN 77(36):10810), and the 1997 BO and the BA for additional information on spikedace status.

Razorback sucker

We listed the razorback sucker (sucker) as an endangered species on October 23, 1991 (56 FR 54957) and designated critical habitat for this species on March 21, 1994 (59 FR 10898). The Razorback Sucker Recovery Plan was completed in 1998 (U.S. Fish and Wildlife Service 1998b) and recovery goals were updated in 2002 (U.S. Fish and Wildlife Service 2002b). Critical habitat includes portions of the Colorado, Duchesne, Green, Gunnison, San Juan, White, and Yampa rivers in the Upper Colorado River Basin, and the Colorado, Gila, Salt, and Verde rivers in the Lower Colorado River Basin.

The sucker was once abundant in the Colorado River and its major tributaries throughout the Basin, occupying 3,500 miles of river in the United States and Mexico. Loss of habitat, due to alteration of natural flows; changes to temperature and sediment regimes, and introduction of non-native fishes that prey on sucker eggs, fry, and juveniles, are the primary threats to the species. Recruitment into the adult population has been virtually eliminated in most areas.

Adult suckers use most of the available riverine habitats, although there may be an avoidance of whitewater type habitats. Studies conducted in the Upper Colorado River basin indicate that adult habitat selection changes seasonally. Adults move into pools and slow eddies from November through April; use runs and backwaters during May; use backwaters, eddies, and flooded gravel pits during June; and use runs and pools from July through October. In early spring, adults also may use flooded bottomlands. They use relatively shallow water (about 3 feet deep) during spring and deeper water (5-6 feet deep) during winter. Habitat needs of larval and juvenile sucker are reasonably well known. In reservoirs, larvae are found in shallow backwater coves or inlets (U.S. Fish and Wildlife Service 1998b). In riverine habitats, larvae and juveniles are typically captured in backwaters, creek mouths, and wetlands. These environments provide quiet, warm water where there is a potential for increased food availability. During higher flows, flooded bottomland and tributary mouths may provide these types of habitats, as well.

Critical Habitat

Critical habitat was designated in the 100-year floodplain portions of the Colorado, Duchesne, Green, Gunnison, San Juan, White, and Yampa rivers in the Upper Colorado River Basin; and the Colorado, Gila, Salt, and Verde rivers in the Lower Colorado River Basin. All critical habitat reaches were considered to be occupied by the species at the time of designation. The primary constituent elements identified in the final rule as necessary for the survival and recovery of the sucker include, but are not limited to, the habitat components that provide the following:

Water: This includes a quantity of water of sufficient quality (i.e. temperature, dissolved oxygen, lack of contaminants, nutrients, turbidity, etc) that is delivered to a specific location in accordance with a hydrologic regime that is required for a particular life stage.

Physical Habitat: This includes areas of the Colorado River system that are inhabited or potentially habitable by fish for use for spawning, nursery, feeding, and rearing; or corridors between these areas. In addition to river channels, these areas also include bottomlands, side channels, secondary channels, oxbows, backwaters, and other areas in the 100-year flood plain, which when inundated provide spawning, nursery, feeding and rearing habitats; or access to these habitats.

Biological Environment: Food supply, predation, and competition are important elements of the biological environment. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to the introduced non-native fish species in many areas.

Refer to the 1997 BO, BA, and the final rules to list and to designate critical habitat for more status information.

Huachuca water umbel

The Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*) (umbel) is an herbaceous, semi-aquatic to occasionally fully aquatic, perennial plant with slender, erect leaves that grow from creeping rhizomes. The leaves are cylindrical, hollow with no pith, and have septa (thin partitions) at regular intervals. The yellow/green or bright green leaves are generally 0.04 to 0.12 inch in diameter and often 1 to 2 inches tall, but can reach up to 8 inches tall under favorable conditions. Three to ten very small flowers are borne on an umbel that is always shorter than the leaves. The fruits are globose, 0.06 to 0.08 inch in diameter, and usually slightly longer than wide (Affolter 1985).

On January 6, 1997, we listed the umbel as an endangered species (62 FR 665). Critical habitat was designated on the upper San Pedro River, Garden Canyon on Fort Huachuca, Scotia Canyon and other areas of the Huachuca Mountains, the San Rafael Valley, and Sonoita Creek on July 12, 1999 (64 FR 37441). No recovery plan has been developed, but a draft recovery plan is anticipated to be complete in 2013.

Distribution/Abundance

Umbel has been documented from sites in Santa Cruz, Cochise, and Pima counties, Arizona, and in adjacent Sonora, Mexico, west of the continental divide (Haas and Frye 1997, Saucedo-Monarque 1990, Warren *et al.* 1989, Warren *et al.* 1991, Warren and Reichenbacher 1991, Anderson 2006). The plant has been extirpated from six sites. The extant sites occur primarily in five major watersheds - San Pedro River, Santa Cruz River, Río Yaqui/Bavispe, Río Sonora, and Río Magdalena. All sites are between 3,500 and 7,250 feet in elevation.

Habitat

The umbel grows in cienegas (marshy wetlands), and along streams, rivers, and springs in southeastern Arizona and northeastern Sonora, Mexico, typically in mid-elevation wetland communities often surrounded by relatively arid environments. These wetland communities are usually associated with perennial springs and stream headwaters, have permanently or seasonally saturated highly organic soils, and have a low probability of flooding or scouring (Hendrickson and Minckley 1984). The water umbel can grow in saturated soils or as an emergent in water depths up to about 10 inches. Cienegas support diverse assemblages of animals and plants, of which many species are of limited distribution, such as the umbel (Hendrickson and Minckley 1984). The surrounding non-wetland vegetation can be desert scrub, grassland, oak woodland, or conifer forest (Arizona Game and Fish Department 1997).

Umbel has an opportunistic strategy that ensures its survival in healthy riverine systems, cienegas, and springs. In upper watersheds that generally do not experience scouring floods, umbel occurs in microsites where interspecific plant competition is low. At these sites, umbel occurs on wetted soils interspersed with other plants at low density, along the periphery of the wetted channel, or in small openings in the understory. In stream and river habitats, umbel can occur in backwaters, side channels, and nearby springs. The upper Santa Cruz River and associated springs in the San Rafael Valley, where a population of umbel occurs, is an example of a site that meets these conditions. The types of microsites required by umbel were generally lost from the main stems of the San Pedro and Santa Cruz rivers when channel entrenchment occurred in the late 1800s. Habitat on the upper San Pedro River is recovering, and umbel has recently recolonized small reaches of the main channel.

Cienegas, perennial streams, and rivers in the desert southwest are extremely rare. The Arizona Game and Fish Department (1993) estimated that riparian vegetation associated with perennial streams comprises about 0.4% of the total land area of Arizona, with present riparian areas being remnants of what once existed. The State of Arizona (1990) estimated that up to 90% of the riparian habitat along Arizona's major desert watercourses has been lost, degraded, or altered.

The physical and biological habitat features essential to the conservation of umbel include a riparian plant community that is fairly stable over time and not dominated by non-native plant species, a stream channel that is relatively stable but subject to periodic, non-scouring flooding, refugial sites (sites safe from catastrophic flooding), and a substrate (soil) that is permanently wet or nearly so, for growth and reproduction of the plant.

Life History

The umbel flowers from March through October with most flowering in June through August (Arizona Game and Fish Department 1997). The species reproduces sexually through flowering and asexually from rhizomes, the latter probably being the primary reproductive mode. The umbel is also suspected of self-pollination (Johnson *et al.* 1992). An additional dispersal opportunity occurs as a result of the dislodging of clumps of plants, which then may re-root in a different site along aquatic systems. Fruits develop from July through September, and water disperses the seeds (Arizona Game and Fish Department 1997). Seeds from plants grown in an aquarium have been seen sticking to the aquarium sides and germinating 1-2 weeks after falling from the parent plant

(Johnson *et al.* 1992).

After a flood, umbel can rapidly expand its population and occupy disturbed habitat until interspecific competition exceeds its tolerance. This response was recorded at Sonoita Creek in August 1988, when a scouring flood removed about 95% of the umbel population (Gori *et al.* 1990). One year later, the umbel had recolonized the stream and was again codominant with watercress (*Rorippa nasturtium-aquaticum*, Warren *et al.* 1991). However, two patches of umbel on the San Pedro River were lost during a winter flood in 1994, and the species had still not recolonized that area as of May 1995, demonstrating the dynamic and often precarious nature of occurrences within a riparian system (Al Anderson, Grey Hawk Ranch, *in litt.* 1995). The expansion and contraction of umbel populations appear to depend on the presence of "refugia" where the species can escape the effects of scouring floods, a watershed that has an unaltered hydrograph, and a healthy riparian community that stabilizes the channel.

Density of umbel plants and size of populations fluctuate in response to both flood cycles and site characteristics. Some sites, such as Black Draw, have a few sparsely distributed clones, possibly due to the dense shade of the even-aged overstory of trees, dense non-native herbaceous layer beneath the canopy, and deeply entrenched channel. The Sonoita Creek population occupies 14.5% of a 5,385 square foot patch of habitat (Gori *et al.* 1990). Some populations are as small as 11 to 22 square feet. The Scotia Canyon population, by contrast, has dense mats of leaves. Scotia Canyon contains one of the larger umbel populations, occupying about 57% of the 4,756 foot perennial reach (Gori *et al.* 1990, Falk and Warren 1994).

While the extent of occupied habitat can be estimated, the number of individuals in each population is difficult to determine because of the intermeshing nature of the creeping rhizomes and the predominantly asexual mode of reproduction. A "population" of umbel may be composed of one or many genetically distinct individuals.

Threats

Overgrazing, mining, hay harvesting, timber harvest, fire suppression, and other activities in the nineteenth century led to widespread erosion and channel entrenchment in southeastern Arizona streams and cienegas when above-average precipitation and flooding occurred in the late 1800s and early 1900s (Bryan 1925, Martin 1975, Hastings and Turner 1980, Dobyns 1981, Hendrickson and Minckley 1984, Sheridan 1986, Bahre 1991, Webb and Betancourt 1992, Hereford 1993). A major earthquake near Batepito, Sonora, approximately 40 miles south of the upper San Pedro Valley, resulted in land fissures, changes in groundwater elevation, and spring flow, and may have preconditioned the San Pedro River channel for rapid flood-induced entrenchment (Hereford 1993, Geraghty and Miller, Inc. 1995). These events contributed to long-term or permanent degradation and loss of cienega and riparian habitat on the San Pedro River and throughout southeastern Arizona and northeastern Sonora. Much habitat of the umbel and other cienega-dependent species was presumably lost at that time.

Wetland degradation and loss continues today. Human activities such as groundwater overdrafts, surface water diversions, impoundments, channelization, improper livestock grazing, chaining, agriculture, mining, sand and gravel operations, road building, non-native species introductions, urbanization, wood cutting, and recreation all contribute to riparian and cienega habitat loss and

degradation in southern Arizona. The local and regional effects of these activities are expected to increase with the increasing human population.

Limited numbers of populations and the small size of populations make the umbel vulnerable to extinction as a result of stochastic events that are often exacerbated by habitat disturbance. For instance, the restriction of this taxon to a relatively small area in southeastern Arizona and adjacent areas of Mexico increases the chance that a single environmental catastrophe, such as a severe tropical storm or drought, could eliminate populations or cause extinction. Populations are in most cases isolated, as well, which makes the chance of natural recolonization after extirpation less likely. Small populations are also subject to demographic and genetic stochasticity, which increases the probability of population extirpation (Shafer 1990, Wilcox and Murphy 1985).

Critical Habitat

Seven Critical Habitat units have been designated for umbel; all are in Santa Cruz and Cochise counties, Arizona, and include stream courses and adjacent areas out to the beginning of upland vegetation. The Scotia, Sunnyside, and Bear canyon units (3, 4, and 6) are within the Coronado National Forest. The remaining Units are in lands adjacent to Forest lands. The following general areas are designated as critical habitat (see legal descriptions for exact critical habitat boundaries):

Unit 1-approximately 1.25 mile of Sonoita Creek southwest of Sonoita;

Unit 2-approximately 2.7 miles of the Santa Cruz River on both sides of Forest Road 61, plus approximately 1.9 miles of an unnamed tributary to the east of the river;

Unit 3-approximately 3.4 miles of Scotia Canyon upstream from near Forest Road 48;

Unit 4-approximately 0.7 mile of Sunnyside Canyon near Forest Road 117 in the Huachuca Mountains;

Unit 5- approximately 3.8 miles of Garden Canyon near its confluence with Sawmill Canyon;

Unit 6- approximately 1.0 mile of Rattlesnake Canyon and 0.6 mile of an unnamed canyon, both of which are tributaries to Lone Mountain Canyon; approximately 1.0 mile of Lone Mountain Canyon; and approximately 1.0 mile of Bear Canyon; an approximate 0.6-mile reach of an unnamed tributary to Bear Canyon; and

Unit 7- approximately 33.7 miles of the San Pedro River from the perennial flow reach north of Fairbank (Arizona Department of Water Resources 1991) to 0.13 mile south of Hereford, San Pedro Riparian National Conservation Area.

The primary constituent elements of critical habitat for umbel include, but are not limited to, the habitat components that provide:

(1) Sufficient perennial base flows to provide a permanently or nearly permanently wetted substrate for growth and reproduction of umbel;

(2) A stream channel that is relatively stable, but subject to periodic flooding that provides for rejuvenation of the riparian plant community and produces open microsites for umbel expansion;

(3) A riparian plant community that is relatively stable over time and in which non-native species do not exist or are at a density that has little or no adverse effect on resources available for umbel growth and reproduction; and

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

Activities that may destroy or adversely modify critical habitat include those that alter the primary constituent elements to the extent that the value of critical habitat for both the survival and recovery of umbel is appreciably diminished. Such activities are also likely to jeopardize the continued existence of the species.

Peebles Navajo cactus

We listed the Peebles Navajo cactus as endangered on October 26, 1979 (44 FR 61922) without critical habitat. A recovery plan was completed for the species in 1984. Seven species of *Pediocactus* occur within the Columbia River Basin, Great Basin, Rocky Mountains, and Colorado Plateau with six of those occurring as restricted endemics (Arizona Game and Fish Department 1999). Peebles Navajo cactus, also formerly referred to as the Navajo plains cactus, is a very small, solitary globose cactus with one stem up to 1 inch tall and averaging 0.74 inch in diameter (U.S. Fish and Wildlife Service 1984b). The cactus retracts underground when precipitation is limited. On the areole, an average of four corky (or spongy), radial spines may appear as a twisted cross (Benson 1962, 1969; Arizona Rare Plant Committee 2001). Each spine is approximately 0.2 inch long. The flowers are yellow to yellow-green and average approximately 1 inch in diameter. Unlike the very similar Fickeisen plains cactus (*Pediocactus peeblesianus* var. *fickeinseniae*), there are no central spines on the areole. The fruits are tan at maturity and dehisce usually by both a dorsal slit and by a ring around the apex; a distinguishing trait of the genus *Pediocactus* (Benson 1962, 1969; U.S. Fish and Wildlife Service 1984b, Arizona Rare Plant Committee 2001).

Peebles Navajo cactus is a species endemic to Arizona occupying a very small geographical area (7 miles in length by 1 mile in width) extending northwest to southeast within the immediate vicinity of Joseph City and Holbrook, Navajo County, Arizona (U.S. Fish and Wildlife Service 1984b). There were at one time five known populations, totaling about 1000 individual plants, 70% of which occurred on private lands (U.S. Fish and Wildlife Service 1984b). Three of the five discrete known populations occurred on private property with the remaining populations occurring on BLM (Safford Field Office) property within the Apache Butte grazing allotment (6073)(U.S. Fish and Wildlife Service 1984b, Arizona Game and Fish Department 1999), and Arizona State lands (Marcou Mesa).

The species occupies low hills in the Plains and Great Basin Grassland biotic community from near Joseph City extending northwest to the Marcou Mesa region northwest of Holbrook (Brown and Lowe 1980, Arizona Game and Fish Department 1999). The cactus occurs between 5,100 and

5,650 feet above sea level. The cactus occurs in exposed, sunny areas in gravelly substrate derived from the Shinarump Member of the Chinle Formation, on gently sloping to flat hilltops (Stuart *et al.* 1972, Arizona Game and Fish Department 1999). Peebles Navajo cactus prefers soil conditions consisting of pale yellow to yellow-orange fine to course-grained friable sandstone (Stuart *et al.* 1972). Pebbles of quartz, quartzite, and chert are also commonly associated with the species (Arizona Game and Fish Department 1999).

The vegetation where Peebles Navajo cactus occurs is generally open and sparse, and characterized by low shrubs, grasses, and annuals (U.S. Fish and Wildlife Service 1984b). The distribution of the species occurs in an ecotone between the Plains and Great Basin Grassland and the Great Basin Desert Scrub biotic communities (Brown and Lowe 1980, U.S. Fish and Wildlife Service 1984b, Arizona Game and Fish Department 1999). Plant species associated with Peebles Navajo cactus include shadscale (*Atriplex concertifolia*), four-winged saltbush (*A. canescens*), Mormon tea (*Ephedra viridis* and *E. cutleri*), snakeweed (*Gutierrezia sarothrae*), rabbitbrush (*Chrysothamnus nauseosus*), sagebrush (*Artemisia bigelovii* and *A. tridentate*), galleta (*Hilaria jamesii*), beehive cactus (*Escobaria vivipara*), Whipple devil claw (*Sclerocactus whipplei* var. *whipplei*), several species of prickly pear (*Opuntia* sp.) and cholla (*Cylindropuntia* sp.) cacti, as well as juniper (*Juniperus* sp.) (Arizona Game and Fish Department 1999, U.S. Fish and Wildlife Service 1984b).

A Habitat Management Plan (HMP) was developed in 1984. At that time, the 420-acre HMP area included all known populations on public land. Since then, additional cacti were found in 1996 and in 2004. The 1996 surveys added 10 acres to the area. The 2004 survey area has not been thoroughly surveyed, but individuals are scattered over approximately 160 acres outside of the HMP area (BA).

The BLM established the Tanner Wash Area of Critical Environmental Concern (ACEC) in 1989 to protect the known populations on BLM lands. The ACEC is less than half BLM-administered public land, with the remainder in private ownership and, thus, is vulnerable to development or other activities. BLM is hoping to acquire the private lands within the ACEC. BLM lands within the ACEC are excluded (fenced) from livestock use and to protect the populations from off-road vehicle use.

The most recent population monitoring data were compiled by Phillips and Phillips (2004), who discussed population trends in four monitoring plots as a 20-year overview. Germination events have been strongly associated with rainfall and have remained sporadic, occurring every few years over this timeframe (Phillips and Phillips 2004). Phillips and Phillips (2004) also noted slow growth rates with average reproductive maturity occurring at 8-12 years of age. Population monitoring data indicate that the total number of plants present in all plots doubled from 1985 to 1997 and that in certain years, the proportion of seedlings and juveniles to adult plants was markedly higher, indicating germination events. Survival of juveniles was high in the first year following germination, but then decreased. A sudden and precipitous decline in the number of adult plants occurred between 1998 and 2002, but the populations seem to be recovering very slowly from these declines (Phillips and Phillips 2004).

Threats to the Peebles Navajo cactus are both anthropogenic and natural. Due to the extreme rarity of the species, it is in demand by collectors (both domestic and international), and removal

of plants from native habitats has been documented by Newland (1979). Livestock grazing is also a perceived threat through trampling, primarily on private lands during wet conditions when the plants are emergent (Phillips *et al.* 1979, U.S. Fish and Wildlife Service 1984b). The BLM's livestock grazing management has maintained a proactive approach to protecting known populations by constructing fencing; however, trespass livestock are inevitably of concern. Gravel mining and urban development are large-scale threats to the species (Arizona Game and Fish Department 1999). The construction of roads and the subsequent access to preferred habitat are also of concern to the conservation of the species. Rock and petrified wood collectors, ranchers, and off-highway vehicle recreationists use the myriad of roads within the geographical distribution of the species for various purposes (U.S. Fish and Wildlife Service 1984b). These various activities often lead to trampling and crushing of individual plants, as well as both soil erosion and compaction of the species' habitat.

Natural threats to the Peebles Navajo cactus include vulnerability to stochastic events due to its significantly limited geographical distribution, a restricted gene pool, and a low number of individuals, making the species susceptible to extinction (Arizona Game and Fish Department 1999). Drought has also proven to adversely impact the species due, directly, to issues pertaining to limited precipitation (which has contributed to mortality of large plants and likely resulted in reduced or non-existent germination) and indirectly, to increased predation by herbivorous mammals (M. Falk, U.S. Fish and Wildlife Service, pers. comm. 2003; Phillips and Phillips 2004,). Small mammalian herbivores such as rabbits (*Sylvilagus* sp. and *Lepus* sp.) have been observed eating Peebles Navajo cactus as vegetation preferences in diet shift in response to drought conditions (M. Falk, U.S. Fish and Wildlife Service, pers. comm. 2003; B. Phillips, Forest Service, pers. comm. 2003; Phillips and Phillips 2004). For the most part, the habitat in which the species occurs is not fire adapted, lacks a significant fine fuels component, and is not likely to carry a wildfire even in drought conditions.

Pima pineapple cactus

The Pima pineapple cactus (PPC) was listed as an endangered species without critical habitat on September 23, 1993 (58 FR 49875). Factors that contributed to the listing include habitat loss and degradation, habitat modification and fragmentation, limited geographical distribution and species rareness, illegal collection, and difficulties in protecting areas large enough to maintain functioning populations. A 5-year review was completed in 2007 and recommended no change to the cactus's classification as an endangered species (US Fish and Wildlife Service 2007c).

PPC occurs south of Tucson, in Pima and Santa Cruz counties, Arizona and adjacent northern Sonora, Mexico. In Arizona, it is distributed at very low densities throughout both the Altar and Santa Cruz valleys, and in low-lying areas connecting the two valleys. This cactus generally grows on slopes of less than 10% and along the tops (upland areas) of alluvial bajadas. In Arizona, the plant is found at elevations between 2,360 ft and 4,700 ft (Phillips *et al*. 1981, Benson 1982, Ecosphere 1992), in vegetation characterized as either or a combination of the Arizona upland of the Sonoran Desert scrub and semi-desert grasslands (Brown 1982). In Sonora, PPC reportedly occurs in semi-desert grasslands upslope into oak woodlands, at elevations of 2,300-4,920 ft (Paredes-Aguilar *et al.* 2000). Several attempts have been made to delineate suitable habitat within the range of PPC (McPherson 2002; RECON Environmental Inc. 2006; U.S. Fish and Wildlife Service, unpublished analysis) with very limited success. As such,

we are still unable to determine exact ecological characters to help us predict locations of PPC or precisely delineate suitable habitat (U.S. Fish and Wildlife Service 2007).

As a consequence of its general habitat requirements, considerable suitable habitat for this species appears to exist in Pima and Santa Cruz counties, much of which is unoccupied. PPC occurs at low densities, widely scattered, and sometimes in clumps, across the valley bottoms and bajadas. The species can be difficult to detect, especially in dense grass cover. For this reason, systematic surveys are expensive and have not been conducted in much of its range. As a result, location information has been gathered opportunistically, either through small systematic surveys, usually associated with specific development projects, or larger surveys that are typically only conducted in areas that seem highly suited for the species. Furthermore, our knowledge of this species is gathered primarily through the section 7 process; therefore, we only see projects that require a Federal permit or have Federal funding. There are many projects that occur within the range of PPC that do not undergo section 7 consultation, and we have no information regarding the status or loss of plants or habitat associated with those projects. For these reasons, it is difficult to characterize abundance and population trends for this species.

Threats to PPC continue to include habitat loss and fragmentation, competition with non-native species, and inadequate regulatory mechanisms to protect this species. We believe residential and commercial development, and its infrastructure, is by far the greatest threat to PPC and its habitat. Other specific threats that have been previously documented, such as overgrazing, illegal plant collection, prescribed fire, and mining, have not yet been analyzed to determine the extent of effects to this species. However, partial information exists. Overgrazing by livestock, illegal collection, and fire-related interactions involving exotic Lehmann lovegrass and buffelgrass may negatively affect PPC populations. Mining has resulted in the loss of hundreds, if not thousands, of acres of potential habitat throughout the range of the plant. For further information, refer to the 5-year review (U.S. Fish and Wildlife Service 2007).

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Description of the Action Area

The action area includes areas proposed for grazing activities under the jurisdiction of the Gila District plus additional areas influenced by the proposed action. Livestock grazing impacts can have implications outside of the project area, when grazing causes excessive non-point source pollution and when grazing in drainages or in watersheds removes vegetation and exposes soils to erosion, which in turn allows runoff to carry a higher energy level and increased levels of sediment downstream and outside of the project area. In some cases, erosion can extend upstream in the form of headcuts. Sediment rates in rivers and streams are likely still high from the impacts of excessive grazing in the late 1800s and early 1900s, but are also likely to have lessened since

the mid 1900's. Non-point source pollution from livestock fecal material has also likely lessened, but will continue to cause some level of non-point source pollution as long as livestock graze in the watersheds. Livestock grazing may facilitate the spread of noxious weeds, but is less likely in the future because of programs to prevent and control the spread of noxious weeds. The condition of riparian areas and their ability to absorb energy from water has also improved since the mid 1900's, but problem areas still remain. Under normal rainfall events, impacts from grazing are in most cases minimal. Increased run off from large rain events would have more of an impact downstream, and livestock grazing would increase this impact to some degree. The major drainages that can carry these influences out of the project area are the Gila and the Little Colorado rivers, and the headwaters of the Río Yaqui.

Most grazing allotments in the Gila District that are located in Graham, Greenlee, Cochise and a portion of Pinal counties, Arizona, and most of the grazing allotments in New Mexico drain primarily into the Gila River, including its major tributaries such as the San Simon, Santa Cruz, and San Pedro rivers. Non-point source pollution or riparian vegetation alteration could potentially influence the Gila River drainage but these effects would likely end at the two water control points, Coolidge Dam on the San Carlos Reservation and the Ashurst-Hayden Diversion Dam upstream of Florence.

In Navajo and Apache counties, the public lands under the BLM's administration contribute only minutely to the watershed of the Little Colorado River. Any influence in this drainage during normal rainfall events is negated by the intermittent dry stretches of the river between Holbrook and Winslow, and likely does not extend beyond the project area boundary.

BLM lands that are grazed occur throughout the upper watershed of the Río Yaqui in the San Bernardino Valley. Influences from grazing BLM lands, and other lands in the allotments with greater than 30% BLM lands (five allotments), will likely be minimal but could extend to Mexico.

Other allotments within the Gila District contribute very little to their watersheds outside of their boundaries, and likely do not extend beyond the project area boundary (e.g., Altar Valley).

Status of the species, critical habitat, and factors affecting species environment and critical habitat within the action area

Southwestern willow flycatcher

Known flycatcher habitat and sites in the action area are similar to what was documented in the 1997 BO and the 18 Allotments BO, but additional territories have been documented, and the locations of some areas that may have flycatcher breeding habitat have changed since the completion of these BOs.

Flycatcher habitat within the action area is located in the Middle Gila/San Pedro and the Upper Gila Management Units (MU) within the Gila Recovery Unit. A portion of the Santa Cruz MU within the Gila Recovery Unit is also within the action area, but there is no flycatcher habitat in or near BLM allotments in that portion of the action area. Breeding flycatcher locations have been documented in the Middle Gila (below Coolidge Dam)/San Pedro MU (Winkelman area, the lower San Pedro River, and the San Pedro RNCA) and the Upper Gila MU (including the Gila

Valley along the Gila River upstream of Coolidge Dam, and along the Gila River near Duncan, AZ). The Winkelman, lower San Pedro River, and Gila Valley areas consistently have breeding flycatchers, some of which occur on and adjacent to BLM lands; the San Pedro RNCA has had breeding flycatchers on or adjacent to BLM land, though not consistently; and breeding flycatchers have been documented in the Duncan area on non-Federal lands (Smith *et al*. 2002, 2003, 2004, Munzer *et al.* 2005, English *et al.* 2006, Durst *et al.* 2007, 2008). As of 2007, there were 233 territories in the Middle Gila/San Pedro MU and 72 territories in the Upper Gila MU (in Arizona) (Durst *et al.* 2008). Within these territories, documented active nests will vary annually depending on natural ecological fluctuations, releases of water from the San Carlos Reservoir (for the Middle Gila area), subsurface water extraction, and survey efforts in individual territories. Flycatchers likely use riparian areas on the Gila and San Pedro rivers in the action area during migration, both on BLM and non-Federal lands. Protection of flycatcher habitat has increased because some areas have been acquired by the BLM (through land exchanges) and other Federal and non-Federal organizations (through purchases and easements by The Nature Conservancy, the Salt River Project, and the Bureau of Reclamation). All of these areas contain mixed native and non-native vegetation. BLM lands in Navajo and Apache counties do not fall within the elevational zones where southwestern willow flycatchers have been found in that area. There is no indication that willow flycatchers occur on any BLM allotments in these two counties.

All of the following areas have flycatcher territories and/or flycatcher habitat. The number of active nests and acres of habitat varies over time, so all territories are assumed occupied, and flycatcher habitat occurs continuously or intermittently in documented habitat areas.

Middle Gila River/San Pedro River MU

In the middle Gila River area, fourteen allotments that have riparian habitat include the Myers (6132), Whitlow (6032), Horsetrack (6111), LEN (6197), Cochran (6113), Teacup (6168), A Diamond (6120), Kearney (6117), Battle Axe (6059), Rafter Six (6067), Hidalgo(4513), Piper Springs (4514), Christmas (4511), and Mescal Mountain (4509) allotments. The Gila River crosses some of these allotments, and the river is the allotment boundary in other allotments. The riparian habitat is generally in late seral condition. Fences, other control structures, and topography are functioning to exclude livestock from the Gila River on BLM lands (except the Christmas allotment), and some non-BLM lands. Most of these allotments exclude permitted livestock grazing along the river from April 1 to October 30, but livestock occasionally occur along the river during this time. The Christmas allotment has a fence separating the northern portion from the southern portion of the allotment. The southern portion will not be grazed from April 1 to September 1, but the northern portion may be grazed throughout the year. The topography in the northern portion is steep so that it is difficult for livestock to reach the river, but livestock use occurs occasionally. A total of 1617 acres of BLM lands and 456 acres of non-BLM lands within BLM allotments are seasonally or completely excluded from livestock grazing. Eighty-six acres of BLM lands and 923 acres of non-BLM lands within BLM allotments are not excluded from livestock. The Gila River allotments that do not have flycatcher habitat, but are near flycatcher habitat, are the Sleeping Beauty Mountain (6099), Steamboat (6251), Smith Wash (6221), and Indian Camp (6042) allotments. All of these allotments contain greater than 30% BLM lands except for the Sleeping Beauty Mountain allotment. Livestock grazing occurs on some non-Federal lands within and outside of the allotments.

In the lower San Pedro River area, no flycatcher territories are known to occur on BLM lands in active allotments, though some may occur on non-Federal lands in active allotments. For this analysis, we assume that flycatcher habitat occurs from the Mammoth area downstream to the confluence with the Gila River. The allotments that include flycatcher habitat, or are near flycatcher habitat, are the Tiger (4535), Dry Camp (4534), Zapata (4533), Massacre (4532), Painted Cave (4518), Malpais Hill (4517), Dudleyville (4516), Smith Wash (6221), and Eskiminzin (4542) allotments. A small area of riparian habitat along the San Pedro River occurs only in the Tiger allotment (livestock have access to this area). The Painted Cave, Smith Wash, Eskiminzin, and Dudleyville allotments contain greater than 30% BLM lands. It is likely that grazing occurs on most non-Federal lands in the allotments.

To date, only two flycatcher nests have been documented on the San Pedro RNCA; in 1997 a nest was located on Kingfisher Pond and in 2005 a nest was located near Hereford Bridge. No other breeding flycatchers have been documented on the San Pedro RNCA. Flycatcher habitat occurs intermittently throughout the San Pedro RNCA. Most of the RNCA is excluded from livestock, but livestock occasionally occur within the RNCA. The only two allotments in the area that are active and may have flycatcher habitat where livestock are permitted are the Babocomari (5208) and Brunchow Hill (5251) allotments. The Babocomari allotment may have flycatcher habitat along the Babocomari River, but there are no known flycatcher sightings documented in this area. A small stretch (approximately 0.3 mile) of riparian habitat along the San Pedro River occurs in the Brunchow Hill allotment (this portion is in the RNCA), but there are no known flycatcher sightings documented in this area. The Brunchow Hill allotment contains more than 30% BLM lands. All of these areas are currently grazed, though it may be only occasional grazing in the riparian areas.

Upper Gila MU

The Gila Valley has numerous territories documented along the Gila River, some on BLM lands; however, none of these territories occur on a BLM allotment. BLM allotments are near some of these territories (see Figure 1), and are generally separated from the territories by agricultural and open lands. Most of these allotments contain greater than 30% BLM lands. One territory is near Duncan, AZ, but this territory is not on a BLM allotment. There are no active allotments near this territory (see Figure 1).

Changes from the 1997 BO

Since the 1997 BO, the Aravaipa area, Muleshoe EMA area, Eagle Creek, Bonita Creek, and Gila River through most of the Gila Box RNCA have been assessed for current and potential flycatcher habitat. The BLM has determined that they do not contain or have the potential for flycatcher breeding habitat because of gradients, limited floodplains, agricultural development, patch sizes, or distance to occupied areas. Some of the most likely areas for flycatchers have been surveyed (such as in the Muleshoe EMA area; Whetstone 1996), but no flycatchers have been detected. Some changes are documented in previous BOs (such as the Proposed Tamarisk Control and Selective Mesquite Removal Project within the Gila Box RNCA, #02-21-05-F-0727). These areas are not considered further for flycatcher in this BO.

Critical Habitat

There is critical habitat designated within the upper Gila Management Unit and the Middle Gila/San Pedro Management Unit (U.S. Fish and Wildlife Service 2002) in the action area. The Gila River has a portion of one segment and all of another segment of critical habitat in the Upper Gila MU. The longest segment starts at the upper end of Earven Flat, through the Gila Valley (Safford) downstream to the San Carlos Apache Tribal Boundary. Another segment ranges from the Arizona-New Mexico border to Duncan, Arizona. Critical habitat on the San Pedro River starts 3.5 miles upstream of the Hot Springs Canyon confluence and ends at the Gila River confluence. Critical habitat on the middle Gila River starts at the Dripping Springs Wash confluence and ends at Ashurst-Hayden Diversion Dam. The allotments that have critical habitat, or are adjacent or near critical habitat, are the same allotments as described in the previous sections for the Middle Gila River, Lower San Pedro River, Gila Valley, and Duncan areas.

Recovery and Critical Habitat Management

The recovery of the flycatcher is dependent on maintaining a minimum number of territories in each MU over the long-term, which is accomplished through management on Federal and non-Federal lands. Critical habitat managed to maintain or improve the PCEs for flycatcher over time will contribute to accomplishing these goals. Livestock management is identified as one of the major stressors on flycatcher habitat. Appendix G of the flycatcher recovery plan provides recommendations for livestock management in flycatcher habitat (Table 2 in Appendix G of the recovery plan). In summary for this proposed action and habitat type (All other habitat types), the plan recommends that livestock not be grazed in regenerating or suitable habitat during the growing season, that conservative grazing be implemented in these areas during the non-growing season, and that conservative utilization of herbaceous plants be implemented in the adjacent uplands. The designation of critical habitat (70 FR 60978) identified actions that would be considered in section 7 consultation for critical habitat including management of livestock in a manner that reduces the volume and composition of riparian vegetation, physically disturbs nests, alters floodplain dynamics such that regeneration of riparian habitat is impaired or precluded, facilitates excessive brood parasitism by brownheaded cowbirds, alters watershed and soil characteristics, alters stream morphology, and facilitates abundance and extent of exotic species.

> The BLM excludes livestock grazing in flycatcher (riparian) habitat on BLM lands (except the northern portion of the Christmas allotment) from April 1 to September 1 (the breeding season and most of the growing season), and will manage habitat to maintain or develop into suitable flycatcher habitat. The BLM will manage BLM lands to meet standard 2 (riparian) and meet standard 1 (uplands) in the allotments that have or are near critical habitat.

The factors that have and are affecting flycatchers within the action area are habitat loss through fragmentation and vegetation modification through agricultural uses, river channel modification, wildfire, groundwater pumping and water diversions for both agricultural and municipal-use that lower water table depths to a degree that precludes establishment and maintenance of native riparian species. All of these Federal, State, municipal, and private actions have impacted this species in varying degrees, including short-term and long-term changes in habitat quality and quantity, and disturbance to flycatchers if present. These actions probably have had primarily negative impacts on the species and its habitat quality and quantity. See the RMP BO, Fire BO,

1997 BO, and 18 Allotments BO for details.

New Mexico ridge-nosed rattlesnake

The status of the species and its critical habitat in the action area is similar to that described in the 1997 BO. An important new piece of information since the 1997 BO is a habitat study and map of potential core habitats for the snake in the Peloncillo Mountains (Holycross 1999). Habitats were ranked in four categories, from 'probably supports a deme of *C. w. obscurus*' to 'very unlikely that *C. w. obscurus* occurs there'. A total of 132 habitat patches were identified in the first two categories (likely or probably supports a deme of *C. w. obscurus*).

The snake has not been found on BLM lands in the action area, but that may be because of lack of surveys. Habitat has been identified for the species in BLM allotments, including on BLM lands. All known rattlesnake localities within the action area are on Forest Service lands. There is a reasonable expectation that the species exists on BLM-administered parcels in close proximity to occupied Forest Service lands, so this analysis assumes that the species occurs in the allotments, though their population density may be very low. The Guadalupe West (5244), Sycamore (5254), and Ben Snure (5281) allotments contain habitat identified for the species. The Guadalupe West allotment is currently in long-term non-use status, but permitted livestock grazing may be reauthorized in the future. It has not been assessed under current standards and guidelines. It contains approximately two to three sections of snake habitat in the northern portion of the allotment. The Sycamore allotment currently is meeting the standards. Most of the snake habitat is on Forest Service lands, but approximately two sections of snake habitat are on BLM lands in the southeastern portion of the allotment. The Ben Snure allotment currently is meeting the standards. Less than 0.5 acre of snake habitat occurs on BLM land in the eastern portion of this allotment. The Guadalupe West allotment contains more than 30% BLM lands.

Critical Habitat

No critical habitat has been designated in the action area.

The Malpai Borderlands area in southeastern Arizona and southwestern New Mexico includes a portion of the action area and intersects the range of the New Mexico ridge-nosed rattlesnake. This rangeland is actively grazed and currently managed on a landscape scale through the coordinated efforts of private landowners, Arizona State Land Department, BLM, Natural Resource Conservation Service, and U.S. Forest Service. As part of this cooperative management strategy, prescribed burns have been conducted in this area. The Maverick burn (1997) escaped the fire lines and resulted in removing 18 patches of New Mexico ridge-nosed rattlesnake habitat identified by Holycross (1999), including two patches that were known to be occupied by snakes. Some of this area was also burned as part of the Baker II prescribed fire in 2003. Consultation on the Peloncillo Programmatic Fire Management Plan on the Coronado National Forest #02-21-04-F-0474) was completed in 2005. This plan includes the use of wildland fire and prescribed burns in the Peloncillo Mountains. While the project area only includes Forest Service lands, it is adjacent to some BLM lands, which include measures to not allow prescribed fire ignitions from July 15 through October 31 in delineated, high-quality rattlesnake habitat. While excessive livestock grazing has been identified as a factor that could alter habitat, section 7 consultation for grazing on Federal lands has already been completed. Illegal collection of this animal likely occurs

in the Peloncillo population and remains a threat. However, most of this activity probably occurs in the higher elevations, which are administered by the Coronado National Forest.

Desert pupfish

Within the action area, desert pupfish occur at Cold Spring Seep north of Safford, at Howard Well in the San Simon Valley, in the Aravaipa Canyon area, in the Muleshoe area, and in Bonita Creek. Establishments are planned in the near future at other locations in the Muleshoe area, Aravaipa area, and in Bonita Creek, and in the San Pedro RNCA.

Cold Spring Seep is located in the Day Mine Allotment (46040), and includes over 30% BLM lands. Two ponds support healthy populations of native fish. The uppermost pond supports both desert pupfish and Gila topminnow, whereas the lowermost pond supports Gila topminnow. Riparian development at this site is marsh or cienega type habitat that appears stable and healthy. Annual surveys conducted by the BLM indicate that populations of both species are stable and relatively secure.

Parson's Grove, located on the South Rim Allotment (45290) of Aravaipa Creek, was stocked in October 2005 along with an additional two sites on The Nature Conservancy's (TNC) property. Follow-up surveys conducted by the BLM and TNC failed to collect desert pupfish at Parson's Grove. Desert pupfish were collected at both TNC sites. In 2008, desert pupfish were stocked into Oak Grove Canyon on TNC property. Monitoring has documented their movement downstream onto BLM lands. Stocking in future years will continue in other suitable sites in the general area, along with supplemental stockings in the recently stocked sites to establish and maintain genetic integrity of these small populations. Formal consultation was completed for these establishments on BLM and TNC land in the Aravaipa Creek Watershed reestablishment BO (#02-21-04-F-0022). All current and future sites are in the South Rim allotment (4259), which is 85% BLM land.

Desert pupfish were stocked into Howard Well on the Fan Allotment (51140) in 1983. Subsequent invasion of cattails and accumulation of sediment and organic materials resulted in the apparent extirpation of desert pupfish at the site by 1993. In 2006, the aquatic and riparian habitat was restored to maintain open water habitat for desert pupfish. Associated riparian and aquatic vegetation is lush and largely unaffected by human disturbance. Formal consultation for the proposed reestablishment of desert pupfish at Howard Well and Posey Well was completed in 2007 (#22410-2007-F-0225). Initial establishment at Howard Well was completed in 2008. In October 2009, 58 pupfish were stocked to augment the population. Additional stockings will occur, as needed, to augment the population. Both wells occur on the Fan Allotment, which is 100% BLM lands.

Formal consultation was completed in 2005 (#02-21-2007-F-0233) to reestablish four native fish species within the Muleshoe Ecosystem Management Area (EMA). This project resulted in desert pupfish being established in the Muleshoe EMA. Pupfish were reestablished in 2007 and augmented in 2008 in Swamp Springs Canyon and Cherry Spring Canyon. Three additional sites, located on TNC property were stocked in 2007, 2008, and 2009, and two were augmented in 2010. Additional stockings are planned for future years. The three active allotments within the Muleshoe EMA that have, or will have, pupfish within or adjacent include the Muleshoe (44010),

C-Spear (44090), and Soza Mesa (44020) allotments. Pupfish currently occur on the Muleshoe allotment (BLM and TNC lands). The Muleshoe and Soza Mesa allotments contain over 30% BLM lands.

Formal consultation was completed in 2007 to reestablish four native fish species, including desert pupfish, within Bonita Creek (22410-2007-F-0233). Desert pupfish were established in Bonita Creek in the fall of 2008 and augmented in November 2010. Future augmentations will likely be necessary to establish a population. This BO also addressed the construction of a fish barrier in Bonita Creek and the implementation of the Memorandum of Understanding (MOU) and 10-Year Operation Plan between the BLM and the City of Safford for the extraction of water. The barrier, which has been constructed 1.3 miles upstream of Bonita Creek's confluence with the Gila River, will assist in excluding non-native fish in Bonita Creek. The continued use and expansion of the water infiltration gallery (for extracting water for the City of Safford) will likely reduce surface water flow in 1.7 miles of fish habitat in lower Bonita Creek above the fish barrier to a point that may result in loss of most of the fish habitat in lower Bonita Creek. Approximately 13 miles of stream above the infiltration gallery will remain suitable habitat for the native species that are present or reestablished. The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border or include portions of Bonita Creek. Pupfish are expected throughout Bonita Creek. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments, with the exception that the BLM authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain over 30% BLM lands.

Formal consultation was completed in 2008 to establish populations of the pupfish, other fish species, the CLF, and the umbel in the San Pedro RNCA (and Las Cienegas National Conservation Areas which not addressed in this consultation) (# 22410-2008-F-0103). The stockings are planned for six sites in the SPRNCA. None of these sites have permitted livestock grazing.

Critical Habitat

No desert pupfish designated critical habitat occurs within the action area.

The currently occupied and future reestablishment sites within the action area have been and continue to be adversely affected by natural events, such as fire, flood, or drought, and from non-native species invasions, water withdrawal, improperly managed livestock grazing, recreational activities, and/or other land-use practices on public and private lands. The BLM, along with FWS, TNC, and AGFD, has committed to maintaining the current and future occupied sites, and possibly pursuing other sites for reestablishment. Past and current actions in the action area have resulted in some potential sites not being an option for reestablishment, but with the current commitments from the BLM and other organizations, the current pupfish sites will likely be maintained in the long-term, and pupfish will be reestablished in other sites. See the 1997 BO for additional environmental baseline information.

Gila chub

Within the action area, Gila chub occur in the Muleshoe area, Mineral Creek, and Bonita Creek. Establishments of Gila chub are planned in the near future at other locations in the Muleshoe area,

and in the SPRNCA.

Gila chub currently occur in Redfield, Hot Springs, and Bass canyons of the Muleshoe EMA. Formal consultation was completed in 2005 (#02-21-04-F-0454) to reestablish four native fish species within the Muleshoe EMA, including augmenting the current Gila chub populations in these areas. This consultation covered the continuing actions of livestock management in the area. The three active allotments within the Muleshoe EMA that have, or may have in the future, Gila chub within or adjacent include the Muleshoe (44010), C-Spear (44090), and Soza Mesa (44020) allotments. Gila chub currently occur in the Muleshoe and C-Spear allotments on Federal and non-Federal lands. The Muleshoe and Soza Mesa allotments have over 30% BLM lands.

Gila chub may still occur in Mineral Creek in the Government Springs (4544) and Sleeping Beauty Mountain (6099) allotments, but the creek does not flow on BLM lands. Gila chub were found in Mineral Creek in 2000 on the extreme northern portion of the Sleeping Beauty Mountain allotment. No chub were found in 2008 on either allotment when Mineral Creek was surveyed from the confluence with Devil's Canyon approximately four miles upstream to Lyons Canyon. The creek is considered occupied from the confluence with Devil's Canyon to Lyons Canyon (the creek above Lyons Canyon is ephemeral), though density of chub is likely very low because no Gila chub were detected during the 2008 survey, and these areas contain high densities of green sunfish (*Lepomis cyanellus*), which limits chub occurrence. The Sleeping Beauty Mountain allotment permit has been in non-use for twenty years. Livestock have access to Mineral Creek on both allotments, but most of the creek where fish could occur is a rocky, mostly canyon-bound stream with course substrates. This terrain limits livestock access and is very resilient to the effects of livestock grazing. As a result, most of the occupied area maintains habitat characteristics sufficient to maintain chub. Both allotments have less than 30% BLM land.

Gila chub currently occur in Bonita Creek. The effects of livestock management on Gila chub in the area were addressed in the reinitiated BO for the Gila Box Riparian National Conservation Area Interdisciplinary Activity Plan (02-21-92-F-0070) and, more recently in 2007, in the BO to reestablish four native fish species within Bonita Creek (22410-2007-F-0233). See write-up for the desert pupfish regarding an MOU with BLM, City of Safford activities, and a fish barrier on Bonita Creek. The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border or include portions of Bonita Creek. Gila chub are expected throughout Bonita Creek. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments, although BLM authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain over 30% BLM lands.

Formal consultation was completed in 2008 to establish populations of the chub, other fish species, the CLF, and the umbel in the San Pedro RNCA (and Las Cienegas National Conservation Areas which not addressed in this consultation) (# 22410-2008-F-0103). The stockings are planned for six sites in the SPRNCA. None of these sites have permitted livestock grazing.

Critical Habitat

Critical habitat has been designated in the action area at Mineral Creek and in the Muleshoe EMA. Mineral Creek critical habitat extends from its confluence with Devil's Canyon upstream approximately 7.5 miles to the Forest Service boundary. It does not include BLM lands, but occurs on non-Federal lands in the Sleeping Beauty Mountain (6099) (2 miles) and Government Springs (4544) (5.5 miles) allotments. The habitat PCEs are present for chub from Devil's Canyon upstream to Lyons Canyon, but this area does not meet the non-native PCE because of the high densities of green sunfish (Glen Knowles, pers. comm.). The PCEs are not present upstream of Lyons Canyon due to the ephemeral nature of the stream. Critical habitat in the Muleshoe EMA includes approximately six miles in Redfield Canyon and approximately ten miles in Bass/Hot Springs Canyon, and is within the Muleshoe and C-Spear allotments. These areas likely provide sufficient PCEs and currently contain chub. The Muleshoe allotment contains over 30% BLM lands.

Recovery and Critical Habitat Management

No recovery plan has been drafted or finalized for the Gila chub, but the critical habitat designation (70 FR 66701) lists the actions that may adversely affect critical habitat. They include actions that would significantly alter the minimum flow or the natural flow regime, the watershed characteristics, the channel morphology, the water chemistry, or that would introduce, spread, or augment nonnative aquatic species into any of the designated stream segments. Improper livestock management could affect all of these PCEs. Critical habitat managed to maintain or improve the PCEs for Gila chub over time will not significantly alter these PCE characteristics, and should maintain or improve these characteristics.

The BLM has Standards and Guidelines, and conservation measures that eliminate or minimize the effects to these characteristics.

The currently occupied and future reestablishment sites within the action area have been and continue to be adversely affected by natural events, such as fire, flood, or drought, and from non-native species invasions, water withdrawal, improper livestock grazing, recreational activities, and/or other land-use practices on public and private lands. The BLM, along with FWS, TNC, and AGFD, has committed to maintaining the current and future occupied sites, and possibly pursuing other sites for reestablishment. Past and current actions in the action area may result in some potential sites not being an option for reestablishment, but with the current commitments from the BLM and other organizations, the current chub sites will likely be maintained in the long-term, and chub will be reestablished in other sites. See the 1997 BO for additional environmental baseline information.

Gila topminnow

Within the action area, Gila topminnow populations exist at six sites, including Cienega Creek, Mattie Canyon, Empire Gulch, Cold Spring, Howard Well, the Aravaipa Canyon area, Mescal Warm Springs, the Muleshoe area, and Bonita Creek. Future reestablishments that are covered as part of previous consultations include Howard and Posey well in the San Simon Valley, and in the SPRNCA. Gila topminnows no longer occupy the Big Spring, Watson Wash, or Martin Well sites

due to loss of habitat. Cienega Creek, Mattie Canyon, and Empire Gulch are addressed in the Las Cienega NCA Resource Management Plan BO.

Gila topminnow occupy suitable habitat at two pools at Cold Spring Seep on the Day Mine Allotment (46040). Cold Spring Seep is characterized by cienega type habitat that borders two pools. The vegetation acts as a buffer by capturing and retaining sediments and pollutants that otherwise would enter the pools and potentially affect water quality. Annual surveys at the site conducted by the BLM indicate that populations are stable and relatively secure. The Day Mine allotment contains over 30% BLM lands.

Parson's Grove, located on the South Rim Allotment (45290) of Aravaipa Creek, was stocked in October 2005 with desert pupfish and Gila topminnow, along with additional sites on TNC property. Follow-up surveys conducted by the BLM and The Nature Conservancy (TNC) have failed to collect desert pupfish or Gila topminnow at Parson's Grove. Both species appear to be doing well and are reproducing at both TNC sites. In 2008, Gila topminnows were stocked into Oak Grove Canyon on TNC property. Monitoring has documented their movement downstream onto BLM lands. Stocking in future years will continue in other suitable sites in the general area, along with supplemental stockings in the recently stocked sites to establish and maintain genetic integrity of these small populations. Formal consultation was completed for these establishments on BLM and TNC land in the Aravaipa Creek Watershed reestablishment BO (#02-21-04-F-0022). All three allotments contain more than 30% BLM lands.

Mescal Warm Spring, located in the Mescal Mountain Allotment (4509), was enlarged and stocked with Gila topminnow in 1985. Mescal Warm Spring is located on a small mesa in the Needle's Eye Wilderness above Mescal Creek near the Gila River. The spring surfaces near two large cottonwoods inside a livestock exclosure and flowed through thick grass and riparian vegetation before going subsurface near the edge of the mesa where it drops into Mescal Creek. Voeltz (2006) found that sampling was very difficult in the thick brush, the water is very shallow (less than four inches deep), and no pools are found. Topminnow were collected there consistently through 1996 but none were captured in 2001 or 2003 (Voeltz 2006). A thorough survey conducted in June of 2009 by the BLM and AGFD found no Gila topminnow. This exclosure is no longer functional. Riparian habitat has been degraded by warm season livestock grazing and lounging with stream banks broken down and heavily trampled. The thick brush described above in 2006 was not evident in 2009. All habitat was shallow and open for easy observation (BLM files 2009). Mescal Mountain Allotment contains more than 30% BLM lands.

Formal consultation was completed in 2005 (#02-21-04-F-0454) to reestablish four native fish species within the Muleshoe EMA. This project resulted in Gila topminnow being established in the Hot Springs and Redfield canyons areas. Topminnow were reestablished in 2007 and augmented in 2008 in Swamp Springs Canyon and Cherry Spring Canyon. Three additional sites located on TNC property were stocked in 2007, 2008 and 2009 and two were augmented in 2010. Additional stockings are planned for future years. The three active allotments within the Muleshoe EMA that have, or will have, topminnow within or adjacent include the Muleshoe (44010), C-Spear (44090), and Soza Mesa (44020) allotments. Topminnow currently occur on the Muleshoe allotment (BLM and TNC lands). The Muleshoe and Soza Mesa allotments contain more than 30% BLM lands.

Formal consultation for the proposed reestablishment of Gila topminnow at Howard Well and Posey Well was completed in 2007 (#22410-2007-F-0225). Invasion of cattails and accumulation of sediment and organic materials reduced or eliminated topminnow habitat at this site by 1993. In 2006, the aquatic and riparian habitat was restored to maintain open water habitat for this species. Associated riparian and aquatic vegetation is lush and largely unaffected by human disturbance. Gila topminnow were found at Howard Well in 2009 (not specifically released, but possibly transported (undetected) with desert pupfish in an earlier release). Releases of Gila topminnow are planned at the wells in the near future. Both wells occur on the Fan Allotment (51140), which contains more than 30% BLM lands.

Formal consultation was completed in 2007 to reestablish four native fish species, including Gila topminnow, within Bonita Creek (22410-2007-F-0233). Gila topminnows were established in Bonita Creek in the fall of 2008 and augmented in fall of 2010, with future augmentations possible. See discussion above for the desert pupfish regarding an MOU, City of Safford activities, and a fish barrier on Bonita Creek. The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border or include portions of Bonita Creek. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments, although the BLM authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain more than 30% BLM lands.

Formal consultation was completed in 2008 to establish populations of the topminnow, other fish species, the CLF, and the umbel in the San Pedro RNCA (and Las Cienegas National Conservation Areas which not addressed in this consultation) (# 22410-2008-F-0103). The stockings are planned for six sites in the SPRNCA. None of these sites have permitted livestock grazing.

Three additional sites analyzed in the 1997 BO are now unsuitable for Gila topminnow, including Big Spring, Watson Wash, and Martin Well.

Gila topminnow have not been detected at Big Spring (Bryce allotment #46080) since 1991 due to loss of suitable aquatic and riparian habitats. The watershed above Big Spring is flashy and sends scouring floods down the incised channel. Riparian development is sparse and unstable at this site. The majority of Gila topminnow habitat at Big Spring was washed out by a large flood event in 1990. The pool habitat located behind the small concrete dam filled in with sediment and the remaining few hundred yards of habitat is very shallow and lacks habitat diversity. The site is currently unoccupied based on the lack of sufficient habitat (D. Duncan, pers. comm.).

Watson Wash is a thermal artesian hot well that was illegally drilled in the 1950s. Gila topminnow were illegally stocked into Watson Wash in the late 1980s. In addition to Gila topminnow, non-native red shiner, common guppy, and mosquitofish were stocked and shortly afterwards Gila topminnow disappeared from the site (surveys in 1999, 2000, 2003, 2004, and 2006 failed to find Gila topminnow). On May 25, 2006, the Safford Field Office issued an emergency closure and capped the well due to a history of documented illegal activities that were beginning to escalate and threaten human health and safety. Emergency consultation was completed for this action on August 23, 2006 (#22410-2006-IE-0610). Prior to the artesian well being capped, BLM, Safford Field Office personnel conducted extensive fish surveys at Watson Wash on May 18, 23, and 25, 2006 for Gila topminnow. Portions of the vegetation surrounding

Watson Wash were cleared with a chainsaw to facilitate sampling to ensure no potential aquatic habitat was missed. Safford Field Office personnel did not find any Gila topminnow. Non-native mosquitofish, common guppy, and bullfrog were found. Watson Wash no longer supports habitat suitable for Gila topminnow.

A single Gila topminnow was collected from Martin Well in 1989. Mosquitofish and green sunfish were subsequently illegally stocked and persisted until the pond dried in the mid 1990s. Currently, this site is used as a water source for livestock and no longer supports suitable habitat for native fishes.

The currently occupied and anticipated future reestablishment sites within the action area have been and continue to be adversely affected by natural events, such as fire, flood, or drought, and from non-native species invasions, water withdrawal, improper livestock grazing, recreational activities, and/or other land-use practices on public and private lands. The BLM, along with FWS, TNC, and AGFD, has committed to maintaining the current and future occupied sites, and possibly pursuing other sites for reestablishment. Past and current actions in the action area may result in some potential sites not being an option for reestablishment, but with the current commitments from the BLM and other organizations, the current Gila topminnow sites will likely be maintained in the long-term, and Gila topminnow will be reestablished in other sites. See the 1997 BO for additional environmental baseline information.

Little Colorado spinedace

The BLM administers allotments adjacent to and within the Chevelon Creek, Clear Creek, LCR main stem, and Silver Creek drainages. All of these drainages are or may be occupied by the Little Colorado spinedace, although distribution is patchy and dependent upon the presence of water, and absence or low levels of non-native fishes and crayfish. Below is a status summary in the action area. Refer to the Status of the Species for additional information.

Clear Creek: Spinedace occupy tributaries upstream of the action area, including East Clear Creek, so individuals could occur downstream in Clear Creek from the Forest Service boundary to the confluence with the LCR depending on flood events and available habitat. Relic Point (6024) and Gravel Pit (6098) allotments include portions of Clear Creek within their boundaries. The Relic Point Allotment comprises 120 acres of BLM land. The majority of the acreage is in the bottom of Clear Creek, but topography is such that it is inaccessible by livestock. There are no BLM lands along Clear Creek within the Gravel Pit Allotment. Livestock may have access to Clear Creek through non-Federal lands in both allotments. There are no livestock water improvements on BLM land in either allotment. Both allotments contain less than 30% BLM lands.

Chevelon Creek: The species occupies a section of Chevelon Creek several miles upstream of Chevelon Creek's confluence with the LCR, which includes portions of the Chevelon Creek North (6114) and Potato Wash (6087) allotments, though the known occupied area does not occur in or adjacent to BLM lands. The Chevelon Creek North Allotment includes 520 acres adjacent to Chevelon Creek. Rock Creek Tank provides water to livestock and wildlife and is located approximately one mile west of Chevelon Creek in the Rock Canyon Drainage on BLM land. The Potato Wash Allotment has 640 acres of BLM land through which Chevelon Creek flows. There

are no livestock water improvements on BLM land within this allotment. Due to topography, livestock are not able to access the riparian areas of these allotments. Both allotments contain less than 30% BLM lands.

Silver Creek: As stated above, spinedace were thought to be extirpated from Silver Creek until a small number of fish were discovered in lower Silver Creek in July 1997 (Lopez *et al.* 1999). However, surveys since then have failed to find spinedace. It is believed that changes to the habitat since 1997 have likely increased habitat for non-native fishes and impacted the ability to capture spinedace during surveys. If spinedace are still present in Silver Creek, it may be that they exist at such low numbers that current sampling techniques are insufficient to detect them in this altered habitat. However, for this analysis, the entire Silver Creek is considered to be occupied. Washboard Wash (6007), White Mountain Lake (6034), Flint Knoll (6228), F Bar (6047), and The Divide (6052) allotments include portions of Silver Creek. Silver Creek flows on BLM lands on the Washboard Wash, but livestock are excluded from this portion by a fence except at the Woodruff Dam. Livestock have access along the west side of the creek from above the dam for about 1000 feet, which is used by livestock as a water source. This area is water backed up by the dam, with substantial trash and damage from recreation and other uses. It provides poor habitat characteristics for spinedace. The BLM consulted on the Washboard Wash Allotment grazing activities in 1999 and received a concurrence letter (02-21-01-I-0063) for the re-authorization of the 10-year grazing permit for the Washboard Allotment and Silver Creek fencing project. No BLM lands occur along Silver Creek in the F Bar Allotment, but about nine miles of Silver Creek flows within the allotment. Livestock do not have access to this portion of Silver Creek in the F Bar Allotment because of steep topography, but they likely have access to other portions of Silver Creek in the allotments through non-Federal lands. There are no livestock water improvements on BLM land in any of these allotments. None of these allotments contain more than 30% BLM lands.

Little Colorado River: Spinedace are documented in the LCR from Springerville downstream to St. Johns, Arizona (Dorum and Young 1995), and possibly occur from the confluence with Silver Creek downstream to Woodruff. The surveys conducted in 2008 by the AGFD and BLM located spinedace above Lyman Lake in the LCR. In 2009, during their annual surveys, BLM collected spinedace at their LCR monitoring site that is located above Lyman Lake. The Scraper Knoll (6069), Little Colorado River (6232), Lyman Lake South (6231), Mexican Wash (6180), and Little Reservoir (6159) allotments include portions of the LCR that could have spinedace. The LCR flows through BLM land in the Little Colorado River and Mexican Wash allotments. The LCR in the Little Colorado River allotment is excluded from livestock use by a fence. The LCR in the Mexican Wash allotment is excluded from livestock use by steep topography. A parcel of BLM land in the Little Reservoir allotment is adjacent to Lyman Lake, and livestock have access to the lake through this parcel. Livestock likely access some portions of the LCR through non-Federal land in all the allotments. There are no livestock water improvements on BLM land within these allotments. The Little Colorado allotment contains more than 30% BLM lands. The other allotments contain less than 30% BLM lands.

Most of the allotments in the above-mentioned watersheds contain less than 30% BLM lands. Watershed effects to spinedace may be occurring throughout the areas, but, realistically, decrease the farther they occur from spinedace habitat. For this analysis, we consider watershed effects from livestock management in allotments within five miles of spinedace habitat. Besides the

allotments detailed in the previous paragraphs, the other permitted allotments within five miles of spinedace habitat include the Pink Cliffs (6058, in the Chevelon Creek drainage), Bar A (6178, in the Silver Creek drainage), and Big Hollow Wash (6070, in the LCR drainage) allotments. Only the Bar A allotment contains more the 30% BLM lands.

Critical Habitat

Eight miles of critical habitat along Chevelon Creek in Navajo County occur within the action area, with approximately one mile occurring adjacent to or within the Chevelon Creek North Allotment. The condition of this eight-mile segment is not known. No BLM land includes critical habitat. The closest BLM land parcel is two miles upstream of critical habitat.

Recovery and Critical Habitat Management

The recovery plan identified overgrazing by ungulates on the watershed as a contributing factor to deposition of sediments. The plan recommends a reduction or cessation of grazing as an action to enhance habitats for reintroduction. The listing (52 FR 25034) identifies grazing as one of the reasons for habitat alteration that resulted in the decline of the species. Properly managing the uplands adjacent and near the critical habitat should contribute to maintaining or improving the critical habitat for recovery. The BLM will manage the Chevelon Creek North allotment to meet the standards and guidelines, including managing the uplands to meet Standard 1.

Factors affecting spinedace habitat, including critical habitat, within the action area include livestock grazing, water diversions and groundwater pumping, water quality, competition and predation from non-native fishes and crayfish, and drought. These factors are not unique to the LCR drainage, but are extremely widespread throughout the main stem and in Silver and Chevelon creeks. In addition, currently there are on-going discussions regarding potential increased groundwater and surface water withdrawal from Chevelon Creek and the LCR that may result in adverse effects to the spinedace and its habitat within the action area, but that are not associated with the proposed action.

Loach minnow

Known occupied loach minnow habitat on or downstream from BLM lands in the action area occurs in Aravaipa Canyon (including Aravaipa, Deer, and Turkey creeks), the Muleshoe area, Bonita Creek, and the San Francisco River. Future reestablishment includes additional stockings in Bonita Creek and the Muleshoe area. All other occupied habitat is located upstream from BLM allotments, or in drainages owned or managed by other agencies or landowners, and not adjacent to BLM allotments. Potential habitat may exist in other creeks and rivers that flow through BLM lands in the action area, but none of these areas have been specifically identified.

Aravaipa Canyon supports the most protected loach minnow populations due to special use designations on BLM land (such as wilderness designation), substantial ownership and protective management by The Nature Conservancy, and ephemeral reaches and fish barriers located downstream that act to prevent invasion of non-native fish species. Loach minnow are found in Aravaipa Creek from the downstream non-native fish barriers upstream to above Turkey Creek, in Deer Creek upstream from its confluence with Aravaipa Creek to the Aravaipa Canyon

Wilderness boundary, and occasionally in the lower most segment of Turkey Creek next to its confluence with Aravaipa Creek. Intensive monitoring has demonstrated that loach minnow persist in the Aravaipa Creek area, and the populations are likely stable. River and riparian habitat along Aravaipa Creek and Deer Creek areas provide high quality loach minnow habitat. There is a risk from non-native fish invading the canyon, especially red shiner, and from livestock waters located in the uplands either adjacent to or in tributary canyons that drain into Aravaipa that may harbor non-native aquatic organisms. Aravaipa Creek maintains a self-sustaining population of loach minnow that varies in number from year to year. The Deer Creek population, discovered in 1995, is small and as of April 2008 is still persisting. The South Rim (4529), Brandenburg Mountain (4530), and Hell Hole (4528) allotments include portions of Aravaipa Creek and Deer Creek in the wilderness area and to the west of the wilderness area, but these areas are excluded from livestock grazing. The South Rim allotment also includes Aravaipa Creek to the east of the wilderness area and Turkey Creek, but these areas are not currently grazed (non-use). The South Rim and Hell Hole allotments contain more than 30% BLM lands. See the 1997 BO for additional baseline information.

The status of loach minnow in the San Francisco River in the action area (above Clifton) is the same as that described in the RMP BO and the 1997 BO. While loach minnow could occur in the San Francisco River, recent surveys above Clifton to the National Forest boundary have failed to collect loach minnow; however, survey efforts have been irregular and limited in scope. Some aspects of the San Francisco River above Clifton remain in good condition (*e.g.*, base flow, presence of riffles with large substrate), but other habitat components such as riparian development and bank stability appear to be poor. Riparian conditions on BLM lands along the San Francisco River range from functional at risk to properly functioning (causes not known, but livestock grazing may have contributed). Under present conditions the riparian vegetation has little to no influence on river habitat and character. A wide range of non-native fish species, including several predators, occur in the aquatic habitat of the San Francisco River. The downstream distribution of the loach minnow in the San Francisco River likely fluctuates over time depending upon water levels, flooding, and other factors that may move loach minnow downstream onto BLM, State, and private lands for short periods of time. The San Francisco Allotment (4002) includes a portion of the San Francisco River, but BLM land in this area is excluded from livestock grazing by a fence, and trailing is limited to ¼ mile at no more than twice per year. The Red Hickey Hills Allotment (4005) includes a portion of the San Francisco River, but all BLM lands are above the river and not within the riparian area. Livestock grazing likely occurs along the river on non-Federal lands in these two allotments. Portions of the Metcalf Allotment (4001) include the San Francisco River. Topography limits livestock use in the allotment along the river, but livestock from this allotment occasionally occur along the river. The Metcalf allotment permittees remove livestock from along the river as soon as possible when they are notified by the BLM or local landowners (Tim Goodman, pers. comm.). The San Francisco River and Red Hickey Hills allotments contain greater than 30% BLM lands.

Formal consultation was completed in 2005 (#02-21-2007-F-0233) to reestablish four native fish species within the Muleshoe EMA. Loach minnow were reestablished in the Redfield and Hot Springs canyons in 2007. Augmentations occurred in 2008 and 2009 for Redfield Canyon and in 2008, 2009, and 2010 for Hot Springs Canyon. Future augmentations will be considered until loach minnow established self-sustaining populations or it is decided that current habitat conditions will prevent their establishment. The three active allotments within the Muleshoe

EMA that have, or may have in the future, loach minnow within or adjacent include the Muleshoe (44010), C-Spear (44090), and, Soza Mesa (44020) allotments. Loach minnow currently occur in the Muleshoe allotment. The Muleshoe and Soza Mesa allotments contain more than 30% BLM lands.

Formal consultation was completed in 2007 to reestablish four native fish species, including loach minnow, within Bonita Creek (22410-2007-F-0233). Loach minnow was reestablished in Bonita Creek in 2008 and augmented in 2010, with additional augmentations planned in future years. See discussion above for the desert pupfish regarding an MOU, City of Safford activities, and a fish barrier on Bonita Creek. The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border or include portions of Bonita Creek. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments, although the BLM authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain more than 30% BLM lands.

Critical Habitat

In the action area, critical habitat has been designated in Aravaipa Creek from the confluence with the San Pedro River upstream to Stowe Gulch (approximately 28 miles), Turkey Creek extending from the confluence with Aravaipa Creek upstream to the confluence with Oak Grove Canyon (approximately 3 miles), Deer Creek extending from the confluence with Aravaipa Creek upstream to the boundary of the Aravaipa Wilderness (approximately 2 miles), San Francisco River from the confluence with the Gila River north to the Forest Service boundary (approximately 20 miles), in the Muleshoe Area (Hot Springs Canyon for approximately six miles, Redfield Canyon for approximately four miles, Bass Canyon for approximately three miles), and Bonita Creek (approximately 15 miles).

The South Rim (4529), Hell Hole (4528), and Brandenburg Mountain (4530) allotments include portions of critical habitat in Aravaipa Creek, Turkey Creek, and Deer Creek, but these areas are excluded from livestock grazing or are in non-use. Aravaipa and Deer creeks, which are occupied by loach minnow, apparently have all the PCEs that are sufficient to maintain the species. Critical habitat to the east (upstream) of the South Rim allotment also likely has all the PCEs, but livestock grazing may occur on these non-Federal lands. Critical habitat to the west (downstream) of Brandenburg Mountain allotment occurs only on non-Federal lands. Aravaipa Creek downstream of the Brandenburg Mountain allotment and Turkey Creek may maintain most PCEs for loach minnow, but low or no water flows through part of most years may limit loach minnow presence.

The San Francisco Allotment (4002) includes critical habitat along the San Francisco River, but this area is excluded from livestock grazing by a fence, and trailing is limited to ¼ mile of the river at no more than twice per year. The Red Hickey Hills Allotment (4005) includes a portion of critical habitat along the San Francisco River, but all BLM lands are above the river and not within the riparian area. Livestock grazing occasionally occurs along the river in the non-Federal portions of these two allotments. Portions of the Metcalf Allotment (4001) are adjacent to critical habitat (across from the Red Hickey Hills allotment), but topography limits livestock access to the river (livestock use occurs occasionally, but permittees quickly remove livestock when notified; Tim Goodman, pers. comm.). The Smuggler Peak Allotment contains approximately four miles of loach minnow critical habitat. Smuggler Peak has a winter season of use along the San Francisco

River. Most PCEs are present at varying quality and quality in the San Francisco River, but the presence of non-native species is likely limiting the presence of loach minnow.

Within the Muleshoe area, critical habitat occurs within the Muleshoe allotment (44010) (all of the critical habitat in Hot Springs and Bass canyons, and a small portion of the critical habitat in Redfield Canyon) and the C-Spear allotment (44090) (most of Redfield Canyon critical habitat). The Muleshoe allotment contains more than 30% BLM lands. All PCEs are likely present in the areas.

Critical habitat in Bonita Creek flows through or adjacent to Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments, although the BLM authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain more than 30% BLM lands. All PCEs are present in Bonita Creek, but the presence of non-natives through portions of the creek, as well as changes to the habitat due to beaver dams and lack of flushing flows, may be limiting the success of the reestablishments.

Recovery and Critical Habitat Management

The recovery plan identified livestock grazing as directly impacting stream habitat, and indirectly affecting riparian areas through watershed effects. The only recovery objective related to livestock management is to manage protected lands in ways that are consistent with the perpetuation of loach minnow populations. The listing (77 FR 10810) lists the actions that may destroy or adversely modify critical habitat, which includes improper livestock management that may result in excessive sedimentation, altering the water chemistry, or actions that would introduce, spread, or augment nonnative fish. Critical habitat managed to maintain or improve the PCEs for loach minnow over time will maintain or improve these characteristics.

The BLM has Standards and Guidelines, and conservation measures that eliminate or minimize the effects to these characteristics.

The currently occupied and anticipated future reestablishment sites, as well as critical habitat, within the action area have been and continue to be adversely affected by natural events, such as fire, flood, or drought, and from non-native species invasions, water withdrawal, livestock grazing, recreational activities, and/or other land-use practices on public and private lands. The BLM, along with FWS, TNC, and AGFD, has committed to maintaining the current and future occupied sites, and possibly pursuing other sites for reestablishment. Past and current actions in the action area may result in some potential sites not being an option for reestablishment, but with the current commitments from the BLM and other organizations, the current loach minnow sites will likely be maintained in the long-term, and loach minnow will be reestablished in other sites. See the 1997 BO for additional environmental baseline information.

Spikedace

Known occupied spikedace habitat on or downstream from BLM lands in the action area occurs in Aravaipa Creek, the Muleshoe area, Bonita Creek, and Eagle Creek. Future reestablishment

includes additional stockings in Bonita Creek and the Muleshoe area. Spikedace possibly exists in the middle Gila River area, but no individuals have been documented since 1991. All other occupied habitat is located upstream from BLM lands, or in drainages owned or managed by other agencies or landowners, and not adjacent to BLM lands. Potential habitat may exist in other creeks and rivers that flow through BLM lands in the action area, but none of these areas have been specifically identified.

Aravaipa Canyon supports the most protected spikedace populations due to special use designations on BLM land (such as wilderness designation), substantial ownership and protective management by The Nature Conservancy, and ephemeral reaches and fish barriers located downstream that act to prevent invasion of non-native fish species. Spikedace are found from the midpoint of the canyon at Horse Camp Wash upstream to above Turkey Creek. It is believed that spikedace occurred throughout the canyon at one time, but have been virtually absent from the lower reaches of Aravaipa Canyon since the 1970s, mainly due to low or no water flows. Spikedace numbers have increased in the upper reaches of Aravaipa Canyon as a result of aquatic habitat improvement. Intensive monitoring has demonstrated that spikedace persist in the Aravaipa Creek area, and the populations are likely stable. River and riparian habitat along Aravaipa Creek provide high quality spikedace habitat. There is a risk from non-native fish invading the canyon, especially red shiner, and from livestock waters located in the uplands either adjacent to or in tributary canyons that drain into Aravaipa that may harbor non-native aquatic organisms. Aravaipa Creek maintains a self-sustaining population of spikedace that varies in number from year to year. The South Rim (4529), Brandenburg Mountain (4530), and Hell Hole (4528) allotments include portions of Aravaipa Creek in the wilderness area and to the west of the wilderness area, but these areas are excluded from livestock grazing. The South Rim allotment also includes Aravaipa Creek to the east of the wilderness area, but these areas are not currently grazed (non-use). See the 1997 BO and the BA for additional baseline information. The South Rim and Hell Hole allotments contain more than 30% BLM lands.

Spikedace currently occurs in Eagle Creek in the action area near the San Carlos Reservation boundary. Older records for spikedace occur in downstream areas, and the stream is considered occupied by spikedace (M. Richardson, pers. comm.) All localities for the fish are on private lands in the Morenci (4003) or Turtle Mountain (4618) allotments. The Turtle Mountain allotment contains more than 30% BLM lands.

Formal consultation was completed in 2005 (#02-21-2007-F-0233) to reestablish four native fish species within the Muleshoe EMA. Spikedace were reestablished in the Redfield and Hot Springs canyons in 2007. Augmentations occurred in 2008 and 2009 for Redfield Canyon and in 2008, 2009, and 2010 for Hot Springs Canyon. Future augmentations will be considered until spikedace establish self-sustaining populations or it is decided that current habitat conditions will prevent their establishment. The three active allotments within the Muleshoe EMA that have, or may have in the future, spikedace within or adjacent include the Muleshoe (44010), C-Spear (44090), and, Soza Mesa (44020) allotments. Spikedace currently occur in the Muleshoe allotment. The Muleshoe and Soza Mesa allotments contain more than 30% BLM lands.

Formal consultation was completed in 2007 to reestablish four native fish species, including spikedace, within Bonita Creek (22410-2007-F-0233) in future years. Spikedace were stocked in 2008, and augmented in 2010 with augmentations planned for future years until the population

becomes self-sustaining. See discussion above for the desert pupfish regarding an MOU, City of Safford activities, and a fish barrier on Bonita Creek. The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border or include portions of Bonita Creek. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments. The Grazing program authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain more than 30% BLM lands.

Critical Habitat

In the action area, critical habitat has been designated in Aravaipa Creek from the confluence with the San Pedro River upstream to Stowe Gulch (approximately 28 miles), Turkey Creek extending from the confluence with Aravaipa Creek upstream to the confluence with Oak Grove Canyon (approximately 3 miles), San Francisco River from the confluence with the Gila River north to the Forest Service boundary (approximately 20 miles), in the Muleshoe Area (Hot Springs Canyon for approximately six miles, Redfield Canyon for approximately four miles, Bass Canyon for approximately three miles), and Bonita Creek (approximately 15 miles).

The South Rim (4529), Hell Hole (4528), and Brandenburg Mountain (4530) allotments include portions of critical habitat in Aravaipa Creek, but these areas are excluded from livestock grazing or are in non-use. These areas, which are occupied by spikedace, apparently have all the PCEs that are sufficient to maintain the species. Critical habitat to the east (upstream) of the South Rim allotment also likely has all the PCEs, but livestock grazing may occur on these non-Federal lands. Critical habitat to the west (downstream) of Brandenburg Mountain allotment occurs only on non-Federal lands. Aravaipa Creek, downstream of Brandenburg Mountain allotment, may maintain most PCEs for spikedace, but low or no water flows through part of most years may limit spikedace presence.

The San Francisco Allotment (4002) includes critical habitat along the San Francisco River, but this area is excluded from livestock grazing by a fence, and trailing is limited to ¼ mile of the river at no more than twice per year. The Red Hickey Hills Allotment (4005) includes a portion of critical habitat along the San Francisco River, but all BLM lands are above the river and not within the riparian area. Livestock grazing occasionally occurs along the river in the non-Federal portions of these two allotments. Portions of the Metcalf Allotment (4001) are adjacent to critical habitat (across from the Red Hickey Hills allotment), but topography limits livestock access to the river (livestock use occurs occasionally, but permittees quickly remove livestock when notified; Tim Goodman, pers. comm.). The Smuggler Peak Allotment contains approximately four miles of loach minnow critical habitat. Smuggler Peak has a winter season of use along the San Francisco River. Most PCEs are present at varying quality and quality in the San Francisco River, but the presence of non-native species is likely limiting the presence of spikedace.

Critical habitat along Bonita Creek flows through or along Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments. Grazing has been excluded from all riparian areas administered by the BLM within the Bonita Creek, Johnny Creek, and Bull Gap allotments, although the BLM authorizes annual livestock drives down the riparian corridor on the Bonita Creek Allotment. All three allotments contain more than 30% BLM lands. All PCEs are present in Bonita Creek, but the presence of non-natives through portions of the creek, as well as changes

to the habitat due to beaver dams and lack of flushing flows, maybe limiting the success of the reestablishments.

Within the Muleshoe area, critical habitat occurs within the Muleshoe allotment (44010) (all of critical habitat in Hot Springs and Bass canyons, and a small portion of the critical habitat in Redfield Canyon) and the C-Spear allotment (44090) (most of Redfield Canyon critical habitat). Both allotments contain more than 30% BLM lands. All PCEs are likely present in the areas.

Recovery and Critical Habitat Management

The recovery plan identified livestock grazing as directly impacting stream habitat, and indirectly affecting riparian areas through watershed effects. The only recovery objective related to livestock management is to manage protected lands in ways that are consistent with the perpetuation of spikedace populations. The listing (77 FR 10810) lists the actions that may destroy or adversely modify critical habitat, which includes improper livestock management that may result in excessive sedimentation, altering the water chemistry, or that would introduce, spread, or augment nonnative fish. Critical habitat managed to maintain or improve the PCEs for spikedace over time will maintain or improve these characteristics.

The BLM has Standards and Guidelines, and conservation measures that eliminate or minimize the effects to these characteristics.

The currently occupied and anticipated future reestablishment sites, as well as critical habitat, within the action area may be adversely affected by natural events, such as fire, flood, or drought, and from non-native species invasions, water withdrawal, improper livestock grazing, recreational activities, and/or other land use practices on public and private lands. The BLM, along with FWS, TNC, and AGFD, has committed to maintaining the currently and future occupied sites, and possibly pursuing other sites for reestablishment. Past and current actions in the action area may result in some potential sites not being an option for reestablishment, but with the current commitments from the BLM and other organizations, the current spikedace sites will likely be maintained in the long-term, and spikedace will be reestablished in other sites. See the 1997 BO for additional environmental baseline information.

Razorback sucker

The environmental baseline for the razorback sucker is similar to that described in the 1997 BO and the BA. The Gila River from the New Mexico state line to Coolidge Dam is likely occupied by suckers, and Bonita Creek, Eagle Creek, and the San Francisco River are possibly occupied. The species is considered to be very rare in these areas - surveys in all of these waters have not detected a sucker since one was documented in Bonita Creek in 1991. Suckers are considered to occur infrequently within the Bonita Creek (4616), San Francisco (4002), Red Hickey Hills (4005), Morenci (4003), Smugglers Peak (4010), Harper (5024), Zorilla (4011), Gila (4014), Twin C (4021), Sheldon Mountain (5035), Johnny Creek (4615), Bull Gap (4617), and Turtle Mountain (4618) allotments. All but the Morenci Allotment contain greater than 30% BLM lands. However, a large portion of the allotments in the Safford Field office are within the watershed of the Gila River (1997 BO, Table 8, Page 58), and therefore may have indirect effects to razorback suckers and their habitat.

Flooded bottomland is not a common habitat feature along BLM-administered portions of the Gila River, San Francisco River, or Bonita Creek. However, the other habitat elements at varying quality and quantity for the sucker occur on the Gila and San Francisco rivers. Bonita Creek is a medium-sized stream averaging about 10 CFS. The confluence of Bonita Creek and the Gila River may provide habitat for spawning and maturation of young suckers, which can then migrate downstream to the Gila River.

Critical Habitat

Critical habitat within the action area is the 100-year floodplain for the Gila River from the New Mexico state line to Coolidge Dam. Critical habitat occurs within the Bonita Creek (4616), Morenci (4003), Smugglers Peak (4010), Harper (5024), Zorilla (4011), Gila (4014), Twin C (4021), Sheldon Mountain (5035), and Bull Gap (4617) allotments. Most of the critical habitat is non-Federal lands, with BLM lands making up very little critical habitat. PCEs for one or more life stages of the sucker exist throughout the designation, though the quality of habitat is low throughout most of the system.

Recovery and Critical Habitat Management

The recovery plan did not address livestock grazing in any recovery objective, nor did it address it as one of the limiting factors. The critical habitat designation (59 FR 13387) lists the actions that may destroy or adversely modify critical habitat, which includes grazing, but gives no specifics on what factors would be affected. The only information available is the general PCEs as presented in the Status of the Species. We assume that critical habitat managed to maintain or improve the PCEs for sucker over time will contribute to recovery. The BLM has Standards and Guidelines, and conservation measures that eliminate or minimize the effects to these characteristics.

The biological component of the Gila River Watershed within the action area has been altered by the loss of co-occurring native fishes, and the addition of predatory and competitive non-native fishes. With the exception of upper Bonita Creek, healthy populations of a wide range of non-native fishes, including catfish, which are known to forage heavily on small suckers, dominate the aquatic habitat.

The sucker has declined in numbers largely due to the introduction and proliferation of non-native fishes such as flathead catfish, black bullhead, channel catfish, and carp through predation and competition food and space. Before large numbers of non-native fish were stocked into streams, rivers, and reservoirs, sucker spawning resulted in successful recruitment. Other impacts from human activities have and are occurring, including water diversions, flood control projects, livestock grazing, timber harvest, recreational activities, and changes in annual flows due to off-stream use of water. All of the actions have impaired the ability of the aquatic habitats, including critical habitat PCEs, to support native fish. See the 1997 BO for additional environmental baseline information.

Huachuca water umbel

All umbel populations in the action area are found on the San Pedro Riparian National Conservation Area (SPRNCA), where the species has been monitored since 2000. The latest report (Engineering and Environmental Consultants 2008) documented 28 water umbel locations along 33.7 miles within the SPRNCA. Only two allotments (Babocomari (5208) and Brunchow Hill (5251) have sites that may be occupied by umbel where livestock are permitted. The Babocomari Allotment may have umbel on the non-Federal portion, with possible habitat on the BLM portion, but this has not been confirmed (M. Falk, pers. comm.). Approximately 2.5 miles of the Babocomari River occurs within the BLM administered portion of the Babocomari Allotment, some of which may be umbel habitat. The Brunchow Hill Allotment has had (last located in 2002), and may still have, umbel on BLM and non-Federal land. Approximately 0.3 mile of the San Pedro River is in the Brunchow Hill allotment, including approximately 500 feet on BLM administered lands. Grazing occurs in both allotments where umbel could occur on BLM lands and non-Federal lands, which is in the RNCA. The Brunchow Hill Allotment contains more the 30% BLM lands. Additional establishments of umbel are planned at new sites outside of the San Pedro River, but in the SPRNCA. Refer to the 1997 BO for additional environmental baseline for this species.

Umbel populations can be adversely affected by livestock grazing. Trampling of plants and bank habitat can negatively affect this species. The effects from livestock grazing were analyzed in the 1997 BO.

Livestock have been and continue to be a problem in the SPRNCA. By 1997, a total of 79 livestock had been removed from the SPRNCA (U.S. Fish and Wildlife Service files, Phoenix). During fisheries surveys in 2003, Stefferud and Stefferud (2003) observed light livestock use and impacts at Hereford and moderate damage to riparian resources at Highway 90. At Charleston, they observed livestock sign for the first time in 2003. Damaged streambanks and browsing of riparian vegetation was noted at Fairbank in 1996 and 1997, but not since then. Umbel can exist with light levels of grazing, and in some cases grazing can mimic natural disturbance that can reduce competing plants and open wetted areas up for water umbel colonization and growth. However, trampling, erosion, and sedimentation caused by livestock can result in local extirpations of this endangered plant.

Beaver were reestablished in the SPRNCA in 2000 and have now established a population there. Although the effects of the reestablishment were expected to be mixed, the dams and impoundments created by the beaver were anticipated to potentially recreate marshy, cienega conditions that could benefit water umbel. Effects of the beaver on water umbel and its habitat have not been investigated.

Formal consultation was completed in 2008 to establish populations of the pupfish, other fish species, the CLF, and the umbel in the San Pedro RNCA (and Las Cienegas National Conservation Areas which not addressed in this consultation) (# 22410-2008-F-0103). The stockings are planned for six sites in the SPRNCA. None of these sites have permitted livestock grazing.

The major threat to the umbel in the SPRNCA is the declining aquifer from groundwater pumping in Fort Huachuca, Sierra Vista, and other areas (see the Fort Huachuca BO #22410-2007-F-0132).

Portions of the SPRNCA are heavily used by recreationists and cross-border violators. Fires have become more common in the SPRNCA. The use of the area by cross-border violators and the ensuing law enforcement actions have, and continue to, impact the San Pedro Valley and the SPRNCA. The San Pedro River is a highly traveled corridor that continues to be negatively affected by cross-border violators. Cross-border violators leave trash and human waste, start fires, cut fences, and create trails. Law-enforcement activity creates additional traffic on area roads and trails.

These activities are likely having adverse effects on water umbel populations. The number of umbel locations seems to be stable in the SPRNCA, though individual numbers and locations may vary over time. More monitoring of the species' distribution in the SPRNCA is needed before any conclusions can be made. See the 1997 BO for additional environmental baseline information.

Critical Habitat

All of the confirmed umbel locations described above are within designated umbel critical habitat. The entire 33.7 miles of critical habitat on the San Pedro River is within the SPRNCA. There are no other areas of BLM land or other areas in the action area designated as critical habitat for the water umbel.

Recovery and Critical Habitat Management

No recovery plan has been drafted or finalized for the umbel, but the final rule designating critical habitat lists categories of actions that are likely to result in adverse modification or destruction of critical habitat, and as such, would impair or preclude recovery of the species (64 FR 37445). These include activities that alter the PCEs to the extent that the value of critical habitat for both the survival and recovery of umbel is appreciably diminished. Overgrazing is identified as an action that could result in altering watershed characteristics in ways that would appreciably reduce groundwater recharge or alter natural flooding regimes needed to maintain natural, dynamic riparian communities; appreciably degrade or destroy native riparian communities; and appreciably alter stream channel morphology. If livestock management does not result in overgrazing, then we expect that the PCEs will maintain or improve in the future for the umbel.

Peebles Navajo cactus

The status of the species in the action area is the same as described in the range-wide "Status of the Species" section. The Apache Butte allotment (6073) contains part of the Tanner Wash ACEC, including occupied habitat. This is a custodial allotment that is 21% BLM lands (6,703 acres of 32,496 acres). All BLM acres are meeting or moving toward meeting Standard 1 (Upland sites) and Standard 3 (Desired Resource Condition).

Threats to the Peebles Navajo cactus are both anthropogenic and natural. Due to the extreme rarity of the species, it is in demand by collectors (both domestic and international), and removal of plants from native habitats has been documented by Newland (1979). Livestock grazing is also a perceived threat through trampling, primarily on private lands during wet conditions when the plants are emergent (Phillips *et al.* 1979, U.S. Fish and Wildlife Service 1984b). The BLM's livestock grazing management has maintained a proactive approach to protecting known

populations by constructing fencing; however, livestock are inevitably of concern. Gravel mining and urban development are large-scale threats to the species (Arizona Game and Fish Department 1999). The construction of roads and the subsequent access to preferred habitat is also of concern to the conservation of the species. Rock and petrified wood collectors, ranchers, and off-highway vehicle recreationists use the myriad of roads within the geographical distribution of the species for various purposes (U.S. Fish and Wildlife Service 1984b). These various activities often lead to trampling and crushing of individual plants, as well as both soil erosion and compaction of the species' habitat.

Sand and gravel operations are a current threat to this species. There is an active operation on lands adjacent to the ACEC (J. Anderson, BLM, pers. comm. 2004). The owners of this mining operation have requested access to BLM lands within the ACEC for mining purposes, but the BLM has not granted this request.

One formal consultation has analyzed this species. The Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan and Amendment for Fire, Fuels, and Air Quality Management determined that the proposed actions of fire and fuels management would not result in jeopardy, mainly because actions in the species' habitat would not occur or be minimal.

Pima pineapple cactus

There are 20 allotments that have, or may have, PPC habitat, that are the same as discussed in the 1997 BO. The Twin Buttes (6001), Arivaca (6003), Ash Mountain (6015), Cerro Colorado (6023), Helvetia (6025), La Tortuga (6040), San Luis Mountain (6085), Hay Hook (6093), Anvil (6100), Hill Top (6101), Black Hills (6119), Gunnery (6133), Three Peaks (6137), Elkhorn (6175), Arroyo Seco (6186), Gunsight Mountain (6191), Sierrita (6198), Three Points (6200), Diamond Bell (6204), and Twin Buttes 2 (6208) allotments have habitat on BLM lands (1997 BO, Table 6, Page 48). These allotments are located south of Tucson and west of the Santa Rita Mountains. PPC has been recorded on the Hay Hook, Anvil, Hill Top, Black Hills, and Three Points allotments on non-Federal lands (1997 BO, Table 6, Page 48), but FWS is unaware of any locality records for PPC on BLM lands within these allotments. Habitat occurs on BLM lands in fourteen of the twenty allotments. One change from the 1997 BO is that the Hay Hook Allotment (6093) is now in nonuse. Assessments of potential PPC habitat were implemented in 1998, but the BLM has not incorporated this information into their consultation request or current analysis; therefore, the status of PPC on the BLM allotments remains as described in the 1997 BO. No systematic inventory of PPC individuals has taken place on BLM lands. BLM lands in some allotments may not contain PPC habitat, but the allotment is included in the list because the non-Federal lands in the allotment may be habitat. Due to the relatively wide distribution of this species in the action area, the condition of the habitat is likely varied. Assessment on meeting standards and guidelines for the BLM lands on ten allotments has been assessed (see Table 3), with all the BLM lands in these allotments meeting the standards and guidelines. Condition on the non-Federal lands in these allotments is not known. The Helvetia, Hay Hook, Gunnery, and Twin Buttes 2 allotments contain more than 30% BLM lands.

Livestock grazing is the main activity occurring on BLM lands that potentially support PPC. The effects of livestock grazing were discussed in the 1997 BO. Unauthorized off-road vehicle activity may also be affecting PPC on BLM and non-Federal lands in the allotments. Much of the

potential PPC habitat on BLM lands is subject to intense use by undocumented aliens and law enforcement response by the Border Patrol. We have observed many new roads, vehicle tracks, footpaths, and illegal dumping of trash in areas on Arizona State lands and at Buenos Aires National Wildlife Refuge, where much suitable habitat for PPC exists. BLM parcels are adjacent to these lands and are probably being used in a similar manner. These activities are contributing to overall habitat degradation and may be facilitating the movement of non-native species (e.g., buffelgrass (*Pennisetum ciliare*)) into desert scrub and semi-desert grassland communities that support PPC. It is not known how pervasive or widespread these activities are on BLM lands as no monitoring of PPC or habitat is taking place. Due to the isolated nature of BLM parcels in PPC habitat, these parcels may be candidates for land exchanges. We know of one land exchange that has taken place, and one that was proposed for BLM lands known to have PPC. Land exchanges to private developers are likely to lead to loss of plants and habitat, along with increased fragmentation of PPC habitat. Consultation has been completed for the Altar Valley Fire Management Plan (#22410-2005-F-0002). This Plan identifies prescription requirements for fire use on non-Federal lands in the area, some of which are near or adjacent to BLM lands. We anticipate that the guidance provided by the plan will not affect the resources on BLM lands.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to critical habitat. In particular, herein we describe how the proposed action would affect those physical or biological features (primary constituent elements –PCEs) that are essential to the conservation, including recovery, of the species, and whether such effects rise to the threshold of destruction or adverse modification. If the BLM's action would severely compromise or preclude our ability to recover a species, then that threshold has been exceeded. To evaluate whether critical habitat is likely to be destroyed or adversely modified, we assess the effects of the proposed action on the PCEs, and we compare the effects of the BLM's proposed action to the recommendations in recovery plans regarding the manner in which livestock grazing should be conducted in recovery areas (where such documents and recommendations exist) and the guidance in final critical habitat rules, which define those activities or categories of activities that may result in destruction or adverse modification of critical habitat. Thus, based on these analyses, we make determinations on whether or not the proposed action will compromise or preclude recovery of the species.

General Effects

Some general effects from the proposed actions are common to many species. Some of these proposed actions are not specifically identified, so the effects can only be discussed generally, not

specifically. All of these general effects have been thoroughly analyzed in previous documents, so only a short summary of those effects will be presented in this document. Refer to the 1997 BO and the BA for a thorough discussion of effects in general and for selected species. These effects are discussed specifically for a species in those documents if sufficient information was available.

Range improvement installation/implementation is included as part of the proposed action, but no specific projects are included. These actions may directly affect listed species, resulting in injury or death, and they may adversely affect critical habitat. Implementing conservation measures to survey before installing structures, and avoiding individuals to the extent possible, will likely result in very few individuals being affected. Installation of some structures may reduce available habitat for some species, but the very small acreage affected would be unlikely to affect the survival or reproduction of any species as a whole. Also, as described in the "SCOPE OF CONSULTATION", for structural improvement, if the anticipated effects of a proposed project exceed the anticipated effects in this opinion, the project type is not included in the "DESCRIPTION OF THE PROPOSED ACTION", or anticipated take would be met or exceeded, the project would be subject to additional section 7 consultation if the BLM determines that the project may affect a listed species or its critical habitat.

Existing and future livestock water sources may contain or be illegally stocked with non-native aquatic wildlife (fish, bullfrogs, and crayfish). Non-native aquatic wildlife could move from these water sources to areas that are currently, or possibly could be, occupied by listed fishes or frogs. The effects of non-native species on native fishes and amphibians are well-documented (see the BA and 1997 BO), generally resulting in decline or loss of native species' populations through competition or predation. The BLM will work with permittees and AGFD in not stocking non-native species in areas where they may affect listed species, and to remove non-native species from where they already exist. These actions should assist in maintaining current populations of some listed species, and increase the opportunities for future native fish and frog reestablishments.

As part of the proposed action, some areas within the District have been excluded from livestock grazing (maybe year-long or seasonally) for resource benefits, including benefitting threatened or endangered species. Though not considered part of the proposed action, the effects of livestock using these exclosures when not authorized are considered in this BO because authorized grazing adjacent or near the exclosures increases the likelihood of exclosure use. In an effort to remove unauthorized livestock as quickly as possible and limit impacts, the Gila District informally contacts the owner of the unauthorized livestock as soon as possible, and requests removal within a specific time frame. In most cases the livestock owners are responsive and remove the livestock within 24-48 hours. If the exclosures are large, densely vegetated, remote, have damaged structures or high water flows, livestock removal can take 10 to 14 days. In the rare situations in which the Bureau has to send a certified letter, proceed to willful unauthorized use or impoundment, it may take months for livestock removal (Tim Goodman, personal communication).

Livestock grazing can adversely affect watersheds that support the aquatic and riparian habitats in which listed fishes, Chiricahua leopard frog, umbel, and the flycatcher occur. Herbivory and soil and plant trampling can alter vegetation composition, increase erosion and sedimentation into streams, and increase flood events. Grazing can also promote invasion by non-native plant species, which compete with native species and alter fire regimes. Livestock trample and destroy

cryptobiotic crusts, which help stabilize soils and provide soil nutrients. Effects in the watersheds translate downstream into alterations of riparian and stream structure and function, thus reducing the quantity and quality of habitat for listed aquatic and riparian species. These upland watersheds also support species such as PPC, New Mexico ridge-nosed rattlesnake, and Peebles Navajo cactus that can be directly affected by proposed grazing activities. In extreme situations, these actions may decrease or extirpate populations from specific areas. The BLM has committed to maintaining or improving the condition of BLM grazed lands, so general habitat characteristics for some species may be maintained or improved depending on the existing condition and potential of sites and areas in which listed species may occur.

Southwestern willow flycatcher

Middle Gila River/San Pedro River MU

The effects from the proposed action are similar to the 1997 BO and the 18 Allotments BO, except that some of the conservation measures and reasonable and prudent measures have been implemented (as discussed below).

Direct effects to flycatchers during the breeding season have decreased because permitted livestock have been excluded from riparian areas on BLM lands (except for the Christmas allotment as explained below) and some non-Federal lands in the middle Gila River and lower San Pedro River during the breeding season. Some disturbance to flycatchers and their habitat continues due to the proposed action during the breeding season on BLM lands (from livestock in the excluded areas) and non-Federal lands (in allotments with greater than 30% BLM lands), which may result in decreased potential for reproduction, including destroyed nest sites, fledgling mortality, and abandonment of territories. These effects may also occur on the northern portion of the Christmas allotment until the BLM takes actions to seasonally restrict livestock use during the breeding season. The extent of these effects is not known, but is expected to be less than anticipated in previous BOs because of implementation of some of the protective measures, such as the exclusion or restriction of livestock in flycatcher areas. Effects of livestock grazing to habitat characteristics also continue, but have also decreased in some areas since completion of the previous BOs, again because of implementation of protective measures such as exclusion or restriction of livestock in riparian areas. Only eight allotments that have riparian habitat have been assessed under the current standards and guidelines, but the allotments that have been assessed are meeting Standard 2 (riparian).

Characteristics of flycatcher breeding habitat on BLM lands likely are being affected indirectly by livestock grazing, but it is not known to what extent at this time. Watershed effects from livestock management adjacent or near flycatcher habitat could affect flycatchers down slope by affecting habitat characteristics and stability of the flycatcher sites. Increased soil erosion and excessive water runoff could occur, depending on how much vegetation is removed and soil is disturbed. Few of the allotments in these areas have been assessed as to whether they are meeting Standard 1 (upland), but the ones that have been assessed are meeting the standard. We anticipate that as all allotments are managed to meet the standards, watershed effects will have minimal effects on flycatcher habitat.

Direct effects to habitat characteristics on BLM lands in the Babocomari and Brunchow Hill allotments in the San Pedro RNCA area continue similar to that documented in the 1997 BO, including continuing livestock use of approximately 2.5 miles along the Babocomari River on BLM lands in the Babocomari allotment and approximately 500 feet along the San Pedro River on BLM lands in the Brunchow Hill allotment. The BLM lands on both of these allotments are currently meeting Standard 2 (Riparian-Wetland site), which will facilitate hydrological function in the riparian areas of these allotments. This may reflect what is occurring on non-Federal land in the Brunchow Hill allotment, but that is unknown. Livestock that are occurring occasionally throughout the San Pedro RNCA results in some effects through trampling and habitat damage, but the BLM is removing these livestock as soon as possible, and installing and maintaining improvements to minimize livestock presence in the future. Conditions upslope may be affecting potential flycatcher habitat. Upland conditions on non-Federal lands in the Brunchow Hill allotment are unknown, but the BLM land is classified as needing improvement. Most of the allotments adjacent to the SPRNCA are meeting the standards and guidelines on BLM lands, which likely results in only minor watershed effects to flycatcher habitat. The assessment on BLM lands on these allotments is likely to reflect the condition on non-Federal lands in general, because BLM lands make up over 30% of the land base in most of these allotments.

Upper Gila MU

Flycatcher habitat in the Gila Valley does not occur in any active allotments, so there will be no direct effects to flycatchers from permitted livestock. Livestock grazing on BLM allotments near some of these flycatcher territories may result in some indirect effects as a result of degraded watersheds, but because they are generally separated from the territories by agricultural and open lands, the effects would be minimal. There will be no effects from the proposed action to the territory that is near Duncan, AZ, because it is not in a BLM allotment, and there are no active allotments near this territory.

Cowbird Effects

Cowbird control actions, as prescribed in terms and conditions, as well as in conservation measures that were part of the proposed action described in the 1997 BO and the 18 Allotments BO, are not being implemented. As a result, we assume that cowbird parasitism continues, and that some nesting flycatchers are being adversely affected. The BLM has included conservation measures for this proposed action. When implemented, these measures will likely decrease the extent of cowbird parasitism, resulting in less effect on flycatcher reproduction.

When the BLM implements all the conservation measures, we anticipate that the proposed action will only have minor effects on reproducing flycatchers and habitat characteristics. If the measures are implemented, then these areas should continue to provide breeding habitat for flycatchers.

Critical Habitat

Effects to critical habitat vegetation and structural characteristics are similar to the general effects described in the 1997 BO and generally the same as described in the previous section. Critical habitat PCEs may be directly affected from livestock grazing on the middle Gila River and lower

San Pedro River. Livestock may affect the species composition and shrub density in these areas, but it is unlikely that this will significantly reduce the current or future suitability for breeding flycatchers in the Middle Gila River/San Pedro River MU because the BLM is implementing protective measures such as exclusion or restriction of livestock in riparian areas during the growing seasons, and most of the allotments that have been assessed are meeting Standard 2, which will facilitate the maintenance and development of breeding habitat. We anticipate that, as all allotments are managed to meet the standards, effects in the watersheds of flycatcher habitat will decline to minimal levels on flycatcher habitat.

Recovery and Critical Habitat Management

The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous paragraph, it is unlikely that any effects to the PCEs will significantly reduce the current or future suitability for flycatcher in the Middle Gila River/San Pedro River MU. The BLM will manage the allotments that have or are near critical habitat to meet both Standard 1 (uplands) and Standard 2 (riparian). To accomplish this, the BLM will exclude livestock grazing in flycatcher habitat on BLM lands from April 1 to September 1 (the breeding season and most of the growing season), will manage livestock to enhance the survival of willow and cottonwood seedlings, and manage the uplands to maintain vegetative cover. These actions will meet the intent of the recovery plan for livestock management for flycatcher habitat and thus provide for the recovery of the flycatcher.

New Mexico ridge-nosed rattlesnake

The effects of the proposed action on the snake would be the same as described in the 1997 BO. Snakes could be directly injured or killed by livestock trampling or from ranch hands or BLM employees harassing, injuring or killing snakes during livestock management activities, including driving roads, and installing and maintaining structural improvements. These negative effects may be minimized because the BLM has committed to include measures in project-level activities to reduce adverse effects to rattlesnakes. Adverse effects are expected to be infrequent because of the low density of snakes in the Peloncillo Mountains relative to other mountain ranges where the species occurs. Livestock grazing in these areas may also reduce ground cover, which may make snakes more susceptible to predation and may alter prey availability. This negative effect may be minimized because the BLM has committed to using conservative utilization standards to improve conditions, and to manage to meet the current standards and guidelines. The same actions on non-Federal lands on the Guadalupe West allotment could also affect the rattlesnake as described previously.

The proposed action would not affect critical habitat because none occurs in the action area.

Desert pupfish

The effects to the pupfish at Cold Spring Seep on the Day Mine allotment (46040) are similar to that which is described in the 1997 BO, except that a livestock exclosure has been established and is being maintained around the pupfish locations. Direct effects to pupfish through trampling of eggs or fish, ingestion of larval fish, and indirect effects through habitat alteration would only result from livestock inside the exclosure. This should not occur very often because of the

exclosure and, when livestock occur, the BLM will have the livestock removed as soon as possible. Indirect effects to the site from watershed degradation outside of the exclosure are likely to be minimal because the healthy and stable riparian vegetation at Cold Springs Seep provides some buffer to upslope water runoff and erosion.

Effects to desert pupfish on the South Rim Allotment (45290) are the same as described in the Aravaipa Creek reestablishment BO (02-21-04-F-0022). The South Rim Allotment is currently not grazed, so watershed conditions have generally improved over the last decade. Livestock grazing could be resumed on the allotment in the future. If the allotment was restocked, effects to reestablished pupfish could occur through livestock directly harming eggs or fish, and indirectly through habitat alteration at the reestablishment sites. If or when livestock grazing is resumed, we anticipate the management guidelines for this allotment would facilitate the maintenance of reestablished populations, such as taking no action that would increase grazing pressure at the establishment sites and moving livestock prior to exceeding utilization limits. See the Aravaipa Creek reestablishment BO for a more detailed analysis.

Effects to desert pupfish on the Fan allotment (51140) are the same as documented in the Howard and Posey wells consultation (#22410-2007-F-0225). Effects related to grazing management would be from infrequent livestock in the exclosures, as described above for the Cold Springs Seep. Livestock effects to watershed condition in the areas surrounding Howard and Posey wells will have little to no impact on Howard or Posey wells because they are not located in a drainage, do not collect stream or storm water runoff, and are fed by an artesian well. See the Howard and Posey wells BO for a more detailed analysis.

Effects to desert pupfish on the Muleshoe (44010), Soza Mesa (44020), and C-Spear (44090) allotments have changed from what was described in the BO addressing the reestablishment of four native species in the Muleshoe EMA (#02-21-2007-F-0233). The Muleshoe Allotment has not been grazed since 1988, and was placed in suspension in 2006. No livestock currently graze the allotment, but it is permitted for 346 AUMs which could be stocked in the future. Livestock grazing is currently permitted for 264 AUMs on the Soza Mesa Allotment during the winter season, which will only be adjusted after a coordinated resource management plan is completed and implemented. Livestock grazing is currently permitted for 60 AUMs on the C-Spear (Soza Wash) allotment using a deferred rotation system. If the Muleshoe allotment is stocked with livestock, no direct effects on pupfish are anticipated because the BLM will exclude livestock grazing from the areas that have, or will have, pupfish. We anticipate that livestock are not likely to access those BLM areas supporting present and future stocked fish in the C-Spear allotment because these areas are generally inaccessible to livestock; therefore, we anticipate that there would be little to no direct effects from livestock use in this allotment on pupfish. There will be no direct effects to pupfish from livestock grazing in the Soza Mesa allotment because no suitable habitat exists in the allotment. We anticipate that there may be indirect adverse watershed effects from grazing in the Muleshoe and Soza Mesa allotments, and on BLM land in the C-Spear allotment, but effects are anticipated to be minimal (perhaps not measurable) because of the low stocking levels and that these allotments will be managed to meet the standards and guidelines. See the Muleshoe fish reestablishment BO cited above for additional information.

Effects to desert pupfish in Bonita Creek are the same as described in the BO addressing the reestablishment of native species in Bonita Creek. The livestock grazing effects are anticipated to

be the same as those analyzed under previous biological opinions involving effects of grazing in the Bonita Creek watershed for other fish species (mainly Reinitiation of Consultation/Conference on the Gila Box Riparian National Conservation Area Interdisciplinary Activity Plan, #02-21-92-F-0070-R2, June 10, 2004). The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border Bonita Creek, or, in the case of the Bonita Creek allotment, include Bonita Creek and portions of its watershed on the RNCA. Under the Gila Box RNCA Plan, grazing in Bonita Creek would be limited to trailing once or twice per year to move livestock between pastures on the Bonita Creek allotment. Fish fry and any eggs that may be present could be trampled, and larval fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the use of these crossings will take place infrequently and in a very small portion of the creek, no injury or mortality is reasonably certain to occur. We anticipate indirect watershed effects from grazing in these allotments, but these are anticipated to be minimal because the allotments will be managed to meet the standards and guidelines. See the Gila Box RNCA Plan and Bonita Creek reestablishment BOs for a more detailed analysis.

Effects to desert pupfish in the SPRNCA are the same as described in the BO addressing the reestablishment of native species in the SPRNCA. Direct effects to pupfish in some sites through trampling of eggs or fish, ingestion of larval fish, and indirect effects through habitat alteration could only result from livestock in the SPRNCA. No or few effects to eggs or fish will occur because exclosure fences will minimize possible livestock use and, when livestock use occurs, the BLM will have the livestock removed as soon as possible. Indirect watershed effects to the sites will be similar or less than that described in the flycatcher section.

Gila chub

Effects to chub on the Muleshoe (44010), Soza Mesa (44020), and C-Spear (44090) allotments have changed from what was described in the BO addressing the reestablishment of four native species in the Muleshoe EMA (#02-21-2007-F-0233 –see description above for the Desert pupfish). If the Muleshoe allotment is stocked with livestock, no direct effects on chub are anticipated because the BLM will exclude livestock grazing from the areas that have, or will have, chub. We anticipate that livestock are not likely to access those BLM areas supporting present populations or future reestablished populations in the C-Spear allotment because these areas are generally inaccessible to livestock. As a result, there will be little to no direct effects from livestock use in this allotment on the chub or its habitat. There will be no direct effects to chub from livestock grazing in the Soza Mesa allotment because no suitable habitat exists in the allotment. We anticipate indirect watershed effects from grazing in Muleshoe and Soza Mesa allotments, and on BLM lands in the C-Spear allotment, but these effects are anticipated to be small (perhaps not measurable) because of the low stocking levels and that these allotments will be managed to meet the standards and guidelines. See the Muleshoe fish reestablishment BO for additional information.

There would be no direct effects to Gila chub in Mineral Creek because the creek is not within or adjacent to BLM lands in the Government Springs and Sleeping Beauty allotments, and these allotments have less than 30% BLM lands. Indirect watershed effects from grazing on the BLM lands in both allotments are anticipated to be minimal because these allotments will be managed to meet standards and guidelines.

Effects to chub in Bonita Creek from livestock grazing activities are the same as described in the BO addressing the reestablishment of native species in Bonita Creek, and as those analyzed under previous biological opinions involving effects of grazing in the Bonita Creek watershed for other fish species (mainly Reinitiation of Consultation/Conference on the Gila Box RNCA Interdisciplinary Activity Plan, #02-21-92-F-0070-R2, June 10, 2004). The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border Bonita Creek, or in the case of the Bonita Creek allotment, includes Bonita Creek, and portions of its watershed on the RNCA. Under the Gila Box RNCA Plan, grazing in Bonita Creek would be limited to trailing once or twice per year to move livestock between pastures on the Bonita Creek allotment. This trailing may result in injury or mortality to some Gila chub eggs, larvae, or adults. Fish fry and any eggs that may be present could be trampled, and larval fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the use of these crossings will take place infrequently and in a very small portion of the creek, no injury or mortality is reasonably certain to occur. We anticipate indirect watershed effects from grazing in these allotments, but these effects are anticipated to be minimal because these allotments will be managed to meet the standards and guidelines. See the Gila Box RNCA Plan and Bonita Creek reestablishment BOs for a more detailed analysis.

Effects to chub in the SPRNCA are the same as described in the BO addressing the reestablishment of native species in the SPRNCA. Direct effects to chub in some sites through trampling of eggs or fish, ingestion of larval fish, and indirect effects through habitat alteration could only result from livestock in the SPRNCA. No or few effects to eggs or fish will occur because exclosure fences will minimize possible livestock use and, when livestock use occurs, the BLM will have the livestock removed as soon as possible. Indirect watershed effects to the sites will be similar or less than that described in the flycatcher section.

Critical Habitat

No direct effects of livestock grazing on the Government Springs or Sleeping Beauty Mountain allotments will occur in the critical habitat of Mineral Creek because BLM lands in these allotments do not include critical habitat, and these allotments have less than 30% BLM lands. However, the BLM managing to meet the standards on BLM lands upslope of this area will assist to maintain or improve the PCEs. Critical habitat in the Muleshoe EMA is not expected to be directly affected because livestock do not have access to these areas either because it is inaccessible to livestock or the BLM will exclude livestock. Indirect watershed effects are anticipated from grazing on the Muleshoe EMA allotments, but these are anticipated to be minimal (perhaps not measurable) because of the relatively low stocking levels and because these allotments will be managed to meet the standards and guidelines. Indirect watershed effects are anticipated from grazing on the BLM lands in these allotments, but these are anticipated to minimal because the BLM lands on these allotments will be managed to meet the standards and guidelines, and current management on the non-BLM lands is expected to continue so that PCEs are maintained. In conclusion, we anticipate that the proposed action will not significantly alter any of the characteristics of critical habitat PCEs (as described in 70 FR 66701).

Recovery and Critical Habitat Management

The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous paragraph, it is unlikely that any effects to the PCEs will significantly alter any of the characteristics of PCEs. The BLM will manage the allotments that have or are near critical habitat to meet both Standard 1 (uplands) and Standard 2 (riparian), and implement the proposed action, including the conservation measures. This will result in no effect on the minimum flow or the natural flow regime, little to no effect on the watershed characteristics, channel morphology, or water chemistry, and minimize or eliminate the introduction or spread of nonnative aquatic species into any of the designated stream segments. Critical habitat will be managed to maintain or improve the PCEs for Gila chub over time, so the recovery potential of critical habitat will not be compromised. Thus, the proposed action will provide for the recovery of the Gila chub.

Gila topminnow

The anticipated effects to the Gila topminnow at Cold Spring Seep on the Day Mine allotment (46040) are similar to what is documented in the 1997 BO, except that a livestock exclosure has been established and is being maintained around the Gila topminnow population. Direct effects to Gila topminnow through trampling and ingestion of fish, and indirect effects through habitat alteration would only result from livestock inside the exclosure. This should not occur very often and, when livestock use occurs, the BLM will have the livestock removed as soon as possible. Indirect effects to the site from watershed degradation outside of the exclosure are likely to be minimal because the healthy and stable riparian vegetation provides some buffer to upslope water runoff and erosion.

Effects to Gila topminnow on the South Rim Allotment (45290) are the same as described in the Aravaipa Creek reestablishment BO (02-21-04-F-0022). The South Rim Allotment is currently not grazed, so watershed conditions have generally improved over the last decade. Livestock grazing could be resumed on the allotment in the future, so effects to reestablished Gila topminnow could occur through livestock directly harming fish, and indirectly through habitat alteration at the reestablishment sites. If or when livestock grazing is resumed, we anticipate that the management guidelines for this allotment will facilitate maintenance of reestablished populations, such as taking no action that would increase grazing pressure at the establishment sites and moving livestock prior to exceeding utilization limits. See the Aravaipa Creek reestablishment BO for a more detailed analysis.

Livestock grazing at Mescal Warm Spring in the Mescal Mountain Allotment (4509) is anticipated to have negative impacts on Gila topminnow individuals (if present, they were last documented in 1996) and their habitat. The existing exclosure is not functional, so livestock are directly affecting the vegetation around the site, which is evident by trampling and the lack of dense vegetation. Indirect effects to the site from watershed conditions are likely to be minimal because the allotment will be managed to meet the standards and guidelines.

Effects to Gila topminnow on the Muleshoe (44010), Soza Mesa (44020), and C-Spear (44090) allotments have changed from what was described in the BO addressing the reestablishment of four native species in the Muleshoe EMA (#02-21-2007-F-0233 - see description above for the

Desert pupfish). If the Muleshoe allotment is stocked with livestock, no direct effects on topminnow are anticipated because the BLM will exclude livestock grazing from the areas that have, or will have, topminnow. We anticipate that livestock are not likely to access those BLM areas supporting current populations or future reestablished populations in the C-Spear allotment because these areas are generally inaccessible to livestock. As a result, we anticipate there will be little to no direct effects from livestock use in this allotment on Gila topminnow. There will be no direct effects to pupfish from livestock grazing in the Soza Mesa allotment because no suitable habitat exists in the allotment. We anticipate that there may be indirect watershed effects from grazing in the Muleshoe and Soza Mesa allotments, and on BLM lands in the C-Spear allotment, but those effects are likely to be minimal (perhaps not measurable) because of the low stocking levels and that these allotments will be managed to meet the standards and guidelines. See the Muleshoe fish reestablishment BO for additional information.

Effects to Gila topminnow on the Fan allotment (51140) are the same as documented in the Howard and Posey wells consultation (#22410-2007-F-0225). Direct effects related to grazing management would be from livestock in the exclosures, as described above. Effects to the watershed surrounding Howard and Posey wells will have little to no impact on fish or fish habitat at Howard or Posey wells because they are not located in a drainage, do not collect stream or storm water runoff, and are fed by an artesian well. See the Howard and Posey wells BO for a more detailed analysis.

Effects to topminnow in Bonita Creek from livestock grazing activities are the same as described in the BO addressing the reestablishment of native species in Bonita Creek, and as those analyzed under previous biological opinions involving effects of grazing in the Bonita Creek watershed for other fish species (mainly Reinitiation of Consultation/Conference on the Gila Box RNCA Interdisciplinary Activity Plan, #02-21-92-F-0070-R2, June 10, 2004). Trailing of livestock along Bonita Creek may result in harm to some eggs. Fish fry and any eggs that may be present could be trampled, and fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the use of these crossings will take place infrequently and in a very small portion of the creek, no injury or mortality is reasonably certain to occur. See the Gila Box RNCA Plan and Bonita Creek reestablishment BOs for a more detailed analysis.

Effects to topminnow in the SPRNCA are the same as described in the BO addressing the reestablishment of native species in the SPRNCA. Direct effects to topminnow in some sites through trampling of eggs or fish, ingestion of larval fish, and indirect effects through habitat alteration could only result from livestock in the SPRNCA. No or few effects to eggs or fish will occur because exclosure fences will minimize possible livestock use and, when livestock use occurs, the BLM will have the livestock removed as soon as possible. Indirect watershed effects to the sites will be similar or less than that described in the flycatcher section.

Little Colorado spinedace

Clear Creek: Spinedace, if present, would not be directly affected by livestock grazing on BLM lands because: 1) topography in the Relic Point Allotment along Clear Creek makes it inaccessible to livestock, and 2) Clear Creek does not flow through BLM land in the Gravel Pit Allotment. BLM actions will not contribute to non-native establishment or increases in Clear Creek through

livestock water improvements because none are located on BLM lands in the allotments. Watershed effects from grazing on BLM lands in both allotments are likely minimal because the standards and guidelines are being met.

Chevelon Creek: Spinedace, if present, would not be directly affected by livestock grazing on BLM lands because the riparian areas in the Chevelon Creek and Potato Wash allotments are not accessible by livestock because of topography. BLM actions will not contribute to non-native establishment or increases in Chevelon Creek through livestock water improvements because none are located on BLM lands in the allotments. Watershed effects from grazing on BLM lands in the Chevelon Creek North, Potato Wash, and Pink Cliffs allotments are likely minimal because the standards and guidelines are being met.

Silver Creek: Spinedace, if present, would not be directly affected by livestock grazing on BLM lands in the Washboard Wash Allotment because livestock are excluded from Silver Creek by a fence, except as a water source at Woodruff Dam. Livestock use approximately 1000 feet of the west bank above Woodruff Dam to water. The habitat characteristics for spinedace are poor at this site, and we expect few, if any, spinedace to occur in the area. Therefore, livestock grazing is anticipated to have few effects to spinedace or their habitat in that area. BLM actions will not contribute to non-native species establishment or increases in Silver Creek through livestock water improvements because none are located on BLM lands. Watershed effects from livestock grazing/watering above Woodruff Dam mostly end at the dam. Watershed effects from grazing on other BLM land in the Washboard Wash are likely minimal because these allotments are being managed to meet the standards (but this allotment has not been analyzed under the current standards and guidelines). Watershed effects from grazing on BLM in the allotments within five miles of Silver Creek are likely minimal because these allotments are meeting Standard 1 (Upland).

Little Colorado River: Spinedace, if present, would not be directly affected by livestock grazing on BLM lands in the Little Colorado River Allotment because livestock are excluded from the LCR by a fence. Direct effects from livestock grazing in the Mexican Wash Allotment would be limited because the topography would generally exclude livestock use. Livestock grazing is unlikely to affect spinedace on BLM land along Lyman Lake in the Little Reservoir Allotment because the presence of non-native predator fish excludes the survival of spinedace at this site. BLM actions will not contribute to non-native establishment or increases in the LCR through livestock water improvements because none are located on BLM lands in the allotments in the immediate area. Spinedace could be directly affected by livestock in the Little Colorado River Allotment and from access on non-Federal lands in the allotment. The extent of these impacts is not known, but the likelihood of directly affecting individual spinedace is low because of the fluctuations in populations and locations, BLM will have livestock removed from the Little Colorado River Allotment exclosure as soon as possible, and it is unlikely that spinedace are present in Lyman Lake next to BLM land in the Little Reservoir Allotment because of the presence of predatory non-native fish. Watershed effects from grazing on BLM lands in the Scraper Knoll, Lyman Lake South, Mexican Wash, Little Reservoir, and Big Hollow Wash allotments are likely minimal because the standards and guidelines are being met.

Interrelated/Interdependent Watershed Effects: Interrelated/interdependent actions in the Bar A allotment (6178), near Silver Creek, and the Little Colorado River allotment along the LCR

(both allotments contain greater than 30% BLM land) may result in indirect effects to spinedace and their habitat (as described in General Effects). Analysis of the BLM lands in these allotments indicates that they are meeting or moving to meet the standards. Considering that BLM lands represent 42% of the Bar A allotment and 72% of the Little Colorado allotment, these conditions may reflect what is happening on the non-Federal portions also. While some indirect watershed effects to habitat conditions on Silver Creek and LCR may be occurring, it is unlikely that these are having a measurable effect to any components that are necessary for spinedace.

Critical Habitat

The only allotment that adjoins Little Colorado spinedace critical habitat is Chevelon Creek North, but BLM land is two miles upstream of critical habitat. This allotment contains less than 30% BLM lands, so any effects occurring on the non-BLM portions of the allotment are not considered among the effects of the action. Because livestock do not have access to the creek on BLM land, there would be no direct effect to any PCEs. Watershed effects may occur to some PCEs from actions on BLM lands on the Chevelon Creek North and Potato Wash allotments, but these effects would not be observable or measurable because of the distance from BLM lands to critical habitat and because BLM lands in the Chevelon Creek North allotment meet the standards and guidelines.

Recovery and Critical Habitat Management

No measurable effects to the recovery potential of the spinedace are anticipated. Properly managing the uplands adjacent to and near the critical habitat should contribute to maintaining or improving the critical habitat for recovery. The BLM will manage the Chevelon Creek North and Potato Wash allotments to meet the standards and guidelines, including managing the uplands to meet Standard 1. Thus, the proposed action will provide for the recovery of the spinedace.

Loach minnow

A change in management for the Aravaipa area since the 1997 BO is that both the Quintana (4519) and Massacre (4532) allotments are no longer grazed. The riparian areas within Aravaipa, Deer, and Turkey creeks are excluded from grazing, so direct effects of livestock grazing is limited to possible, but infrequent, livestock use. Trailing of less than 10 head of livestock no more than three times per year in the Hell Hole allotment is permitted, though this does not occur every year. Livestock use and trailing could injure or kill loach minnow eggs and/or larvae. This trailing may result in injury or mortality of some eggs. Fish fry and any eggs that may be present could be trampled, and larval fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the trailing is only 10 head of livestock, occurs infrequently, and in a small portion of the creek, no injury or mortality is reasonably certain to occur. Indirect watershed effects to the stream habitat from surrounding active allotments (most of which are greater than 30% BLM lands) are likely occurring, but, considering the relatively stable populations and apparent quality habitat in Aravaipa Creek, these effects are probably not measurable. See the 1997 BO for further discussions.

Along the San Francisco River north of Clifton, direct livestock effects would be from possible livestock use and trailing in the San Francisco allotment exclosure, livestock use on non-Federal

lands, or occasional livestock use from the Metcalf allotment. All of these actions could injure or kill loach minnow eggs and/or larvae, but this effect is not reasonably certain to occur because the distribution of loach minnow in the San Francisco River apparently fluctuates over time depending upon water levels, flooding, and other factors that affect loach minnow distribution on BLM, State, and private lands in the action area. Grazing activities can alter habitat components, but we anticipate that these impacts on the species and its habitat would be very low, and likely not measurable because of the low livestock use. Refer to the RMP BO, BA, and 1997 BO for additional effects analysis.

Effects to loach minnow on the Muleshoe (44010), Soza Mesa (44020), and C-Spear (44090) allotments have changed from what was described in the BO addressing the reestablishment of four native species in the Muleshoe EMA (#02-21-2007-F-0233 – see description above for desert pupfish). If the Muleshoe allotment is stocked with livestock, no direct effects on loach minnow are anticipated because the BLM will exclude livestock grazing from the areas that have, or will have, loach minnow. We anticipate that livestock are not likely to access those BLM areas supporting present and future stocked loach minnow in the C-Spear allotment because these areas are generally inaccessible to livestock. As a result, we anticipate there will be little to no direct effects from livestock use in this allotment on loach minnow. We anticipate that there may be indirect watershed effects from grazing in the Muleshoe and Soza Mesa allotments, and on BLM land in the C-Spear allotment, but those effects are likely to be minimal (perhaps not measurable) because of the low stocking levels and these allotments will be managed to meet the standards and guidelines. See the Muleshoe fish reestablishment BO for additional information.

In Bonita Creek, livestock grazing effects are anticipated to be the same as those analyzed under previous biological opinions involving reestablishment of native species in Bonita Creek and effects of grazing in the Bonita Creek watershed for other fish species (mainly Reinitiation of Consultation/Conference on the Gila Box Riparian National Conservation Area Interdisciplinary Activity Plan, #02-21-92-F-0070-R2, June 10, 2004). The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border Bonita Creek, or in the case of the Bonita Creek allotment, includes Bonita Creek, and portions of its watershed on the RNCA. Under the Gila Box RNCA Plan, grazing in Bonita Creek would be limited to trailing once or twice per year to move livestock among pastures on the Bonita Creek allotment. This trailing may result in injury or mortality of some eggs. Fish fry and any eggs that may be present could be trampled, and larval fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the use of these crossings will take place infrequently and in a very small portion of the creek, no injury or mortality is reasonably certain to occur. See the Gila Box RNCA Plan and Bonita Creek reestablishment BOs for a more detailed analysis, including indirect watershed effects.

Critical Habitat

The riparian areas within critical habitat in Aravaipa, Deer, Turkey, and Bonita creeks are excluded from grazing, so direct effects to critical habitat in these areas are limited to occasional livestock use and trailing. These actions may affect some PCEs in the short-term, but would likely not change the suitability of the habitat for loach minnow in the long-term because livestock use would only result in temporary effects. See the BA for further discussion of effects to critical habitat in the Aravaipa area, which would also apply to Bonita Creek.

PCEs in the San Francisco River critical habitat are being affected by livestock management. The occasional livestock use and trailing in the BLM areas north of Clifton will result in most substrate PCEs being negatively affected, though these effects will be temporary and small, and likely not measurable to loach minnow in the long-term. Livestock grazing during the winter on BLM lands on the Smuggler Peak allotment and on non-Federal lands along the river may be measurably affecting substrate PCEs and riparian habitat, but these effects will likely not be substantial because livestock use would not occur during the growing season. PCEs would have sufficient time to recover, and possibly improve, during the growing season.

If the Muleshoe allotment is stocked with livestock, no direct effects to PCEs are anticipated because the BLM will exclude livestock grazing from Bass, Hot Springs, and Redfield canyons. We anticipate that livestock are not likely to access critical habitat on BLM land in the C-Spear allotment because the areas in Redfield Canyon are generally inaccessible to livestock. As a result, we anticipate there will be little to no direct effects to PCEs from livestock use in this allotment on loach minnow. We anticipate that there may be indirect watershed effects from grazing in the Muleshoe and Soza Mesa allotments, and on BLM land in the C-Spear allotment, but those effects are likely to be minimal (perhaps not measurable) because of the low stocking levels and these allotments will be managed to meet the standards and guidelines.

Indirect watershed effects to critical habitat in Aravaipa, Turkey, and Deer creeks may be occurring, but the effect to any PCE likely is not measurable for the species because the riparian areas generally buffer the effects from upslope. The effects on PCEs are expected to decrease over time because the BLM will continue to manage BLM lands to meet the standards and guidelines.

Recovery and Critical Habitat Management

The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous section, it is unlikely that effects to the PCEs will be substantial or measurable. Any effects are expected to be short-term and decrease over time. Implementation of the proposed action is expected to result in the perpetuation of loach minnow populations. The BLM will manage the allotments that have or are near critical habitat to meet both Standard 1 (uplands) and Standard 2 (riparian), and implement the proposed action, including the conservation measures, which is expected to result in the perpetuation of loach minnow populations. These actions are not expected to result in excessive sedimentation, altered water chemistry, or spread of nonnative fish. Critical habitat will be managed to maintain or improve the PCEs for loach minnow over time, contributing to recovery.

Spikedace

A change in management for the Aravaipa area since the 1997 BO is that the Quintana (4519) and Massacre (4532) allotments are no longer grazed. The riparian areas within Aravaipa Creek are excluded from grazing, so direct effects of livestock grazing is limited to possible, but infrequent, livestock use. Trailing of less than 10 head of livestock no more than three times per year in the Hell Hole allotment is permitted, though this does not occur every year. Livestock use and trailing could injure or kill loach minnow eggs and/or larvae. This trailing may result in injury or

mortality of some eggs. Fish fry and any eggs that may be present could be trampled, and larval fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the trailing is only 10 head of livestock, occurs infrequently, and in a small portion of the creek, no injury or mortality is reasonably certain to occur. Indirect watershed effects to the river from surrounding active allotments (most of which are greater than 30% BLM lands) are likely occurring, but, considering the relatively stable populations and apparent habitat quality in Aravaipa Creek, these effects are probably not measurable on spikedace habitat or occurrence. See the 1997 BO for further discussions.

Spikedace do not occur on BLM land in the Morenci or Turtle Mountain allotments, so there will be no direct effects. We anticipate that there may be indirect watershed effects from grazing in these allotments, including from non-Federal lands in the Turtle Mountain allotment, but those effects are likely to be minimal (perhaps not measurable) because these allotments will be managed to meet the standards and guidelines.

Effects to spikedace on the Muleshoe (44010), Soza Mesa (44020), and C-Spear (44090) allotments have changed from what was described in the BO addressing the reestablishment of four native species in the Muleshoe EMA (#02-21-2007-F-0233 – see Desert pupfish, above). If the Muleshoe allotment is stocked with livestock, no direct effects on spikedace are anticipated because the BLM will exclude livestock grazing from the areas that have, or will have, spikedace. We anticipate that livestock are not likely to access those BLM areas supporting present and future stocked spikedace in the C-Spear allotment because these areas are generally inaccessible to livestock. As a result, we anticipate there will be few to no direct effects from livestock use in this allotment on spikedace. There will be no direct effects on spikedace from livestock grazing in the Soza Mesa allotment because no suitable habitat exists in the allotment. We anticipate that there may be indirect watershed effects from grazing in the Muleshoe and Soza Mesa allotments, and on BLM land in the C-Spear allotment, but those effects are likely to be minimal (perhaps not measurable) because these allotments will be managed to meet the standards and guidelines. See the Muleshoe fish reestablishment BO for additional information.

The livestock grazing effects are anticipated to be the same as those analyzed under previous biological opinions involving reestablishment of native species in Bonita Creek and effects of grazing in the Bonita Creek watershed for other fish species (mainly Reinitiation of Consultation/Conference on the Gila Box Riparian National Conservation Area Interdisciplinary Activity Plan, #02-21-92-F-0070-R2, June 10, 2004). The Bonita Creek (46160), Johnny Creek (46150), and Bull Gap (46170) allotments border Bonita Creek, or in the case of the Bonita Creek allotment, includes Bonita Creek, and portions of its watershed on the RNCA. Under the Gila Box RNCA Plan, grazing in Bonita Creek would be limited to trailing once or twice per year to move livestock among pastures on the Bonita Creek allotment. This trailing may result in harm to some eggs, larvae, or adults. Fish fry and any eggs that may be present could be trampled, and larval fish could be ingested. Adult fish, which are critical to the breeding population, would probably escape injury because they are more mobile. However, because the use of these crossings will take place infrequently and in a very small portion of the creek, no injury or mortality is reasonably certain to occur. See the Gila Box RNCA Plan and Bonita Creek reestablishment BOs for a more detailed analysis, including indirect watershed effects.

Critical Habitat

The riparian areas within critical habitat in Aravaipa, Deer, Turkey, and Bonita creeks are excluded from grazing, so direct effects to critical habitat in these areas are limited to occasional livestock use and trailing. These actions may affect some PCEs in the short-term, but would likely not change the suitability of the habitat for loach minnow in the long-term because livestock use would only result in temporary effects. See the BA for further discussion of effects to critical habitat in the Aravaipa area, which would also apply to Bonita Creek.

PCEs in the San Francisco River critical habitat are being affected by livestock management. The occasional livestock use and trailing in the BLM areas north of Clifton will result in most substrate PCEs being negatively affected, though these effects will be temporary and small, and likely not measurable to spikedace critical habitat in the long-term. Livestock grazing during the winter on BLM lands on the Smuggler Peak allotment and on non-Federal lands along the river may be measurably affecting substrate PCEs and riparian habitat, but these effects will likely not be substantial because livestock use would not occur during the growing season. PCEs would have sufficient time to recover, and possibly improve, during the growing season.

If the Muleshoe allotment is stocked with livestock, no direct effects to PCEs are anticipated because the BLM will exclude livestock grazing from Bass, Hot Springs, and Redfield canyons. We anticipate that livestock are not likely to access critical habitat on BLM land in the C-Spear allotment because the areas in Redfield Canyon are generally inaccessible to livestock. As a result, we anticipate there will be little to no direct effects to PCEs from livestock use in this allotment on spikedace. We anticipate that there may be indirect watershed effects from grazing in the Muleshoe and Soza Mesa allotments, and on BLM land in the C-Spear allotment, but those effects are likely to be minimal (perhaps not measurable) because of the low stocking levels and these allotments will be managed to meet the standards and guidelines.

Indirect watershed effects to critical habitat in Aravaipa and Turkey creeks may occur, but the effect to any PCE likely is not measurable for the species because the riparian areas generally buffer the effects from upslope. The effects on PCEs are expected to decrease over time because the BLM will continue to manage BLM lands to meet the standards and guidelines.

Recovery and Critical Habitat Management

The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous section, it is unlikely that effects to the PCEs will be substantial or measurable. Any effects are expected to be short-term and decrease over time. Implementation of the proposed action is expected to result in the perpetuation of spikedace populations. The BLM will manage the allotments that have or are near critical habitat to meet both Standard 1 (uplands) and Standard 2 (riparian), and implement the proposed action, including the conservation measures, which is expected to result in the perpetuation of spikedace populations. These actions are not expected to result in excessive sedimentation, altered water chemistry, or spread of nonnative fish. Critical habitat will be managed to maintain or improve the PCEs for spikedace over time, contributing to recovery.

Razorback sucker

The effects to the sucker and its critical habitat are the same as described in the 1997 BO. Effects could include trampling and ingestion of eggs and larval fish, but this is not reasonably certain to occur because of the low density of suckers in the action area. Direct habitat alteration could occur in the floodplain and at the water's edge through trampling in the Bonita Creek (4616), San Francisco (4002), Red Hickey Hills (4005), Morenci (4003), Smugglers Peak (4010), Harper (5024), Zorilla (4011), Gila (4014), Twin C (4021), Sheldon Mountain (5035), Johnny Creek (4615), Bull Gap (4617), and Turtle Mountain (4618) allotments, but these are limited because of exclusions, seasonal restrictions, or other management that minimizes livestock use and occurrence along the water. Watershed effects from livestock management within the watershed of the Gila River will continue to occur from livestock management upslope of the rivers (e.g., destruction of cryptobiotic crusts, increased soil erosion, sedimentation, increased runoff). All of these effects are not anticipated to be measurable on current sucker habitat because the BLM will minimize these effects by managing BLM lands to meet the upland standards. Any effects would not be measurable themselves, but may be additive to the already altered condition and continuing cumulative actions (see cumulative effects). Refer to the 1997 BO for a detailed discussion of the effects.

Critical Habitat

Effects to the critical habitat PCEs are the same as described in the 1997 BO, which may include decreasing water quality and quantity, physical habitat for all sucker life stages, and food supply. While these effects are likely occurring because of current livestock management, they are not anticipated to be measurable by themselves, but are additive to an already deteriorated environmental baseline and the effects of cumulative actions (see cumulative effects). The BLM will manage all BLM lands in allotments to meet the Standards, including implementing actions to minimize livestock use in critical habitat, so any effects should be minimized, and, potentially, improved, over time.

Recovery and Critical Habitat Management

The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous paragraph, we anticipate that any effects to PCEs from the proposed action would be minimized, and potentially improved, over time because the BLM will manage the allotments to meet standards and guidelines, including in and upland of critical habitat. While such effects may occur to PCEs, they are not anticipated to be measurable by themselves.

Huachuca water umbel

While the exact locations of umbel patches may change as conditions change (as described in STATUS OF THE SPECIES), the effects to the species and its critical habitat are generally the same as described in the 1997 BO, Reinitiation #4 of the 1997 BO (April 12, 2000), and the BO to reestablish species in the SPRNCA (#22410-2008-F-0103) (see these discussions for more details). Livestock grazing on BLM lands in the Babocomari (5208) (2.5 miles) and Brunchow Hill (5251) (500 feet) allotments may affect the umbel through direct trampling of individuals and loss of stream bank stability. These effects are likely occurring on both the Federal and non-Federal

portions of these allotments, but it is unknown exactly how this is affecting established clumps or populations of the plant or their habitat. The BLM lands on both of these allotments are currently meeting or progressing to Standard 2 (Riparian-Wetland site), which will facilitate hydrological function in the riparian areas of these allotments. This may reflect what is occurring on non-Federal land in the Brunchow Hill allotment, but that is unknown. Livestock use that is occurring occasionally throughout the San Pedro RNCA results in some effects through trampling and habitat damage, but the BLM is removing these livestock as soon as possible, and installing and maintaining improvements to minimize livestock use in the future. Conditions upslope of umbel habitat may be affecting umbel sites and habitat. Upland conditions on non-Federal lands in the Brunchow Hill allotment are unknown, but the BLM land is classified as needing improvement. Seven of the other allotments adjacent to the SPRNCA are meeting the standards and guidelines on BLM lands (two have not been evaluated) (see Figure 1 and Table 3); thus livestock grazing on these allotments likely results in only minor watershed effects to umbel or its habitat. The assessment on BLM lands is likely to reflect the condition on non-Federal lands in general because BLM lands make up over 30% of the land base in most of the allotments.

Critical Habitat

Critical habitat may be directly affected from permitted livestock grazing on a small portion (less than 500 feet) of the Brunchow Hill Allotment and from livestock throughout the SPRNCA. Livestock use may affect stream channel stability and the riparian plant community, but it is unlikely that this will result in a significant reduction of suitability for umbel because:

1. The BLM will work with private landowners in the Brunchow Hill allotment to exclude livestock from BLM lands in that allotment within the riparian zone (1997 BO Conservation Measure 8.c.)

2. The BLM lands in the Brunchow Hill Allotment are meeting the riparian standard, which results in a stream channel and riparian community that is relatively stable over time.

3. The occasional livestock use will have very few and localized effects on any critical habitat component because the BLM will remove the occasional livestock, along with maintaining exclosures to minimize livestock use in the future.

4. Conditions on allotments upslope of critical habitat may be affecting some components, but these are only minor effects to any component since the BLM lands in eight of allotments of the area are meeting standards and guidelines (three have not been evaluated). We expect that the non-BLM lands in the eight allotments are likely meeting standards also (see previous section).

5. In conclusion, we anticipate that the proposed action will not significantly alter any of the characteristics of critical habitat PCEs (as described in 64 FR 37445).

Recovery and Critical Habitat Management

The recovery potential of critical habitat will not be compromised by the proposed action because, as addressed in the previous sections, the BLM will manage the allotments to meet the standards

and guidelines, most of the BLM lands in the allotments are meeting standards and guidelines, and the non-BLM lands in these allotments are likely meeting standards and guidelines, therefore, livestock management will not result in overgrazing. Therefore, the proposed livestock management is not one of the actions listed in the final rule designating critical habitat (64 FR 37445) that would result in adverse modification or destruction of critical habitat. Because the proposed livestock management will not result in overgrazing, we expect that the PCEs for umbel critical habitat will be maintained or improved in the future for the umbel. No actions are anticipated that would result in impairing or precluding recovery of the species.

Peebles Navajo cactus

The main adverse effect of the proposed action is that livestock may inadvertently trample cacti in the Apache Butte allotment (6073), either by livestock trampling plants located outside of exclosures that were not previously documented, or through livestock inside of exclosures. Also, livestock trampling may disturb soils, increasing erosion, and impacting cryptobiotic crusts, all of which may negatively affect habitat for the cactus. We anticipate that these impacts are small within the exclosures because only a few livestock will graze in the exclosures. Impacts outside the exclosure may be more prevalent, but because BLM lands in the allotment are meeting or moving toward meeting Standard 1 (Upland sites) and Standard 3 (Desired Resource Condition), these effects are likely minimal. Range improvement installation and maintenance outside of the exclosures that result in surface disturbance may directly affect individual plants that are not yet protected, but these effects will likely be avoided in occupied areas because the BLM will survey before projects are implemented and construct exclosures around populations that are found.

Pima pineapple cactus

The effects of the proposed action are predicted to be essentially the same as described in the 1997 BO. As mentioned, the only management change is that the Hay Hook Allotment is currently in nonuse; however, livestock grazing could resume during the life of the proposed action.

We do not know specifically if and where the following effects to cacti will occur because we do not have specific information on their location within an allotment, but cacti will likely be affected to some degree. Livestock grazing could affect PPC through trampling of individuals and altering the habitat around individuals. Trampling that results in injury or death to an individual PPC could occur, but we anticipate that this would not be a common occurrence because individuals and small clumps are scattered and rare. Livestock are not likely to concentrate for an extended period of time in PPC locations unless there is a water or mineral lick nearby, in which case trampling may limit or eliminate that specific individual or cluster of cacti. Habitat conditions may be altered through livestock grazing by decreasing cover, increasing soil compaction, destruction of cryptobiotic crusts, increasing erosion, and increasing non-native grasses and other plants (with changes in fire frequency and intensity). These effects may decrease the suitability of a site to maintain cacti in the long-term.

Considering that the BLM lands in five allotments with PPC habitat have recently been assessed and determined to meet the appropriate standards and guidelines (Twin Buttes, Ash Mountain, Gunsight Mountain, Three Points, and Diamond Bell allotments), it is likely that effects not related to trampling are minimal on these BLM lands. Conditions on BLM lands on the

remaining nine allotments with PPC habitat have not been recently assessed according to the new standards and guidelines, so effects in those allotments are more difficult to quantify. These effects of the action may also be occurring on non-Federal lands in the four allotments that include at least 30% BLM land.

Construction or maintenance of range improvements may also affect PPC directly by killing or injuring individuals. However, this is unlikely to occur because the BLM proposes to survey range improvement sites before implementation, and to avoid direct impacts and minimize indirect impacts. Indirect effects could occur by changing the distribution of livestock through fences, waters, and other range improvements. These changes in distribution could increase, decrease, or leave unchanged the potential for livestock to affect PPC. As discussed in the "Scope of the Consultation," FWS will review project plans for structural improvements, and if the anticipated effects exceed the anticipated effects in this opinion, the project type is not included in the "DESCRIPTION OF THE PROPOSED ACTION", or anticipated take would be met or exceeded (although this is criterium is not applicable to plants), we will not approve the plan and, in accordance with 50 CFR 402.14(a), the project would be subject to additional section 7 consultation if the BLM determines that the project may affect a listed species or its critical habitat.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Cumulative effects include those described in the 1997 BO, Phoenix District BOs, 18 Allotments BO, and other BOs listed in the Consultation History. Refer to these BOs for more discussions of cumulative effects.

General Cumulative Effects

Livestock grazing on non-Federal lands affects the watershed conditions for some listed species. Excessive livestock grazing could result in increased erosion, high run-off after storms, and decreased habitat quality and quantity because of reduced plant cover and soil disturbance. Other activities on non-Federal lands that may not be subject to section 7 consultation include recreation, residential and commercial development, groundwater pumping, water diversions and channelization, and mining; these activities can and do result in adverse effects to listed species in the action area. All of these actions could reduce or eliminate habitat that could adversely affect some species in some areas. The effects on species vary depending on the actions in the immediate areas of listed species. In the borderlands of Arizona, there has been a dramatic increase in the numbers of cross border violators since the 1997 BO. These activities have resulted in many miles of new vehicle routes, trails, campsites, and accumulations of trash. Cross-border violators build warming or cooking fires, which occasionally escape and become wildfires; and sometimes wildfires are deliberately set as diversions so cross border violators can escape more easily. They also camp in riparian areas, which may result in reducing habitat quality and alter species use, including blocking travelways.

General Cumulative Effects for all Aquatic Species

Aquatic non-native plants, animals, and disease organisms in streams, tanks, and ponds on non-Federal lands pose a threat to aquatic listed species. Non-native organisms may move on their own through drainages or overland, or are moved intentionally by anglers and bait collectors or unintentionally via water transfers, hitchhiking on boats, and other mechanisms. Some of the areas with non-native species are in close proximity to areas occupied by native species. An increase of predation, competition, diseases, and habitat alteration is anticipated if these non-native species establish in listed species habitat, resulting in adverse effects to some species in some areas. This threat varies, but is present throughout the action area.

Southwestern willow flycatcher

Further residential and recreational development of private lands near the Gila and San Pedro rivers will, in some cases, occur in the absence of Federal permitting. This increased development would lead to more public use of the rivers and shoreline areas. Increases or changes in cowbird foraging areas (corrals, domestic stock, and bird feeders) and habitat fragmentation may increase the parasitism rate and decrease flycatcher productivity. Continued and future conversion of floodplains and near-shore lands would eliminate opportunities to restore floodplains for flycatcher habitats. Increased recreation, camping, off-road vehicle use, or river trips, may harass and disturb breeding birds or impact nesting habitats. This increased recreation also increases wildfire potential in these areas. As these areas develop, demands will increase for groundwater pumping. The water budgets of the middle Gila and San Pedro valleys are already in deficit; increased pumping would accelerate loss of river flow and increase associated loss of riparian habitats along those rivers. Fire continues to degrade flycatcher habitat. Yearlong livestock grazing on private and State lands in these areas may be negatively affecting regeneration of native species used for nesting.

Proposals are being considered for phreatophyte control in the Safford area of the Gila River, and projects authorized in the 2004 Arizona Water Settlement will likely affect flows in the Gila River through the action area. Although the specifics are not yet known, these projects may affect flycatchers and their habitats. Proponents of these projects are also unknown, but we believe most will be Federal agencies or will have a Federal nexus, resulting in section 7 consultations. Some projects may not have a Federal nexus; the effects of those projects would be cumulative effects.

New Mexico ridge-nosed rattlesnake

The BLM manages the majority of lands within the subspecies' range in the action area. Non-Federal lands within the Sycamore and Ben Snure allotments, and outside any allotment, may include rattlesnake habitat in areas above 5,000 feet in the Peloncillo Mountains. Illegal collection; habitat and snake disturbance; snake injury or mortality; and habitat fragmentation, degradation, or destruction from grazing and recreation activities on non-Federal lands could affect the small, disjunct populations of New Mexico ridge-nosed rattlesnake within the action area. Conversely, fuel reduction and fire management activities, although having short-term adverse effects, could contribute longer-term positive effects by reducing the potential for catastrophic wildfires, particularly in those situations where a fire spreads from private to Federal lands.

Desert pupfish

Drafting of ground water may be affecting artesian discharge in the San Simon Valley, which may affect water availability at Howard and Posey wells. Livestock grazing on state and private lands in the C-Spear allotment may be affecting watershed characteristics in the action area, but it is unlikely to have any measurable effect on the current and possible, known future pupfish locations because of low livestock stocking levels.

Gila chub

Livestock grazing on state and private lands in the C-Spear allotment may be affecting watershed characteristics in the action area, but it is unlikely to have any measurable effect on the current and possible future Gila chub locations because of the low livestock stocking levels.

Stock ponds pose a continual threat of contamination of chub habitat with non-native fishes. Livestock grazing on state and private lands are affecting watershed characteristics in the action area, but the overall effect of these actions on current and future chub locations are not known.

Gila topminnow

The draft of ground water may be affecting artesian discharge in the San Simon Valley, which may affect water availability for Howard and Posey wells. Livestock grazing on state and private lands in the C-Spear allotment may be affecting watershed characteristics in the action area, but it is unlikely to have any measurable effect on the current and possible future Gila topminnow because of the low livestock stocking levels.

Little Colorado spinedace

Future actions within the action area that are reasonably certain to occur include urban growth and development, recreation, road maintenance, fuels-reduction treatments, ungulate grazing, renewable energy development, and other associated non-Federal actions. These actions have the potential to reduce the quality of habitat for the spinedace and contribute as cumulative effects to the proposed action.

Spinedace could be directly affected by livestock on non-Federal lands in the action area, which may reduce the survival or reproduction of individuals either through loss of habitat quality or quantity, or directly by livestock trampling or ingesting individuals or eggs. The extent of these impacts on non-Federal lands are not known, but frequency of direct effects to individual spinedace is low because of the fluctuations in populations and locations.

Actions on the non-Federal portions of some allotments in the watershed for Clear Creek, Chevelon Creek, Silver Creek, and LCR could result in indirect effects to spinedace and their habitat (as described in General Effects). Most of the BLM lands in the allotments either have not been analyzed under the latest grazing standards or, if analyzed, they meet or are moving toward meeting the standards. Those BLM parcels that have been analyzed generally cannot be extrapolated to the remainder of the allotment because, for most allotments, they represent a small

percentage of the acres. As a result, the condition of the non-Federal portions of most of the allotments is not known, and specific effects cannot be determined.

There is a very small possibility that watershed effects from livestock management actions on non-Federal lands upstream of critical habitat in Chevelon Creek may result in effects to some PCEs. Effects to habitat characteristics are not expected to be measurable because of the distance from these actions and that most of Chevelon Creek is inaccessible above the critical habitat. Non-native species could travel down from these non-Federal lands if they occupy stock waters, resulting in effects to any fish species as described in previous sections.

Loach minnow and Spikedace

Human development, recreational site encroachment, and changes in land-use patterns on non-Federal lands around occupied and potentially occupied reaches and critical habitat in Aravaipa Creek, the San Francisco River, Bonita Creek, and the Muleshoe area that further fragment, modify, or destroy upland or riparian vegetation negatively affect water quality and quantity. Increased development, and continuation of agricultural and livestock grazing practices may result in the drainage, development, or diversion of wetland and aquatic habitats that reduce water quantity and quality, and destroy spawning and other important habitats. Non-native fish introduction resulting from fishing and recreation in or near occupied reaches would increase resource competition and direct mortality from predation.

Because most of the stream bottom in Aravaipa Creek below the wilderness is privately owned, a potential exists for increasing residential or commercial use of the area. Increasing recreational, residential, or commercial use of the private lands along the creek would likely result in increased cumulative adverse effects to both loach minnow and spikedace through increased water use, pollution, and increased alteration of the streambanks through riparian vegetation suppression, bank trampling, and erosion. An increase in human structures in the area would likely lead to more bank stabilization and channelization, and watershed degradation, changing the availability and quantity of suitable loach minnow and spikedace habitat.

Within the action area, lands along the San Francisco River are a mix of BLM, State, and private lands. Upstream of the action area, most of the river is administered by the Apache-Sitgreaves National Forest. Non-Federal activities such as grazing and road construction and maintenance occur on the State and private lands. Recreation in the area is light and, with the exception of vehicles and the road through the river bottom, in general has a minor impact on the river. Private lands along the San Francisco River are used almost entirely for livestock grazing, which is managed in conjunction with grazing on Federal allotments.

Within the action area, critical habitat along Bonita Creek is mainly on BLM lands, but some non-federal lands are included in the designation. These lands could be developed for water extraction in the future, which may decrease the flow of Bonita Creek in certain areas. Upstream of the action area, the creek is on the San Carlos Apache Nation lands. Non-Federal activities such as grazing and road construction and maintenance may occur on the Nation lands.

Razorback sucker

Non-native species introductions throughout the Gila River system pose a continual threat to sucker populations. Farming and ranching activities occur in the bottom of the Gila River, particularly downstream of the San Jose Diversion. Groundwater pumping in the Safford area threatens the baseflow of the Gila River. Livestock grazing on the private and State lands portions of the BLM allotments as well as outside of allotments has the same effects as those described herein but are not subject to consultation. Water diversions, agricultural return flows, flood control and channelization projects, and recreational activities, particularly in the river bottoms, all are expected to occur outside of section 7 consultations. Most activities in the watersheds of the Gila and San Francisco rivers, or in Bonita Creek, will likely be Federal actions requiring consultation due to the extent of Federal lands (BLM and Forest Service) in the project area (see discussion of cumulative effects for loach minnow and spikedace).

Huachuca water umbel

Livestock grazing on non-Federal lands in the Babocomari allotment (5208) may affect the umbel through direct trampling of individuals and loss of stream bank stability, but it is unknown exactly how this is affecting plant clumps or populations or their habitat. Condition on non-Federal land in the Babocomari allotment is unknown, and cannot reliably be extracted from BLM condition because only sixteen percent of the allotment is BLM land. A few allotments adjacent to the SPRNCA have less than 30% BLM land, so condition on BLM lands does not necessarily reflect the condition on non-Federal lands. Watershed effects to the umbel and critical habitat may be occurring, as described in previous sections, but the magnitude is unknown because the condition is unknown.

Water withdrawals in the upper San Pedro subwatershed (Sierra Vista, Huachuca City, etc.) are contributing to a decline in the regional aquifer (22410-2007-F-0132, Biological Opinion of the Proposed Ongoing and Future Military Operations and Activities at Fort Huachuca). Draw down of the aquifer can have long-lasting effects by reducing the base flow and the amount of perennial water in the SPRNCA. As a species dependent on shallow, perennial flow, umbel is expected to be one of the first species seriously impacted by ground water declines.

The upper San Pedro River is currently an important corridor for cross border violators. Recent completion of a border wall with a gap at the river likely funnels traffic into the river corridor. Illegal traffic results in trailing, trash, and fires. Because of this funneling effect, law enforcement activities have also increased along the river, with associated adverse effects.

Peebles Navajo cactus

The majority of the populations of this species occur on Federal lands, and effects from most land management activities would be subject to section 7 consultation. However, the species also occurs on non-Federal lands adjacent to BLM lands, including within the Apache Butte allotment. Rock and petrified wood collectors, ranchers, and off-highway vehicle recreationists use the myriad of roads within the geographical distribution of the species for various purposes (U.S. Fish and Wildlife Service 1984b); and these various activities often lead to trampling and crushing of individual plants, as well as both soil erosion and compaction of the species' habitat. Illegal

collection of Peebles Navajo cactus is another ongoing threat, which has cumulative effects.

Most cumulative effects that may be incurred by the species would likely occur to those plants located on private land, adjacent to BLM land. Livestock could trample cacti and affect their habitat as described in the previous sections. Populations on State or private land have minimal protection, unless activities that affect the cactus have a Federal nexus. These non-Federal lands can be sold for development or other uses that can adversely affect the cactus. Cacti on these lands are often not protected by fences, and unrestricted off-road vehicle activities are occurring in some of these areas. Mining and sand and gravel operations are currently taking place near the ACEC for Peebles Navajo cactus. Ongoing operation of the Cholla power plant and associated land fill for disposal of fly ash has resulted in ash blowing into the cacti area and covering plants.

Pima pineapple cactus

The majority of PPC habitat occurs on Arizona State lands, some of it adjacent to BLM lands, in and outside of the allotments. State lands are managed primarily for income to the State Trust and ultimately may be sold for development or other purposes. Urban development is the primary threat to the species and causes loss of individuals and fragmentation of populations, especially populations that exist on different land ownerships. Off-road vehicle use also occurs on State land and illegally on BLM lands. This activity, often unsupervised, contributes to habitat degradation and loss of plants. Erosion, leading to the formation of gullies and headcuts, can form on adjacent State lands and spread onto BLM lands. Livestock grazing on State and private lands, if not properly managed, can contribute to PPC habitat degradation. Trail creation and use, off-road driving, and trash dumping associated with undocumented alien traffic and associated law enforcement response has been observed in PPC habitat. These actions increase the likelihood directly affecting individual cacti, compacts soil, and increases the likelihood of wildfire. Trails may act as vector points for the movement of invasive species into PPC habitat. Illegal collection of this cactus is an additional threat with cumulative effects.

CONCLUSION

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

Southwestern willow flycatcher

After reviewing the current status of southwestern willow flycatcher, the environmental baseline for the action area, the effects of the Gila District grazing program and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the southwestern willow flycatcher, nor likely to destroy or adversely modify critical habitat. We base these conclusions on the following reasons:

1. Livestock have been excluded from flycatcher habitat on all BLM lands (except on the northern portion of the Christmas allotment, which will have livestock excluded eventually), and some non-Federal lands, in the allotments during the breeding season. Livestock in the exclosures are removed as soon as possible. These actions minimize direct effects to breeding

flycatchers and habitat.

2. The BLM will implement measures to reduce livestock concentration near flycatcher habitat, monitor cowbird parasitism, and possibly implement livestock management actions to reduce cowbird parasitism (if BLM and FWS determine necessary) to further reduce the effects of livestock management on breeding flycatchers (Southwestern Willow Flycatcher Conservation Measure # 4).

3. The BLM will continue to manage BLM lands to meet the standards and guidelines, which will minimize both direct and indirect watershed effects to flycatcher habitat, including critical habitat, and possibly minimize effects to habitat over time.

4. The recovery potential of critical habitat will not be compromised because the BLM will implement actions that minimize or eliminate adverse effects to the PCEs, resulting in meeting the intent of the recovery plan for livestock management in flycatcher habitat.

New Mexico ridge-nosed rattlesnake

After reviewing the current status of New Mexico ridge-nosed rattlesnake, the environmental baseline for the action area, the effects of the Gila District grazing program and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the New Mexico ridge-nosed rattlesnake, nor likely to destroy or adversely modify designated critical habitat for species. We base these conclusions on the following reasons:

1. The BLM will implement conservation measures to improve or maintain habitat conditions for the rattlesnake, including managing for the standards and guidelines.

2. Rattlesnake habitat on the BLM allotments represents a relatively minor percentage of habitat in the Peloncillo Mountains and the current range of the species.

3. No New Mexico ridge-nosed rattlesnakes have been found on the BLM allotments.

4. No critical habitat occurs in the action area.

Desert pupfish

After reviewing the current status of desert pupfish, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the desert pupfish, nor likely to destroy or adversely modify designated critical habitat for desert pupfish. We base these conclusions on the following reasons:

1. Few or no direct effects from permitted livestock to desert pupfish are expected in the Day Mine, Fan, Muleshoe, Soza Mesa, C-Spear, Johnny Creek, or Bull Gap allotments, or in the SPRNCA either because pupfish populations are within livestock exclosures, livestock is not currently proposed on the allotment, or current populations and possible future reestablishment

sites are inaccessible to livestock.

2. Few direct effects are anticipated in the Bonita Creek allotment because only trailing once or twice per year will occur through Bonita Creek.

3. If livestock grazing is resumed on the South Rim Allotment, the management guidelines for this allotment will be conducive to maintaining reestablished populations because of implementing the conservation measures established for this allotment.

4. Watershed effects to the sites will be minimal because pupfish populations are protected from livestock grazing, watersheds do not have permitted livestock grazing, or, if grazing is permitted, it will be managed to meet the standards and guidelines.

5. Conservation measures will be implemented as part of the proposed action that will help to maintain or improve sites for desert pupfish, including maintaining exclosures and having livestock removed from exclosures as soon as possible.

6. No critical habitat occurs in the action area, so none will be affected.

Gila chub

After reviewing the current status of chub, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the chub, nor likely to destroy or adversely modify designated critical habitat for chub. We base these conclusions on the following reasons:

1. Few or no direct effects from permitted livestock to chub are expected in Bonita Creek, Mineral Creek, the Muleshoe EMA allotments, or the SPRNCA either because livestock grazing is not currently proposed, or current populations and possible future reestablishment sites are inaccessible to livestock because of topography or exclosures.

2. Few direct effects are anticipated in the Bonita Creek allotment because the grazing activities in the stream are from trailing through Bonita Creek once or twice per year.

3. Watershed effects to the sites will be minimal to the chub because of the low stocking levels, and all allotments will be managed to meet the standards and guidelines.

4. Few to no direct or indirect effects to the PCEs in critical habitat in the Muleshoe EMA and Mineral Creek areas will occur because permitted livestock grazing does not occur in the critical habitat, and because the critical habitat and areas upslope from the critical habitat have relatively low stock levels and will be managed to meet the standards and guidelines.

5. The effects of the proposed action will not significantly alter any of the critical habitat PCEs (is not among the types of effects identified in the final rule) that typically result in adverse modification or destruction of critical habitat, so it will not compromise the recovery potential of critical habitat.

Gila topminnow

After reviewing the current status of Gila topminnow, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is not likely to jeopardize the continued existence of the Gila topminnow. No critical habitat is designated, thus none will be affected. We base this conclusion on the following reasons:

1. Few or no direct effects from permitted livestock to Gila topminnow are expected in the Day Mine, South Rim, Fan, Muleshoe, Soza Mesa, C-Spear, Johnny Creek, or Bull Gap allotments, or the SPRNCA either because the sites where fish occur are, or will be, excluded from livestock, the allotment currently does not have permitted livestock, or current populations and possible future reestablishment sites are inaccessible to livestock.

2. Few direct effects are anticipated in the Bonita Creek allotment because only trailing once or twice per year will occur through Bonita Creek. No population level effects are anticipated.

3. If livestock grazing is resumed on the South Rim Allotment, the management guidelines for this allotment will facilitate maintenance of reestablished populations because of implementing the conservation measures established for this allotment.

4. Watershed effects to topminnow populations will be minimal because populations are protected from livestock grazing, or because the watersheds that include those populations do not have livestock grazing, or, if grazed, will be managed to meet the standards and guidelines.

5. Conservation measures will be implemented as part of the proposed action that will help to maintain or improve sites for Gila topminnow, including having livestock removed from exclosures as soon as possible.

Little Colorado spinedace

After reviewing the current status of Little Colorado spinedace, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the Little Colorado spinedace, nor likely to destroy or adversely modify its designated critical habitat. We base these conclusions on the following reasons:

1. No direct effects to individual spinedace are anticipated because all of the occupied and potentially occupied habitats in the action area, except around Woodruff Dam on Silver Creek, are excluded from livestock grazing on BLM lands either through exclosures or by topography, or conditions necessary for spinedace presence are not present. Livestock use of the area about 1000 feet above the Woodruff dam will result in few effects to spinedace or their habitat because the current habitat characteristics are poor for spinedace, and we anticipate that few, if any, spinedace will occur in this area.

2. Watershed effects from livestock grazing on BLM lands within five miles of spinedace habitat

are minimal because these lands are being managed to meet the standards and guidelines. Most (all but one) of the BLM lands in these allotments have been assessed and are meeting the current standards.

3. No direct effects to critical habitat or the PCEs will occur, because no BLM lands within allotments on Chevelon Creek include critical habitat. Any direct effects occurring on non-BLM lands in the Chevelon Creek North allotment are not among the effects of the action because the allotment contains less than 30 % BLM lands.

4. Watershed effects to critical habitat in Chevelon Creek would be minimal because of the distance from BLM lands and because the BLM lands in the Chevelon Creek North allotment are meeting the standards and guidelines.

5. Because no measurable effects to the PCEs are anticipated, the recovery potential of the critical habitat in the action area will not be compromised.

Loach minnow

After reviewing the current status of loach minnow, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the loach minnow, nor likely to result in destruction or adverse modification of its critical habitat. We base these conclusions on the following reasons:

1. Few or no direct effects from permitted livestock to loach minnow are expected in most of the BLM lands in which the species occurs either because the populations are, or will be, excluded from livestock, the allotment currently does not have permitted livestock, only trailing once or twice a year occurs, or sites are inaccessible to livestock.

2. Watershed effects to loach minnow populations will be minimal because of low stocking levels and because the allotments will be managed to meet the standards and guidelines.

3. Conservation measures will be implemented as part of the proposed action that will help to maintain or improve habitats for loach minnow, including having livestock removed from exclosures as soon as possible and removing non-native species in and adjacent to occupied sites.

4. Critical habitat PCEs in the Aravaipa Creek, San Francisco River, Bonita Creek, and Muleshoe areas may be affected by occasional livestock use and trailing, and winter grazing in Smuggler Peak allotment, but the effects would be small and temporary, and not measurable or substantial for loach minnow in the long-term.

5. The recovery potential of critical habitat will not be compromised by the proposed action because the allotments will be managed over time to maintain and improve the PCEs, which will result in the perpetuation of loach minnow populations.

Spikedace

After reviewing the current status of spikedace, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the spikedace, nor likely to result in destruction or adverse modification of its critical habitat. We base these conclusions on the following reasons:

1. Few or no direct effects from permitted livestock to spikedace are expected on the BLM lands on which the species occurs either because the sites are, or will be, excluded from livestock, the allotment currently does not have permitted livestock, only trailing once or twice a year occurs, or sites are inaccessible to livestock.

2. Watershed effects to spikedace populations will be minimal because, if grazed, they will be managed to meet the standards and guidelines.

3. Conservation measures will be implemented as part of the proposed action that will help to maintain or improve habitats for spikedace, including having livestock removed from exclosures as soon as possible and removing non-native species in and adjacent to occupied sites.

4. Critical habitat PCEs in the Aravaipa Creek, San Francisco River, Bonita Creek, and Muleshoe areas may be affected by occasional livestock use and trailing, and winter grazing in Smuggler Peak allotment, but the effects would be small and temporary, and not measurable or substantial for loach minnow in the long-term.

5. The recovery potential of critical habitat will not be compromised by the proposed action because the allotments will be managed over time to maintain and improve the PCEs, which will result in the perpetuation of spikedace populations.

Razorback sucker

After reviewing the current status of razorback sucker, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the razorback sucker, nor likely to destroy or adversely modify its designated critical habitat. We base these conclusions on the following reasons:

1. The BLM will implement actions that eliminate or reduce the adverse effects to the sucker and its critical habitat, such as exclusions, seasonal restrictions, and other actions that minimize livestock use along and near the water.

2. Watershed effects to habitat will be minimized because the BLM will manage all the allotments to meet the currents standards and guidelines.

3. Current number of suckers in the project area is very low due to existing levels of non-native predators and habitats degraded by many factors.

4. Effects to critical habitat PCEs from livestock management are not anticipated to be measurable. The BLM will manage all BLM lands in allotments to meet the standards and guidelines, including implementing actions to minimize livestock use in critical habitat, so any effects should be minimized, and maybe improved, over time.

5. The recovery potential of critical habitat will not be compromised by the proposed action because any effects to the PCEs from the proposed action would be minimized, and potentially improved, over time because the BLM will manage the allotments to meet standards and guidelines, including in and upland of critical habitat.

Huachuca water umbel

After reviewing the current status of umbel, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is neither likely to jeopardize the continued existence of the umbel, nor likely to destroy or adversely modify its designated critical habitat.

We base these conclusions on the following reasons:

1. Livestock grazing is not permitted along the San Pedro River in the SPRNCA (except for the Brunchow Hill allotment), which is where critical habitat occurs in the action area; and BLM has agreed to work with the private landowners in the Brunchow Hill allotment to exclude livestock from BLM-administered lands (less than 500 feet) in that allotment within the riparian zone of the RNCA.

2. Unauthorized livestock are removed as soon as possible, and improvements are installed and maintained to minimize livestock use in the future.

3. The BLM lands on the Babocomari and Brunchow Hill allotments are meeting the riparian standards.

4. Though some effects are anticipated from the proposed action and other actions in the area, the species persists and reflects the fluctuations in habitat and population levels that are expected for this species.

5. Because the proposed action will not result in overgrazing, the effects of the proposed action will not significantly alter any of the critical habitat PCEs in a manner that typically results in adverse modification or destruction of critical habitat. Therefore, the recovery potential of critical habitat will not be compromised.

Peebles Navajo cactus

After reviewing the current status of Peebles Navajo cactus, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS' biological opinion that the grazing program, as proposed, is not likely to jeopardize the continued existence of the Peebles Navajo cactus. No critical habitat has been designated for this

species; therefore, none will be affected. We base this conclusion on the following reasons:

1. All known Peebles Navajo cacti on BLM lands are excluded from livestock grazing activities.

2. The BLM is committed to avoiding impacts to known populations of Peebles Navajo cactus in their livestock management program, including removing livestock from exclosures.

3. Exclosures will be constructed around any new cacti found during surveys within the Apache Butte allotment.

Pima pineapple cactus

After reviewing the current status of PPC, the environmental baseline for the action area, the effects of the Gila District grazing program, and the cumulative effects, it is the FWS's biological opinion that the grazing program, as proposed, is not likely to jeopardize the continued existence of the PPC. No critical habitat has been designated for this species; therefore, none will be affected. We base this conclusion on the following reasons:

1. The BLM will manage their lands to meet the standards and guidelines, which will result in minimal adverse effects and maintenance of current habitat for the species.

2. The BLM will not directly impact individual cacti during construction of range improvements because they will avoid any cacti found during the pre-construction survey, and will minimize any indirect effects.

3. Generally, relatively few individual cacti will be affected by livestock because individuals and small clumps of the cacti are scattered within the action area, and livestock are not likely to concentrate for an extended period of time in PPC locations.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM so that they become binding conditions of any grant or permit issued to the permittees, as appropriate, for

the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require the permittees to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the FWS as specified in the incidental take statement. [50 CFR 402.14(i)(3)].

Southwestern willow flycatcher

AMOUNT OR EXTENT OF TAKE

The FWS anticipates incidental take from livestock management to occur in the middle Gila River/lower San Pedro River areas from disturbance to nesting flycatchers and from cowbird nest parasitism. Take may be in the form of harm, harassment, injury, or death resulting from the loss or disturbance of a nest, fledgling mortality, or abandonment of nests or territories. Livestock are known to pull down or brush against nests while foraging in or walking through riparian areas; therefore, incidental take of willow flycatcher nests and young is a likely effect of grazing on non-federal lands in flycatcher breeding areas. Cowbird parasitism to flycatcher nests/chicks on BLM and non-Federal lands in riparian areas during the nesting season is also likely to occur.

The FWS anticipates incidental take of southwestern willow flycatchers will be difficult to detect or determine for the following reasons:

1. The number and location of cowbirds and flycatchers will vary from season to season.

2. The small, fluctuating number of breeding flycatchers in a given location precludes the application of numerical standards for take. In addition, nest placement and nest heights may hinder attempts to document the outcome of all nesting attempts at a given location.

3. If initiated, the success of the cowbird management program cannot be predicted.

We conclude that anticipated incidental take from the proposed action will be exceeded if one or more of the following conditions are met:

1. Unauthorized livestock on BLM lands in flycatcher habitat within the middle Gila River/lower San Pedro Rive areas are not removed as soon as possible during the nesting season, and this use occurs more than once during a nesting season.

2. Cowbird parasitism, as a result of livestock management, results in annual nest failure of more than 10 percent of southwestern willow flycatcher nests within the monitored flycatcher habitat in the middle Gila River/Upper San Pedro River areas.

EFFECT OF THE TAKE

In this biological opinion, the FWS determines that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat for the reasons stated in the Conclusions section.

REASONABLE AND PRUDENT MEASURES and TERMS AND CONDITIONS

All appropriate reasonable and prudent measures from the 1997 BO and 18 Allotments BO have been incorporated as conservation measures for this consultation (though some may have been edited or combined). These conservation measures generally and specifically require the BLM to reduce effects to the flycatcher and its habitat. No additional reasonable and prudent measures are necessary to minimize incidental take.

New Mexico ridge-nosed rattlesnake

AMOUNT OR EXTENT OF TAKE

The FWS anticipates incidental take from livestock management by directly killing or harming snakes (trampling, vehicles, etc.) and indirectly through reduction of cover from livestock grazing (as described herein and in the 1997 BO). The anticipated level of incidental take and standards for determining when that level has been exceeded is the same as described in the 1997 BO and is listed below:

1. Two New Mexico ridgenose rattlesnakes as a result of direct impacts, including trampling by cattle or horses associated with grazing, snakes run over by vehicles associated with grazing, vegetation management projects, and construction and maintenance of range improvement projects.

2. One New Mexico ridgenose rattlesnake as a result of indirect effects of livestock grazing, including reduction of perennial grass cover quantity or quality.

EFFECT OF THE TAKE

In this biological opinion, the FWS determines that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat for the reasons stated in the Conclusions section.

REASONABLE AND PRUDENT MEASURES and TERMS AND CONDITIONS

All appropriate reasonable and prudent measures from the 1997 BO have been incorporated as conservation measures for this consultation (though some may have been edited or combined). These conservation measures generally and specifically require the BLM to reduce effects to the rattlesnake and its habitat. No additional reasonable and prudent measures are necessary to minimize incidental take.

Desert pupfish and Gila topminnow

AMOUNT OR EXTENT OF TAKE

The FWS anticipates incidental take from livestock grazing to occur on the South Rim Allotment in the Aravaipa area if this allotment is stocked with livestock in the future.

Incidental take from future livestock management on the South Rim allotment, if it is stocked, is expected to occur both as direct mortality of individual desert pupfish and Gila topminnow, and as indirect loss resulting from habitat modification and destruction, as described herein and in the Aravaipa Creek reestablishment BO. The anticipated level of incidental take and standards for determining when that level has been exceeded are the same as described in that BO and are listed below.

We anticipate incidental take of desert pupfish and Gila topminnow will be difficult to detect for the following reasons: these species have a small body size, losses may be masked by seasonal fluctuations in numbers or other causes (e.g., oxygen depletions for aquatic species), and the species occurs in habitat that makes detection difficult; therefore finding a dead or impaired specimen is unlikely. Incidental take from the ongoing livestock management on the South Rim allotment is expected to occur both as direct mortality of individual fish, and as indirect loss resulting from habitat modification and destruction (harm) at the establishment sites. Direct mortality and habitat modification may occur during trampling of stream channels if livestock access the sites, or if the sites are fenced in the future, and those fences are periodically washed out, cut, or damaged and are not quickly replaced.

For general on-going livestock grazing and its management, desert pupfish and Gila topminnow within reestablishment sites, and any sites where they become established through dispersal, could be taken through direct mortality if livestock have access to these sites. Since these sites are generally remote, monitoring will be intermittent relative to the duration of the action, the desert pupfish and Gila topminnow are small bodied organisms, and the probability of detecting direct take is small; the condition of habitat as measured by utilization of the riparian browse species and bank alteration will be used as a surrogate measure of take. Vegetation utilization and bank alteration by livestock are related to livestock numbers and the duration of time in which they are present at a site. This is directly proportional to the probability of take occurring through trampling and harm through habitat alteration. Therefore, take will be considered to have been exceeded if the following conditions occur on the South Rim allotment:

1. Livestock grazing occurs within a site at a level resulting in more than 30 percent utilization of woody riparian species (measured as percentage of apical meristems within 2 m (6 ft) of the ground grazed) and trampling, chiseling, or other physical impact by livestock on more than 20 percent of the alterable stream banks by length and livestock have contributed to these habitat modifications; or

2. An exclosure fence is cut, down, open, or non-functional for more than two weeks while permitted livestock are in any adjacent pasture next to the exclosure, or for more than two months in any given year if livestock are in a pasture that is not adjacent to the exclosure; or

3. Livestock are present for more than two weeks continuously, or more than a total of two months in any given year, at sites that are difficult for livestock to access.

Incidental take of desert pupfish and Gila topminnow is not reasonably certain to occur in the Muleshoe EMA Area because the areas that have desert pupfish and Gila topminnow now or in the future are generally inaccessible to or will be excluded from livestock; therefore, there will be little to no direct effects from livestock use to the desert pupfish or Gila topminnow or their

habitat. This is a change from the Muleshoe reestablishment BO, in which extremely low levels of incidental take were anticipated for the Muleshoe EMA Area, and a take statement was presented in the eventuality that take could occur, but no livestock management criteria for exceeding take were presented.

EFFECT OF THE TAKE

In this biological opinion, the FWS determines that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat for the reasons stated in the Conclusions section.

REASONABLE AND PRUDENT MEASURES and TERMS AND CONDITIONS

All appropriate reasonable and prudent measures and terms and conditions from the 1997 BO, Aravaipa Creek reestablishment BO, Muleshoe EMA fish reestablishment BO, and the Bonita Creek fish reestablishment BO, have been incorporated as conservation measures for this consultation (though some have been edited or combined). These conservation measures generally and specifically require the BLM to reduce effects to fish and their habitat. No additional reasonable and prudent measures are necessary to minimize incidental take.

Gila chub

AMOUNT OR EXTENT OF TAKE

The FWS does not anticipate the proposed action will result in incidental take of Gila chub because populations are protected by exclosures or topography, trailing is limited so that it is not reasonably certain that fish would be affected, and indirect watershed effects would be minimal because the allotments will be managed to meet standards and guidelines.

Incidental take of Gila chub is not reasonably certain to occur in the Muleshoe EMA Area because the areas that have Gila chub now or in the future are generally inaccessible to or will be excluded from livestock; therefore, there will be little to no direct effects from livestock use to the Gila chub or its habitat. This is a change from the Muleshoe reestablishment BO, in which extremely low levels of incidental take were anticipated for the Muleshoe EMA Area, and a take statement was provided in the eventuality that take could occur, but no livestock management criteria for exceeding take were presented.

Incidental take of Gila chub is not reasonably certain to occur in the Bonita Creek Area because the areas that have Gila chub now or in the future are excluded from livestock grazing and trailing of livestock would take place infrequently (once or twice a year across the creek) and in a very small portion of the creek. This is a change from the Gila Box RNCA BO (#02-21-92-F-0700) in which incidental take was anticipated because of the livestock trailing. Based on the analysis for the other fish species in the Bonita Creek reestablishment BO, which is the same proposed action for livestock management in the Bonita Creek area, we have determined that the criteria used for the other fish species applies to the Gila chub also.

Little Colorado spinedace

AMOUNT OR EXTENT OF TAKE

The FWS does not anticipate the proposed action will result in incidental take of Little Colorado spinedace for the following reasons:

- The only allotments where grazing would potentially occur in occupied spinedace habitat are the Little Colorado River, Little Reservoir allotments, and Silver Creek above Woodruff Dam. Incidental take in these areas is not reasonably certain to occur because 1) of the fluctuations in populations and locations, 2) BLM will have livestock removed from the Little Colorado River Allotment exclosure as soon as possible, 3) it is unlikely that spinedace are present in Lyman Lake next to BLM land in the Little Reservoir Allotment because of the presence of predatory non-native fish, and 4) we anticipate that few, if any, spinedace occur above Woodruff Dam because the habitat is poor. The other known occupied and potentially occupied areas on BLM lands are excluded from livestock management either through exclosures or topography.

- Indirect effects resulting from alteration of watershed function are not reasonably expected to rise to the level of causing incidental take because the allotments will be managed to meet standards and guidelines.

Loach minnow and Spikedace

AMOUNT OR EXTENT OF TAKE

The FWS does not anticipate incidental take of loach minnow and spikedace from the proposed action because no livestock grazing is permitted, trailing is limited so that it is not reasonably certain that fish would be affected, or areas where fish occur are generally inaccessible to livestock.

Incidental take from livestock grazing is not reasonably certain to occur in the Aravaipa Creek area from livestock use and trailing because trailing will only be with 10 head of livestock, will occur infrequently (no more than three times per year), and occur in only a small portion of the creek.. This is a change from the 1997 BO, in which incidental take was anticipated for the Aravaipa Creek allotments. The action of trailing livestock in Aravaipa Creek is similar to the action of trailing livestock in Bonita Creek (as described in the Bonita Creek reestablishment BO and in this BO) and results in the same effects. Therefore, we have determined that the reasons for not anticipating incidental take for loach minnow, spikedace, and other fish in Bonita Creek are also reasons for not anticipating incidental take of loach minnow and spikedace in Aravaipa Creek.

Incidental take of loach minnow is not reasonably certain to occur in the San Francisco River because the presence of loach minnow is intermittent and fluctuates over time (as described in the effects section of this BO and in the RMP BO). Loach minnow have not been detected in the San Francisco River in the action area since 1995. This is a change from the 1997 BO, in which incidental take was anticipated for the San Francisco River allotments.

Incidental take of loach minnow and spikedace is not reasonably certain to occur in Bonita Creek from livestock use or trailing because livestock grazing is not permitted in the creek, trailing will take place infrequently and in a very small portion of the creek. See the Bonita Creek Reestablishment BO for additional information.

Incidental take of loach minnow and spikedace is not reasonably certain to occur in the Muleshoe EMA Area because the areas that have these species now or in the future are generally inaccessible to or will be excluded from livestock; therefore, there will be little to no direct effects from livestock use to these species or their habitat. This is a change from the Muleshoe reestablishment BO, in which extremely low levels of incidental take were anticipated for the Muleshoe EMA Area, and a take statement was provided in the eventuality that take could occur, but no livestock management criteria for exceeding take were presented.

Razorback sucker

AMOUNT OR EXTENT OF TAKE

The FWS does not anticipate the proposed action will result in incidental take of razorback suckers because, if suckers are present, they are present at very low numbers and density, and unlikely to be taken as a result of the proposed action.

Plants

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of Federally listed endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

Southwestern willow flycatcher

1. We recommend that BLM continue supporting and participating in southwestern willow flycatcher survey and monitoring efforts on BLM-administered lands in Arizona.

2. We recommend that BLM work toward restoring native riparian vegetation in sites that have the potential to support future breeding habitat for this species.

3. We recommend that BLM collect flow data to apply for instream flow rights with the Arizona Department of Water Resources in rivers supporting willow flycatcher habitat on or downstream of BLM lands in order to protect and maintain these habitats, if such rights have not been previously obtained.

4. We recommend that BLM not consider land exchanges that would transfer riparian area river channels, floodplains, and terraces out of Federal ownership, and carefully examine all exchanges that could affect water flows (either groundwater or surface water) to ensure that development on those lands would not affect riparian habitats.

5. We recommend that the BLM work with non-Federal landowners on allotments within and near breeding flycatchers to extend cowbird trapping efforts, if implemented, onto private property as appropriate for the protection of breeding flycatchers and to implement riparian habitat protection and restoration.

6. We recommend that BLM work with the FWS and other partners to implement the flycatcher recovery plan.

New Mexico ridge-nosed rattlesnake

1. We recommend that the BLM coordinate with State agencies and FWS to inventory habitat on BLM lands in the Peloncillo Mountains.

2. We recommend that the BLM coordinate with the New Mexico Department of Game and Fish, AGFD, Malpai Borderlands Group, FWS, and other landowners and managers in the area in developing rattlesnake management plans, including a revision of the recovery plan for the species.

3. We recommend that the BLM, in coordination with AGFD and the FWS, survey potential habitats in the Peloncillo Mountains for New Mexico ridgenose rattlesnakes, and fund research designed to clarify life history and ecology of the species, which would help quantify the effects of BLM-authorized activities, particularly livestock grazing and recreation, on the status of the snake.

For all fish species

1. We recommend that BLM coordinate with AGFD and FWS in efforts to work with private landowners upstream of known locations to eradicate any source populations of non-native aquatic species from their lands.

2. We recommend that BLM collect flow data to apply for instream flow rights with the Arizona Department of Water Resources in occupied fish sites, if such rights have not been previously obtained.

3. We recommend that the BLM consider additional private property acquisition to expand the boundaries of the Muleshoe EMA to include any additional ecologically sensitive areas.

4. We recommend that the BLM coordinate with the San Carlos Apache Tribe on a watershed-level conservation plan for Bonita Creek with the objective of protecting the watershed, minimizing livestock movement from Tribal lands onto BLM lands, and preventing introductions of non-native fishes and other organisms.

5. We recommend that the BLM keep accurate records as to the successes and complications encountered with stocking efforts. These records will assist others in future stocking efforts.

6. We recommend that the BLM work with FWS on developing, if necessary, and implementing the recovery plan for each fish, and assist in establishing additional populations.

7. We recommend that the BLM coordinate with other land managers and landowners to develop cooperative projects to improve watershed conditions.

8. We recommend that the BLM coordinate with FWS on identifying locations that apparently no longer support a species, and provide any recommendations on habitat suitability and extant/extirpated population status.

9. We recommend that the BLM conduct surveys for spikedace in the San Pedro River from the Aravaipa confluence to Dudleyville and report to FWS the findings of such surveys.

10. We recommend that the BLM conduct surveys for the loach minnow in the San Francisco River through the San Francisco and Red Hickey Hills allotments and report to the FWS the findings of such surveys.

11. We recommend that the BLM close or stabilize the San Francisco River Road and work with private landowners to remove livestock grazing from the San Francisco River below the Forest Service boundary.

12. We recommend that the BLM cooperate with the FWS, AGFD, National Park Service, the Forest Service, Arizona State Lands Department, the San Carlos Apache Tribe, and private land owners within the upper Gila River watershed to seek and implement solutions to problems involving recovery of the razorback sucker.

Huachuca water umbel

1. We recommend that the BLM participate in the development of the recovery plan for this species.

2. We recommend that the BLM evaluate habitats along the Babocomari River, in the Babocomari Allotment, for umbel habitat, and coordinate with the permittee, the private land owner within the allotment, and FWS on actions to enhance the habitat.

4. We recommend that the BLM work with FWS and the Tucson Sector of the U.S. Border Patrol on plans to reduce the impact of illegal activities and associated law enforcement response along the San Pedro RNCA.

5. We recommend that the BLM continue to work with the Upper San Pedro Partnership to develop and implement projects that help bring the water budget for the subwatershed into

balance.

Lesser Long-nosed Bat

1. Support surveys for lesser long-nosed bats to facilitate better management of lesser long-nosed bats and their habitat.

Peebles Navajo cactus

1. We recommend that BLM pursue acquisition of non-Federal lands in the Tanner ACEC and other areas occupied by the species.

2. We recommend that the BLM assist us in implementing the Peebles Navajo Cactus recovery plan.

3. We recommend that the BLM continue to monitor populations of Peebles Navajo cactus on BLM lands.

Pima pineapple cactus

1. We recommend that BLM participate in the development of a recovery plan for PPC.

2. We recommend the BLM establish livestock exclosures with controls in areas of relatively high densities of Pima pineapple cactus to investigate the effects of grazing on the cactus.

3. We recommend the BLM map the occurrence and abundance of Lehmann lovegrass and buffelgrass within the allotments.

4. We recommend that the BLM develop techniques for and reestablish native grasses in the allotments.

5. We recommend that the BLM fund research of the pollination biology of Pima pineapple cactus, which would contribute to our understanding of how habitat fragmentation affects this plant.

6. We recommend that the BLM monitor allotments for illegal collection of Pima pineapple cactus and report to the FWS results of such monitoring.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the reinitiation request for the Gila District Livestock Grazing Program. As provided in 50 CFR '402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action

has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The FWS appreciates the Gila District's efforts to identify and minimize effects to listed species from this project. For further information please contact Mark Crites (520) 670-6150 (x229) or Scott Richardson (x242). Please refer to the consultation number 22410-F-2006-0414 in future correspondence concerning this project.

/ s / Jean Calhoun for
Steven L. Spangle

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TABLES AND FIGURES

FIGURE 1. ACTION AREA

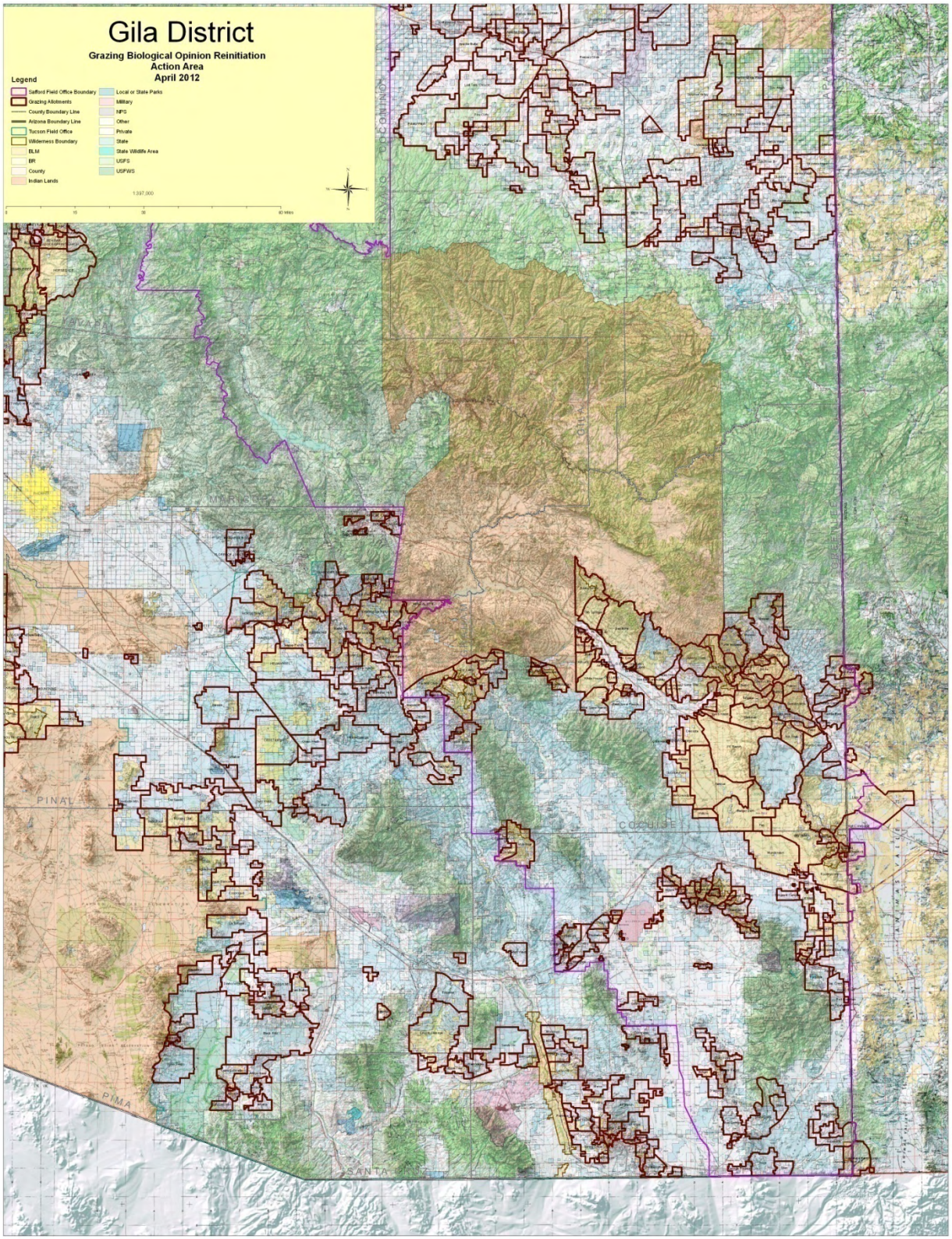

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06007	Washboard Wash	C	6806	26240	33046	21	384	*	X	2-21-96-F-422 and 423 and 02-21-01-I-0063
06008	Ramsey Slide	C	3569		3569	100	264	*		2-21-96-F-422 and 423
06017	Manila Wash	C	354	2330	2684	13	60	*		2-21-96-F-422 and 423
06019	Tucker Flat	C	548	35500	36048	2	72	*		2-21-96-F-422 and 423
06024	Relic Point	C	120	64694	64814	0	24	*	X	2-21-96-F-422 and 423
06028	Little Ortega Lake	C	320	47466	47786	1	60	*		2-21-96-F-422 and 423
06033	St. Johns	C	953	11908	12861	7	160	*		2-21-96-F-422 and 423
06034	White Mountain Lake	C	226	22127	22353	1	36	*	X	2-21-96-F-422 and 423
06036	Solomon Butte	C	1880	16320	18200	10	324	*		2-21-96-F-422 and 423
06037	Dry Lake	C	336	16640	16976	2	60	*		2-21-96-F-422 and 423
06038	Toltec Divide	C	124	9591	9715	1	24	*		2-21-96-F-422 and 423
06047	F Bar	C	210	4500	4710	4	24	*	X	2-21-96-F-422 and 423
06049	Milky Wash	C	120	24205	24325	0	12	*		2-21-96-F-422 and 423
06051	Puerco River	C	8113	21309	29422	28	1236	*		2-21-96-F-422 and 423
06052	The Divide	C	2558	16490	19048	13	456	*	X	2-21-96-F-422 and 423
06058	Pink Cliffs	C	5880	54080	59960	10	923	*		2-21-96-F-422 and 423
06061	Mesa Parada	C	546	6744	7290	7	84	*		2-21-96-F-422 and 423
06064	Lost Tank Canyon	C	5612	165322	170934	3	840	*		2-21-96-F-422 and 423
06069	Scraper Knoll	C	320	7082	7402	4	36	*		2-21-96-F-422 and 423
06070	Big Hollow Wash	C	636	14700	15336	4	84	*		2-21-96-F-422 and 423
06071	Wiidcat Creek	C	1448	8860	10308	14	276	*		2-21-96-F-422 and 423
06073	Apache Butte	C	6703	25793	32496	21	756	*		2-21-96-F-422 and 423

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06074	Flying Butte	C	5123	5650	10773	48	480	*		2-21-96-F-422 and 423
06076	Straddling Lake	C	825	2882	3707	22	132	*		2-21-96-F-422 and 423
06081	Zuni Wash	C	1120	18400	19520	6	193	*		2-21-96-F-422 and 423
06084	Sheepskin Wash	C	135	1280	1415	10	14	*		2-21-96-F-422 and 423
06087	Potato Wash	C	3233	28707	31940	10	432	*	X	2-21-96-F-422 and 423
06088	Hunt Valley	C	676	2198	2874	24	120	*		2-21-96-F-422 and 423
06091	Leroux Wash	C	1890	54850	56740	3	60	*		2-21-96-F-422 and 423
06092	Digger Wash	C	334	97800	98134	0	36	*		2-21-96-F-422 and 423
06096	Zion	C	600	2500	3100	19	84	*		2-21-96-F-422 and 423
06098	Gravel Pit	C	160	1400	1560	10	12	*	X	2-21-96-F-422 and 423
06106	Black Mesa	C	880	35580	36460	2	168	*		2-21-96-F-422 and 423
06108	Twin Wells	C	1153	12315	13468	9	156	*		2-21-96-F-422 and 423
06110	Hardscrabble Wash	C	18124	33571	51695	35	1488	*		2-21-96-F-422 and 423
06114	Chevelon Creek North	C	1286	25600	26886	5	84	*	X	2-21-96-F-422 and 423
06127	Marcou Mesa	C	4059	18120	22179	18	924	*		2-21-96-F-422 and 423
06134	North Cerro Hueco	C	1280	1280	2560	50	288	*		2-21-96-F-422 and 423
06136	Ortega Sink	C	1880	2610	4490	42	360	*		2-21-96-F-422 and 423
06140	Cerro Hueco	C	3200	640	3840	83	696	*		2-21-96-F-422 and 423
06148	Dry Creek	C	2932	51231	54163	5	504	*		2-21-96-F-422 and 423
06149	Pipeline	C	920	9644	10564	9	108	*		2-21-96-F-422 and 423
06155	Carrizo Wash	C	4986	37120	42106	12	756	*		2-21-96-F-422 and 423
06156	Cedar Lake Wash	C	17093	39862	56955	30	2532	*		2-21-96-F-422 and 423
06157	St. Johns Wash	C	4709	13397	18106	26	708	*		2-21-96-F-422 and 423

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Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06158	Little Electric	C	1894	13284	15178	12	264	*		2-21-96-F-422 and 423
06159	Little Reservoir	C	160	43390	43550	0	6	*	X	2-21-96-F-422 and 423
06160	Carrizo Wash East	C	640	1360	2000	32	120	*		2-21-96-F-422 and 423
06162	Blanco	C	2786	5520	8306	34	420	*		2-21-96-F-422 and 423
06164	Black Ridge	C	200	2280	2480	8	24	*		2-21-96-F-422 and 423
06170	Zuni Concho	C	2518	58350	60868	4	72	*		2-21-96-F-422 and 423
06172	Mesa Wash	C	440	2919	3359	13	60	*		2-21-96-F-422 and 423
06176	Puerco Ridge	C	1600	29200	30800	5	276	*		2-21-96-F-422 and 423
06177	Woodruff	C	2797	6680	9477	30	216	*		2-21-96-F-422 and 423
06178	Bar A	C	6475	8855	15330	42	828	*	X	2-21-96-F-422 and 423
06179	Monument Hill	C	3291	12480	15771	21	408	*		2-21-96-F-422 and 423
06180	Mexican Wash	C	2667	10188	12855	21	660	*	X	2-21-96-F-422 and 423
06184	Hidden Lake	C	4493	41616	46109	10	408	*		2-21-96-F-422 and 423
06189	Seven Springs Ranch	C	215	12717	12932	2	24	*		2-21-96-F-422 and 423
06190	Zuni Wash Bridge	C	880	7041	7921	11	168	*		2-21-96-F-422 and 423
06195	Surprise Valley	C	14807	30503	45310	33	1524	*		2-21-96-F-422 and 423
06202	Chevelon Creek South	C	118	624	742	16	12	*		2-21-96-F-422 and 423
06205	Crazy Creek	C	1916	152000	153916	1	336	*		2-21-96-F-422 and 423
06207	Volcanic Ridge	C	320	1780	2100	15	48	*		2-21-96-F-422 and 423
06214	Phoenix Park Wash	C	640	5900	6540	10	60	*		2-21-96-F-422 and 423
06225	Holbrook	C	117	658	775	15	24	*	X	2-21-96-F-422 and 423
06228	Flint Knoll	C	160	17021	17181	1	24	*		2-21-96-F-422 and 423

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Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06230	Wiregrass Lake	C	1120	8560	9680	12	182	*		2-21-96-F-422 and 423
06231	Lyman Lake South	C	280	3411	3691	8	60	*	X	2-21-96-F-422 and 423
06232	Little Colorado River	C	480	190	670	72	84	*	X	2-21-96-F-422 and 423
06234	Cow Canyon	C	640	960	1600	40	120	*		2-21-96-F-422 and 423
06237	Aztec	C	2240	4900	7140	31	384	*		2-21-96-F-422 and 423
06241	Lithodendron Wash	C	5887	58108	63995	9	1116	*		2-21-96-F-422 and 423
06242	Silver Creek	C	640	39000	39640	2	85	*		2-21-96-F-422 and 423
06250	New Lake	C	964	3049	4013	24	84	*		2-21-96-F-422 and 423
06252	Mud Springs	C	1307	5762	7069	18	204	*		2-21-96-F-422 and 423
06253	Jarvis Wash	C	4393	1194	5587	79	636	*		2-21-96-F-422 and 423
06254	Porter Canyon	C	4160	8784	12944	32	504	*		2-21-96-F-422 and 423
06255	St. Johns Ranch	C	960	10560	11520	8	48	*		2-21-96-F-422 and 423
40010	Metcalf	C	1247	12048	13295	9	87	YL		02-21-96-F-0160
40020	San Francisco	I	3925	1480	5405	73	563	YL	X	02-21-96-F-0160
40030	Morenci	C	6224	19083	25307	25	852	YL	X	02-21-96-F-0160
40050	Red Hickey Hills	I	2460	3063	5523	45	240	YL	X	02-21-96-F-0160
40100	Smuggler Peak	M	13822	223	14045	98	1242	YL	X	02-21-96-F-0160
40110	Zorilla	I	14771	170	14941	99	2352	DR		02-21-96-F-0160
40140	Gila	I	2702	120	2822	96	192	DR	X	02-21-96-F-0160
40210	Twin C	I	10987	0	10987	100	1920	DR	X	02-21-96-F-0160
40220	County Line	M	9030	0	9030	100	1680	DR		02-21-96-F-0160
40230	Buck Canyon	I	5979	1216	7195	83	543	DR		02-21-96-F-0160

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Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
40310	San Jose Comm.	C	3360	0	3360	100	Set As Allowed	E		02-21-96-F-0160
40320	Yuma Wash	M	14480	340	14820	98	282	YL		02-21-96-F-0160
40330	Tollgate	I	20021	160	20181	99	1330	DR		02-21-96-F-0160
40340	Guthrie Peak	M	5903	0	5903	100	948	DR		02-21-96-F-0160
44010	Muleshoe	I	21124	5645	26769	79	346	NU	X	02-21-96-F-0160
44020	Soza Mesa	I	5300	320	5620	94	502	DR		02-21-96-F-0160
44090	C Spear	M	440	15127	15567	3	60	DR	X	02-21-96-F-0160
45180	Painted Cave	I	12711	7199	19910	64	1512	DR	X	02-21-96-F-0160
45200	Dry Camp	I	12759	80	12839	99	2796	DR	X	02-21-96-F-0160
45210	Aravaipa South	C	1157	7365	8522	14	168	YL		02-21-96-F-0160
45220	Aravaipa	I	8572	860	9432	91	1068	YL	X	02-21-96-F-0160
45240	Horse Mountain	I	2328	0	2328	100	372	DR	X	02-21-96-F-0160
45250	Laurel Canyon	C	289	4895	5184	6	36	YL		02-21-96-F-0160
45280	Hell Hole	I	2074	80	2154	96	156	YL	X	02-21-96-F-0160
45290	South Rim	I	34634	6268	40902	85	2898	DR	X	02-21-96-F-0160
45300	Brandenburg Mountain	C	520	7478	7998	7	24	YL	X	02-21-96-F-0160
45360	Reliable	C	610	780	1390	44	48	NU	X	02-21-96-F-0160
45370	Copper Creek	M	2295	24902	27197	8	204	DR	X	02-21-96-F-0160
46010	Diamond Bar	I	29462	158	29620	99	4200	YL	X	02-21-96-F-0160
46020	Tom Springs	I	16950	0	16950	100	1169	DR		02-21-96-F-0160
46030	Ft. Thomas	C	570	0	570	100	Set As Allowed	E		02-21-96-F-0160
46040	Day Mine	I	55256	2235	57491	96	3562	DR	X	02-21-96-F-0160

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Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
46050	N. Eden Comm.	C	3000	0	3000	100	Set As Allowed	E		02-21-96-F-0160
46060	S. Eden Comm.	C	5440	0	5440	100	Set As Allowed	E		02-21-96-F-0160
46070	Billingsly Creek	C	350	80	430	81	Set As Allowed	E		02-21-96-F-0160
46080	Bryce	I	19151	34120	53271	36	1678	SR		02-21-96-F-0160
46090	Kimball Comm.	C	1520	0	1520	100	Set As Allowed	E		02-21-96-F-0160
46100	Talley Wash	C	2590	7018	9608	27	70	YL		02-21-96-F-0160
46110	Skinner Comm.	C	1330	50	1380	96	Set As Allowed	E		02-21-96-F-0160
46120	Rest Haven	C	1404	681	2085	67	Set As Allowed	E		02-21-96-F-0160
46130	Lone Star	I	12244	20613	32857	37	863	DR		02-21-96-F-0160
46150	Johnny Creek	I	15840	7462	23302	68	1804	DR	X	02-21-96-F-0160
46160	Bonita Creek	I	24237	934	25171	96	3341	DR	X	02-21-96-F-0160
46170	Bullgap	I	9016	20	9036	100	1248	YL	X	02-21-96-F-0160
46180	Turtle Mountain	I	16535	4460	20995	79	2872	YL	X	02-21-96-F-0160
46190	Geronimo	C	1040	354	1394	75	36	YL		02-21-96-F-0160
46200	Emery	C	1540	200	1740	89	Set As Allowed	E		02-21-96-F-0160
46210	Alkali	M	3507	228	3735	94	100	YL		02-21-96-F-0160
46220	Fine Wash	C	2580	150	2730	95	Set As Allowed	E		02-21-96-F-0160
46230	Benchmark	C	280	40	320	88	Set As Allowed	E		02-21-96-F-0160
46240	N. Ft Thomas Comm.	C	1685	0	1685	100	Set As Allowed	E		02-21-96-F-0160

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Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
46250	S. Ft. Thomas Comm.	C	525	525	1050	50	Set As Allowed	E		02-21-96-F-0160
46260	Red Knolls	C	1004	353	1357	74	Set As Allowed	E		02-21-96-F-0160
46270	Goodwin Wash	C	120	70	190	63	18	NU		02-21-96-F-0160
46280	White Spring	C	1520	245	1765	86	188	YL	X	02-21-96-F-0160
46290	Cobre Grande	C	600	130	730	82	84	YL	X	02-21-96-F-0160
46300	Black Rock	I	2861	633	3494	82	262	DR	X	02-21-96-F-0160
46310	Spenazuma	I	5677	470	6147	92	756	DR		02-21-96-F-0160
46330	Jackson Mountain	I	4796	617	5413	89	513	DR		02-21-96-F-0160
46340	White House	I	22263	731	22994	97	1571	DR		02-21-96-F-0160
46350	Oso Largo	C	2050	430	2480	83	Set As Allowed	E		02-21-96-F-0160
46360	Bear Spring	C	3740	480	4220	89	Set As Allowed	E		02-21-96-F-0160
46370	Pima	C	1360	480	1840	74	Set As Allowed	E		02-21-96-F-0160
46380	Mesa	C	646	0	646	100	Set As Allowed	E		02-21-96-F-0160
46390	Mud Hollow	C	216	80	296	73	Set As Allowed	E		02-21-96-F-0160
46400	West Spear Ranch	I	8471	8952	17423	49	441	DR		02-21-96-F-0160
46410	East Spear Ranch	C	4084	16469	20553	20	120	YL		02-21-96-F-0160
46440	Billingsly Creek	C	80	0	80	100	Set As Allowed	E		02-21-96-F-0160
46470	Mixed Up	C	120	0	120	100	24	YL		02-21-96-F-0160
46750	Ashurst	I	10335	900	11235	92	220	DR		02-21-96-F-0160
46760	Amphitheatre	C	240	0	240	100	Set As	E		02-21-96-F-0160

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							Allowed			
46770	Canal	C	637	0	637	100	Set As Allowed	E		02-21-96-F-0160
50160	Willis	I	4233	5090	9323	45	789	DR	X	02-21-96-F-0160
50180	Twin Peaks	I	681 NM 1120	460 NM 1920	4181	43	268	DR		02-21-96-F-0160
50240	Harper	M	6550	1120	7670	85	769	YL	X	02-21-96-F-0160
50350	Sheldon Mountain	I	14620	1140	15760	93	1644	YL	X	02-21-96-F-0160
50370	Willow Mountain	C	1070	8060	9130	12	96	DR		02-21-96-F-0160
50410	Rhyolite Peak	I	4770	9380	14150	34	472	DR		02-21-96-F-0160
50430	China Camp	C	680 NM 480	6260 NM 320	7740	15	144	YL		02-21-96-F-0160
50440	Saddleback Mountain	I	1870 NM 5120	18660 NM 3200	28850	24	790	DR		02-21-96-F-0160
50460	Sand Wash	C	110	1840	1950	6	Set As Allowed	E		02-21-96-F-0160
50580	Lazy B	I	38033 NM 13148	33524 NM 3509	88214	58	13488	YL		02-21-96-F-0160
50610	Little Doubtful	I	2169 NM 320	0	2489	100	0	CA		02-21-96-F-0160
50620	Braidfoot	I	870 NM 6080	2764 NM	9714	72	674	DR		02-21-96-F-0160
50660	Wilky	I	14580	29020	43600	50	6099	YL	X	02-21-96-F-0160
50670	High Lonesome	I	9100 NM 4800	7230 NM 2560	23671	59	3456	DR		02-21-96-F-0160
51010	Creosote	M	15210	2920	18130	84	936	YL		02-21-96-F-0160
51020	Munson Cienega	M	3080	2544	5624	55	150	S		02-21-96-F-0160
51030	111 Ranch	M	79774	378	80152	100	4380	DR		02-21-96-F-0160

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Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
51040	Chimney	I	6100	640	6740	91	470	SR		02-21-96-F-0160
51050	Ash Peak	I	12145	640	12785	95	962	DR		02-21-96-F-0160
51060	Artesia	C	6310	0	6310	100	Set As Allowed	E		02-21-96-F-0160
51070	Stockton Pass	M	7649	12343	19992	38	538	S		02-21-96-F-0160
51080	Tanque	M	66769	640	67409	99	2079	DR		02-21-96-F-0160
51090	Van Gausig	I	10060	640	10700	94	612	S		02-21-96-F-0160
51100	Badger Den	I	47147	0	47147	100	0	CA		02-21-96-F-0160
51130	Slickrock	I	26117	0	26117	100	1356	DR		02-21-96-F-0160
51140	Fan	M	8510	0	8510	100	1200	DR		02-21-96-F-0160
51150	Joy Valley	M	61690	2140	63830	97	3458	RR		02-21-96-F-0160
51160	Midway Canyon	I	4910	1420	6330	78	387	DR		02-21-96-F-0160
51180	Murchison	M	49947	5694	55641	90	3120	RR		02-21-96-F-0160
51190	Flying W	I	3840	1640	5480	70	432	YL		02-21-96-F-0160
51230	Saltbush	C	40	300	340	12	12	YL		02-21-96-F-0160
51240	San Simon	C	530	10	540	98	36	YL		02-21-96-F-0160
51250	Roostercomb	I	28199 NM 5120	320 NM 2080	35719	93	2160	YL		02-21-96-F-0160
51260	Camelsback	C	620	760	1380	45	96	YL		02-21-96-F-0160
51270	Cedar Spring	M	1788	90	1878	95	456	YL		02-21-96-F-0160
51280	Simmons Peak	I	3700	0	3700	100	0	CA	X	02-21-96-F-0160
51290	East Canyon	I	1650	100	1750	94	204	YL		02-21-96-F-0160
51300	Cement Canyon	I	4309	1018	5327	81	306	YL	X	02-21-96-F-0160
51310	Rough Mountain	I	12063	5560	17623	68	1116	S	X	02-21-96-F-0160

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51320	Happy Camp	M	2300	0	2300	100	186	S		02-21-96-F-0160
51330	Sheep Canyon	M	4340	3830	8170	53	693	DR		02-21-96-F-0160
51340	Emigrant Canyon	C	240	21041	21281	1	12	DR		02-21-96-F-0160
51350	Shop	C	320	0	320	100	24	S		02-21-96-F-0160
51360	Oil Well	C	2240	3590	5830	38	104	S		02-21-96-F-0160
51380	Vanar	M	16586 NM 1280	500	18366	97	432	YL		02-21-96-F-0160
51400	Ivanhoe	C	1710	3870	5580	31	432	S	X	02-21-96-F-0160
51410	Siphon Canyon	C	692	3610	4302	16	60	YL		02-21-96-F-0160
51420	Nine Mile	C	1560	0	1560	100	36	YL		02-21-96-F-0160
51430	HYL	M	12460	8055	20515	61	1815	DR	X	02-21-96-F-0160
51500	Whitetail	I	7360	2705	10065	73	336	DR		02-21-96-F-0160
51510	Clayton	M	3198	640	3838	83	190	YL		02-21-96-F-0160
51520	Brushy Canyon	I	4200	2610	6810	62	150	S		02-21-96-F-0160
51540	Haystack	C	710	4790	5500	13	36	S		02-21-96-F-0160
51550	Nippers	I	2300	2800	5100	45	144	S		02-21-96-F-0160
51560	Oak Creek	I	2240	580	2820	79	75	S		02-21-96-F-0160
51570	Midway	M	2510	3120	5630	45	83	YL		02-21-96-F-0160
51580	Paradise	C	823	11919	12742	6	168	YL		02-21-96-F-0160
51600	Cave Creek	I	720	7061	7781	9	36	YL		02-21-96-F-0160
51610	Rodeo River	I	640	0	640	100	84	DR		02-21-96-F-0160
51620	Red Mountain	C	290	4274	4564	6	24	S		02-21-96-F-0160
51640	Red Wing Ranch	C	1900	3020	4920	39	432	S		02-21-96-F-0160
51650	Small	C	80	0	80	100	Set As	E		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
							Allowed			
51670	Foote Wash	C	200	360	560	36	Set As Allowed	E		02-21-96-F-0160
51690	Gripe	C	770	30	800	96	Set As Allowed	E		02-21-96-F-0160
51730	Dankworth	C	120	40	160	75	12	YL		02-21-96-F-0160
51760	Royce	C	120	0	120	100	Set As Allowed	E		02-21-96-F-0160
51790	Willow	C	6290	0	6290	100	Set As Allowed	NU		02-21-96-F-0160
51800	Muskhog	I	974	320	1294	75	84	S		02-21-96-F-0160
51810	Hackberry	C	4434	73042	77476	6	420	DR		02-21-96-F-0160
52030	Allaire	C	160	0	0	100	9	S		02-21-96-F-0160
52070	Boss	C	368	8287	8655	4	48	DR		02-21-96-F-0160
52090	Silvercreek	C	777	36774	37551	2	60	DR		02-21-96-F-0160
52100	Adams Peak	C	341	3598	3939	9	24	DR		02-21-96-F-0160
52160	Pat Hills	C	80	470	3627	15	15	HO		02-21-96-F-0160
52180	Bidigin	C	1202	2544	3746	32	108	S		02-21-96-F-0160
52200	Monzingo	C	20	3192	3212	1	3	S		02-21-96-F-0160
52210	Hopkins	C	480	3240	3720	13	48	YL		02-21-96-F-0160
52220	D'amico	C	380	7040	7420	5	22	S		02-21-96-F-0160
52250	Mud Springs	C	1044	11360	12404	8	60	DR		02-21-96-F-0160
52280	Twist	C	937	14720	15657	6	132	DR		02-21-96-F-0160
52300	T Owens	C	264	8960	9224	3	49	DR		02-21-96-F-0160
52340	Flanders	C	160	160	320	50	9	YL		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
52370	Glen	C	103	7439	7542	1	14	DR		02-21-96-F-0160
52380	Buckhorn Ranch	C	480	10240	10720	4	39	DR		02-21-96-F-0160
52430	Husband	C	622	7063	7685	8	75	DR		02-21-96-F-0160
52440	Guadalupe W., Az	I	7085	1148	8233	86	1560	YL	X	02-21-96-F-0160
52490	Swisshelm	C	1023	8150	9173	11	70	S		02-21-96-F-0160
52540	Sycamore	C	1147	NM 6400	7547	15	257	S		02-21-96-F-0160
52620	Moore	C	606	7256	7862	8	31	YL		02-21-96-F-0160
52720	Walden	C	80	6400	6480	1	12	S		02-21-96-F-0160
52730	Roger Riggs	C	435	5754	6189	7	80	DR		02-21-96-F-0160
52750	George Rogers	C	513	6882	7395	7	48	DR		02-21-96-F-0160
52760	Myrl Roll	C	480	480	3080	3560	13	DR		02-21-96-F-0160
52790	Ronald Searle	C	373	8286	8659	4	56	YL		02-21-96-F-0160
52810	Ben Snure	C	560	17135	17695	3	108	DR		02-21-96-F-0160
52850	Moore	C	40	6365	6405	1	7	YL		02-21-96-F-0160
52860	Wiegand	C	1540	310	1850	83	19	YL		02-21-96-F-0160
52910	Jackson	C	453	61	514	88	48	YL		02-21-96-F-0160
52930	T. Owens	C	752	1344	2096	36	24	DR		02-21-96-F-0160
52940	Red Bird Hills	I	1176	4734	5910	20	216	YL		02-21-96-F-0160
54040	Starlight	C	1855	4749	6604	28	300	DR		02-21-96-F-0160
54100	Adams Peak	C	793	380	1173	68	96	DR		02-21-96-F-0160
54120	McGoffin	C	366	1105	1471	25	60	DR		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Safford Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
Safford Field Office Totals in New Mexico			27468	19989	47457					
Safford Field Office Totals			1410764	2488419	3896183		136523			

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06000	Newman Peak	C	6394	18416	24810	26	60	S		02-21-96-F-0160
06001	Twin Buttes	M	2380	7818	10198	23	264	YL		02-21-96-F-0160
06003	Arivaca	C	1564	11005	12569	12	324	DR		02-21-96-F-0160
06004	Durham Wash	C	280	33294	33574	1	36	S		02-21-96-F-0160
06006	Balcom	C	3728	30923	34651	11	432	YL		02-21-96-F-0160
06015	Ash Mountain	M	586	2810	3396	17	72	YL		02-21-96-F-0160
06016	Troy	M	4367	940	5307	82	883	YL		02-21-96-F-422 and 423
06018	Martinez Wash	C	200	8663	8863	2	48	YL		02-21-96-F-0160
06022	Fresnal Canyon	M	600	3405	4005	15	72	YL		02-21-96-F-0160
06023	Cerro Colorado	M	1780	20502	22282	8	336	DR		02-21-96-F-0160
06025	Helvetia	C	1114	1000	2114	53	156	YL		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06031	Thomas Canyon	C	334	1041	1375	24	36	DR		02-21-96-F-0160
06032	Whitlow	M	10255	11215	21470	48	588	DR	X	02-21-96-F-422 and 423
06039	Coyote	M	11227	96820	108047	10	1164	DR		02-21-96-F-0160
06040	La Tortuga	M	7704	23369	31073	25	432	S		02-21-96-F-0160
06042	Indian Camp	C	4678	6079	10757	43	432	YL		2-21-96-F-422 and 423
06059	Battle Axe	M	15155	4423	19578	77	1560	YL	X	02-21-00-F-0029
06062	Olsen Wash	C	40	13120	13160	0	12	YL		02-21-96-F-0160
06067	Rafter Six	M	15962	10999	26961	59	1668	DR	X	02-21-00-F-0029
06075	El Tiro	M	3550	741	4291	83	204	DR		02-21-96-F-0160
06078	Haydon	C	520	13876	14396	4	61	YL		02-21-96-F-0160
06083	Owl Head	M	12388	34291	46679	27	1020	DR		02-21-96-F-0160
06085	San Luis Mountain	C	408	4628	5036	8	84	DR		02-21-96-F-0160
06093	Hay Hook	M	4762	800	5562	86	384	NU		02-21-96-F-0160
06099	Sleeping Beauty Mtn	M	893	5692	6585	14	120	YL	X	2-21-96-F-422 and 423
06100	Anvil	C	2577	50000	52577	5	144	DR		02-21-96-F-0160
06101	Hill Top	I	693	3293	3986	17	84	DR		02-21-96-F-0160
06111	Horsetrack	M	10883	16856	27739	39	1224	DR	X	02-21-00-F-0029
06113	Cochran	M	1688	320	2008	84	168	YL	X	02-21-00-F-0029
06117	Kearny	C	1038	360	1398	74	108	YL	X	02-21-00-F-0029
06119	Black Hills	C	2762	114420	117182	2	408	DR		02-21-96-F-0160
06120	A Diamond	M	6566	14213	20779	32	696	DR	X	02-21-00-F-0029

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06121	Rail X	C	440	25954	26394	2	36	DR		02-21-96-F-0160
06123	Willow Springs	C	480	55880	56360	1	96	DR		02-21-96-F-0160
06124	Antelope	C	320	9920	10240	3	36	YL		02-21-96-F-0160
06125	Hackberry Wash	M	2300	9358	11658	20	216	YL		2-21-96-F-422 and 423
06130	Brawley Wash	C	40	3153	3193	1	2	YL		02-21-96-F-0160
06132	Myers	M	4286	2147	6433	67	564	YL	X	02-21-00-F-0029
06133	Gunnery	I	1185	1700	2885	41	108	YL		02-21-96-F-0160
06137	Three Peaks	C	592	20802	21394	3	84	YL		02-21-96-F-0160
06144	Cross Triangle	M	23796	28160	51956	46	2277	S		02-21-96-F-0160
06151	Guild Wash	M	4364	5018	9382	47	Set as Allowed	E		2-21-96-F-422 and 423
06168	Teacup	M	27230	12381	39611	69	3058	DR	X	02-21-00-F-0029
06175	Elkhorn	C	863	9410	10273	8	132	DR		02-21-96-F-0160
06186	Arroyo Seco	M	3766	9500	13266	28	780	DR		02-21-96-F-0160
06191	Gunsight Mountain	C	693	21877	22570	3	120	DR		02-21-96-F-0160
06197	LEN	M	25552	15187	40739	63	2956	S	X	02-21-00-F-0029
06198	Sierrita	M	2674	14472	17146	16	348	YL		02-21-96-F-0160
06199	Moore Canyon	M	760	1680	2440	31	96	YL		2-21-96-F-422 and 423
06200	Three Points	C	199	3871	4070	5	33	YL		02-21-96-F-0160
06204	Diamond Bell	C	798	23165	23963	3	72	YL		02-21-96-F-0160
06208	Twin Buttes #2	M	549	0	549	100	84	YL		02-21-96-F-0160
06211	Deep Well	C	320	31756	32076	1	24	S		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
06221	Smith Wash	M	5890	12336	18226	32	552	YL		02-21-00-F-0029
06244	Box O	M	14871	37206	52077	29	1428	DR	X	2-21-96-F-422 and 423
06251	Steamboat	M	11086	1920	13006	85	1024	YL		2-21-96-F-422 and 423
44150	Tres Alamos	C	160	14000	14160	1	12	YL		2-21-96-F-422 and 423
45010	Pioneer	M	745	2758	3503	21	132	YL		2-21-96-F-422 and 423
45020	Silver Creek	C	1402	3640	5042	28	132	YL		2-21-96-F-422 and 423
45030	Victory Cross	M	3017	5391	8408	36	411	DR		2-21-96-F-422 and 423
45040	El Capitan	C	680	680	1360	50	60	YL		2-21-96-F-422 and 423
45050	Ponderosa	C	902	880	1782	51	60	YL		02-21-00-F-0029
45060	Gilson Wash	C	490	994	1484	33	36	YL		2-21-96-F-422 and 423
45070	Dripping Springs	M	13855	9531	23386	59	1493	DR		02-21-00-F-0029
45080	Limestone	M	8290	921	9211	90	596	YL		2-21-96-F-422 and 423
45090	Mescal Mountain	M	12166	240	12406	98	1235	DR	X	02-21-00-F-0029
45110	Christmas	M	5690	1085	6775	84	496	YL	X	02-21-00-F-0029
45120	Hi-Y	M	1200	1992	3192	38	111	YL		2-21-96-F-422 and 423
45130	Hildalgo	M	12847	798	13645	94	979	YL	X	02-21-00-F-0029
45140	Piper Spring	M	5300	720	6020	88	Set as allowed	S	X	02-21-00-F-0029
45160	Dudleyville	M	2119	3833	5952	36	108	NU		02-21-96-F-0160
45170	Malpais Hill	C	80	10455	10535	1	0	E		02-21-96-F-0160
45320	Massacre	C	606	4608	5214	12	24	YL		02-21-96-F-0160
45330	Zapata	C	596	6598	7194	8	24	YL		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
45340	Dry Camp	C	598	14408	15006	4	12	YL		02-21-96-F-0160
45350	Tiger	C	439	21975	22414	2	48	DR	X	02-21-96-F-0160
45390	Hotwell	M	3526	4532	8058	93	Set as Allowed	E	X	2-21-96-F-422 and 423 Riparian portion cancelled
45420	Eskiminzin	M	2281	160	2441	93	Set as allowed	S	X	2-21-96-F-422 and 423
45440	Government Spring	C	120	7826	7946	2	24	YL	X	02-21-00-F-0029
46430	Whitewater Draw	C	40	1702	1742	2	12	YL		New allotment
52010	Adams Ranch	I	720	13780	14500	5	84	DR		2-21-96-F-422 and 423
52040	Bach	M	381	127	508	75	72	YL		02-21-96-F-0160
52050	Spring Creek	M	4431	9000	13431	33	516	YL		02-21-96-F-0160
52080	Babocomari	M	1816	9696	11512	16	180	DR	X	02-21-96-F-0160
52110	Mexican Hat	C	1293	21316	22609	6	204	YL		02-21-96-F-0160
52130	Carter	C	1221	584	1805	68	96	YL		02-21-96-F-0160
52170	Christiansen	M	1910	6370	8280	23	216	YL		02-21-96-F-0160
52190	Cleveland	C	282	165	447	63	24	YL		02-21-96-F-0160
52230	Cowan	C	80	1160	1240	6	12	YL		02-21-96-F-0160
52240	H.C. Ranch	C	330	4826	5156	6	24	YL		02-21-96-F-0160
52260	Monzingo	M	1858	*	1858	100	108	DR		02-21-96-F-0160
52270	Sandy Bob	M	4840	7269	12109	40	636	YL		02-21-96-F-0160
52310	Spring Canyon	C	91	5	96	95	12	NU		02-21-96-F-0160
52320	3 Bros	M	2691	5563	8254	33	192	YL		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
52330	47 Ranch	C	3406	21874	25280	10	48	DR		
52350	Harris	M	1159	4397	5556	21	132	YL		02-21-96-F-0160
52390	Grizzle	C	139	3733	3872	4	24	YL		02-21-96-F-0160
52400	Susnow	C	118	5	123	96	24	YL		2-21-96-F-422 and 423
52410	Howard	C	120	640	760	16	12	YL		02-21-96-F-0160
52420	Haberstock Wash	M	1877	9720	11597	16	180	YL		02-21-96-F-0160
52460	Brosnan	C	80	2833	2913	3	12	YL		02-21-96-F-0160
52470	N Jones	C	80	6960	7040	1	12	YL		02-21-96-F-0160
52510	Brunchow Hill	M	1038	885	1923	54	84	DR	X	02-21-96-F-0160
52520	Lucky Hills	M	10252	11549	21801	47	1080	DR		02-21-96-F-0160
52550	Marco	C	400	7772	8172	5	22	YL		02-21-96-F-0160
52580	Wildcat Canyon	M	1345	4251	5596	24	228	YL	X	02-21-96-F-0160
52600	C Miller	C	2445	19780	22225	11	96	YL	X	02-21-96-F-0160
52610	Q Miller	M	556	3029	3585	16	84	DR		02-21-96-F-0160
52650	Gold Gulch	M	2173	2780	4953	44	384	YL		02-21-96-F-0160
52680	Ramirez	C	992	1046	2038	49	36	YL		02-21-96-F-0160
52740	Cox	C	1548	7166	8714	18	99	DR		02-21-96-F-0160
52770	Sands Investment	C	1700	44173	45873	4	60	DR		02-21-96-F-0160
52780	Rainbow's End	C	378	17763	18141	2	36	DR		02-21-96-F-0160
52840	Albert Thomas	M	4173	6948	11121	38	338	YL		02-21-96-F-0160
52870	Wilbourn	C	222	3888	4110	5	12	YL		02-21-96-F-0160
52880	Yuncevich	C	80	2358	2438	3	12	YL		02-21-96-F-0160

TABLE 1: GILA DISTRICT GRAZING ALLOTMENTS

Tucson Field Office

Allotment Number	Allotment Name	Management Category	Current Public Land Acres	Other Acres	Total Acres	Percent Federal Land	Federal AUMs	Current Grazing System	Riparian areas Present	Comments
52950	La Roca	M	2503	2938	5441	46	84	DR		02-21-96-F-0160
52970	Rain Valley Ranch	C	160	6739	6899	2	12	*		02-21-96-F-0160
54160	Sheep Wash	C	360	19363	19723	2	48	YL		02-21-96-F-0160
Tucson Field Office Totals			406527	1326577	1733104		38946			
Gila District Totals			1817291	3814996	5629287		175469			

C- Custodial
M-Maintain
I-Intensive

*-Unknown
NM-New Mexico
YL-Year Long
DR-Deferred Rotation
E-Ephemeral

CA-Cancelled Allotment (No System)
S-Seasonal Use
RR-Rest Rotation
HO-Holistic Management
SR-Santa Rita
NU-Nonuse (No System)

X-Riparian Present

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
06007	Washboard Wash	6806	1764	4970	72		STATIC	
06008	Ramsey Slide	3569		2564	1005		STATIC	
06017	Manila Wash	354	29	290	35		STATIC	
06019	Tucker Flat	548		246	302		STATIC	
06024	Relic Point	120		120			STATIC	
06028	Little Ortega Lake	320			320		STATIC	
06033	St. Johns	953		953			STATIC	
06034	White Mountain Lake	226		226			STATIC	
06036	Solomon Butte	1880		1880			STATIC	
06037	Dry Lake	336		336			STATIC	
06038	Toltec Divide	124	6	64	54		STATIC	
06047	F Bar	210		210			STATIC	
06049	Milky Wash	120		120			STATIC	
06051	Puerco River	8113		6735	1378		STATIC	
06052	The Divide	2558		1776	782		STATIC	
06058	Pink Cliffs	5880		5880			STATIC	
06061	Mesa Parada	546		546			STATIC	
06064	Lost Tank Canyon	5612		5612			STATIC	
06069	Scraper Knoll	320		320			STATIC	
06070	Big Hollow Wash	636		515	121		STATIC	
06071	Wiidcat Creek	1448		1448			STATIC	
06073	Apache Butte	6703	1009	3457	2237		STATIC	
06074	Flying Butte	5123	563	4047	513		STATIC	
06076	Straddling Lake	825		825			STATIC	
06081	Zuni Wash	1120		688	432		STATIC	
06084	Sheepskin Wash	135		135			STATIC	
06087	Potato Wash	3233		1470	1763		STATIC	
06088	Hunt Valley	676		422	254		STATIC	
06091	Leroux Wash	1890	1303	587			STATIC	
06092	Digger Wash	334	33	301			STATIC	
06096	Zion	600		600			STATIC	
06098	Gravel Pit	160			160		STATIC	
06106	Black Mesa	880		880			STATIC	
06108	Twin Wells	1153	232	677	244		STATIC	
06110	Hardscrabble Wash	18124		15936	2188		STATIC	
06114	Chevelon Creek North	1286	64	1016	206		STATIC	
06127	Marcou Mesa	4059		1980	2079		STATIC	
06134	North Cerro Hueco	1280		640	640		STATIC	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
06136	Ortega Sink	1880		999	434	447	STATIC	
06140	Cerro Hueco	3200		1968	1232		STATIC	
06148	Dry Creek	2932	499	1614	819		STATIC	
06149	Pipeline	920	160	760			STATIC	
06155	Carrizo Wash	4986	115	4560	311		STATIC	
06156	Cedar Lake Wash	17093		11175	5918		STATIC	
06157	St. Johns Wash	4709		4709			STATIC	
06158	Little Electric	1894		1894			STATIC	
06159	Little Reservoir	160		160			STATIC	
06160	Carrizo Wash East	640		640			STATIC	
06162	Blanco	2786		2786			STATIC	
06164	Black Ridge	200		200			STATIC	
06170	Zuni Concho	2518		2518			STATIC	
06172	Mesa Wash	440	132	308			STATIC	
06176	Puerco Ridge	1600		415	1185		STATIC	
06177	Woodruff	2797		2797			STATIC	
06178	Bar A	6475		6475			STATIC	
06179	Monument Hill	3291		3291			STATIC	
06180	Mexican Wash	2667		2667			STATIC	
06184	Hidden Lake	4493		3543	950		STATIC	
06189	Seven Springs Ranch	215		215			STATIC	
06190	Zuni Wash Bridge	880	48	832			STATIC	
06195	Surprise Valley	14807	2797	12010			STATIC	
06202	Chevelon Creek South	118		118			STATIC	
06205	Crazy Creek	1916		402	1495	19	STATIC	
06207	Volcanic Ridge	320		320			STATIC	
06214	Phoenix Park Wash	640		640			STATIC	
06225	Holbrook	117	6	58	53		STSTIC	
06228	Flint Knoll	160		160			STATIC	
06230	Wiregrass Lake	1120		1120			STATIC	
06231	Lyman Lake South	280		280			STATIC	
06232	Little Colorado River	480		480			STATIC	
06234	Cow Canyon	640			640		STATIC	
06237	Aztec	2240		1981	259		STATIC	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
06241	Lithodendron Wash	5887	3652	1474	761		STATIC	
06242	Silver Creek	640		640			STATIC	
06250	New Lake	964		964			STATIC	
06252	Mud Springs	1307		1307			STATIC	
06253	Jarvis Wash	4393		4393			STATIC	
06254	Porter Canyon	4060		4060			STATIC	
06255	St. Johns Ranch	960		960			STATIC	
40010	Metcalf	1247		0	1247	0	STATIC	
40020	San Francisco	3925		3000	925	0	STATIC	
40030	Morenci	6224		0	6224	0	STATIC	
40050	Red Hickey Hills	2460		2000	460	0	UPWARD	
40100	Smuggler Peak	13822		4000	9000	822	UPWARD	
40110	Zorilla	14771		8000	6771	0	UPWARD	
40140	Gila	2702		2000	400	302	STATIC	
40210	Twin C	10987		5500	5487	0	UPWARD	
40220	County Line	9030		6000	3030	0	UPWARD	
40230	Buck Canyon	5979		2490	2489	1000	UPWARD	
40310	San Jose Comm.	3360		3360	0	0	UPWARD	
40320	Yuma Wash	14480		0	14480	0	STATIC	
40330	Tollgate	20021		6650	13371	0	STATIC	
40340	Guthrie Peak	5903		5903	0	0	UPWARD	
44010	Muleshoe	21124	240	9842	11042	0	UPWARD	
44020	Soza Mesa	5300	1800	3150	350	0	UPWARD	
44090	C Spear	440	0	440	0	0	STATIC	
45180	Painted Cave	12711		7000	5711	0	UPWARD	
45200	Dry Camp	12759	3759	9000	0	0	UPWARD	
45210	Aravaipa South	1157		0	800	357	STATIC	
45220	Aravaipa	8572		1500	6000	772	STATIC	
45240	Horse Mountain	2328		2328	0	0	UPWARD	
45250	Laurel Canyon	289			289	0	STATIC	
45280	Hell Hole	2074		1074	1000	0	UPWARD	
45290	South Rim	34634	7785	18467	8382	0	UPWARD	
45300	Brandenburg Mountain	520	200	320	0	0	STATIC	
45360	Reliable	610	210	400	0	0	STATIC	
45370	Copper Creek	2295	800	1200	295	0	UPWARD	
46010	Diamond Bar	29462	1714	17713	9701	334	UPWARD	
46020	Tom Springs	16950		15158	1792	0	UPWARD	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
46030	Ft. Thomas	570		570	0	0	STATIC	
46040	Day Mine	55256	900	44098	6402	3856	UPWARD	
46050	N. Eden Comm.	3000		3000	0	0	STATIC	
46060	S. Eden Comm.	5440		5440	0	0	STATIC	
46070	Billingsly Creek	350		350	0	0	STATIC	
46080	Bryce	19151	80	11325	3830	3916	STATIC	
46090	Kimball Comm.	1520		1520	0	0	STATIC	
46100	Talley Wash	2590		2590	0	0	STATIC	
46110	Skinner Comm.	1330		1330	0	0	STATIC	
46120	Rest Haven	1404		1404	0	0	STATIC	
46130	Lone Star	12244	680	11564	0	0	UPWARD	
46150	Johnny Creek	15840	998	14842	0	0	UPWARD	
46160	Bonita Creek	24237	0	22124	2039	74	UPWARD	
46170	Bullgap	9016	2001	6791	0	224	STATIC	
46180	Turtle Mountain	16535		10350	5185	1000	UPWARD	
46190	Geronimo	1040		0	1040	0	STATIC	
46200	Emery	1540		800	740	0	STATIC	
46210	Alkali	3507		3000	507	0	UPWARD	
46220	Fine Wash	2580		1000	1580	0	STATIC	
46230	Benchmark	280		280	0	0	STATIC	
46240	N. Ft. Thomas Comm.	1685		1685	0	0	STATIC	
46250	S. Ft. Thomas Comm.	525		525	0	0	STATIC	
46260	Red Knolls	1004		1004	0	0	STATIC	
46270	Goodwin Wash	120		120	0	0	STATIC	
46280	White Spring	1520		520	1000	0	UPWARD	
46290	Cobre Grande	600		0	600	0	STATIC	
46300	Black Rock	2861		2000	861	0	UPWARD	
46310	Spenazuma	5677		2000	3627	50	UPWARD	
46330	Jackson Moutain	4796		3296	1000	500	UPWARD	
46340	White House	22263		15263	6000	1000	UPWARD	
46350	Oso Largo	2050		1050	500	500	STATIC	
46360	Bear Spring	3740		3740	0	0	STATIC	
46370	Pima	1360		1360	0	0	STATIC	
46380	Mesa	646		646	0	0	STATIC	
46390	Mud Hollow	216		216	0	0	STATIC	
46400	West Spear Ranch	8471		4471	4000	0	UPWARD	
46410	East Spear Ranch	4084		500	3584	0	UPWARD	
46440	Billingsly Creek	80		80	0	0	STATIC	
46470	Mixed Up	120		0	120	0	STATIC	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
46750	Ashurst	10335		7000	2000	1335	UPWARD	
46760	Amphitheatre	240		240	0	0	STATIC	
46770	Canal	637		0	637	0	STATIC	
50160	Willis	4233	0	2497	1000	736	STATIC	
50180	Twin Peaks	1801	155	900	500	246	STATIC	
50240	Harper	6550	0	6070	480	0	STATIC	
50350	Sheldon Mountain	14620	4350	6490	2422	1358	UPWARD	
50370	Willow Mrn.	1070	65	700	305	0	STATIC	
50410	Rhyolite Peak	4770	150	2600	1610	410	UPWARD	
50430	China Camp	1160	0	0	750	410	STATIC	
50440	Saddleback Mtn	6990	0	6672	318	0	UPWARD	
50460	Sand Wash	110	0	0	60	50	UPWARD	
50580	Lazy B	51181	13430	28104	8748	899	UPWARD	
50610	Little Doubtful	2489	0	2059	320	110	UPWARD	
50620	Braidfoot	6950	0	6783	167	0	UPWARD	
50660	Wilky	14500	4460	5892	2813	1335	UPWARD	
50670	High Lonesome	13908	3160	7600	2423	725	UPWARD	
51010	Creosote	15210	0	5859	0	9351	STATIC	
51020	Munson Cienega	3080	0	2000	1080	0	STATIC	
51030	111 Ranch	79774	5584	18300	37494	18396	STATIC	
51040	Chimney	6100	1369	4600	131	0	UPWARD	
51050	Ash Peak	12145	200	8000	2500	1445	STATIC	
51060	Artesia	6310	0	0	6010	300	STATIC	
51070	Stockton Pass	7649	0	800	3200	3649	STATIC	
51080	Tanque	66769	200	14879	3278	48412	STATIC	
51090	Van Gausig	10060	1200	2000	3860	3000	UPWARD	
51100	Badger Den	47147	880	19182	6510	20575	UPWARD	
51130	Slickrock	26117	0	20633	0	5484	UPWARD	
51140	Fan	8510	600	2000	3000	2910	UPWARD	
51150	Joy Valley	61690	5000	54690	1000	1000	UPWARD	
51160	Midway Canyon	4910	1500	2100	1000	310	UPWARD	
51180	Murchison	49947	0	21947	20000	8000	UPWARD	
51190	Flying W	3840	940	1600	500	800	UPWARD	
51230	Saltbush	40	0	0	0	40	STATIC	
51240	San Simon	530	0	0	250	280	STATIC	
51250	Roostercomb	33319	319	20000	8000	5000	STATIC	
51260	Camels Back	620	0	620	0	0	STATIC	
51270	Cedar Spring	1788	1088	500	0	200	UPWARD	
51280	Simmons Peak	3700	200	3000	500	0	UPWARD	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
51290	East Canyon	1650	0	1250	400	0	UPWARD	
51300	Cement Canyon	4309	909	2000	1000	400	UPWARD	
51310	Rough Mountain	12063	2663	5800	3000	600	UPWARD	
51320	Happy Camp	2300	300	1000	720	0	UPWARD	
51330	Sheep Canyon	4340	786	1986	290	1278	UPWARD	
51340	Emigrant Canyon	240	0	240	0	0	STATIC	
51350	Shop	320	0	0	0	320	STATIC	
51360	Oil Well	2240	0	0	0	2240	STATIC	
51380	Vanar	17866	0	15000	2000	866	STATIC	
51400	Ivanhoe	1710	450	1000	260	0	STATIC	
51410	Siphon Canyon	692	200	400	92	0	UPWARD	
51420	Nine Mile	1560	160	550	0	850	STATIC	
51430	HYL	12460	665	10176	1447	172	UPWARD	
51500	Whitetail	7360	360	3000	2000	2000	UPWARD	
51510	Clayton	3198	0	0	945	2253	STATIC	
51520	Brushy Canyon	4200	1200	1200	1000	800	UPWARD	
51540	Haystack	710	0	510	200	0	STATIC	
51550	Nippers (Blue Mountain)	2300	100	1100	500	600	STATIC	
51560	Oak Creek	2240	220	462	630	928	STATIC	
51570	Midway	2510	0	0	1825	685	STATIC	
51580	Paradise	823	0	764	59	0	STATIC	
51600	Cave Creek	720	0	0	720	0	STATIC	
51610	Rodeo River	640	0	45	595	0	UPWARD	
51620	Red Mountain	290	0	246	11	33	UPWARD	
51640	Red Wing Ranch	1900	300	1000	600	0	UPWARD	
51650	Small	80	0	0	0	80	STATIC	
51670	Foote Wash	200	0	160	0	40	STATIC	
51690	Gripe	770	0	570	100	100	STATIC	
51730	Dankworth	120	0	0	80	40	STATIC	
51760	Royce	120	0	0	80	40	STATIC	
51790	Willow	6290	400	3000	2890	0	STATIC	
51800	Mushkog	974	0	500	474	0	UPWARD	
51810	Hackberry	4434	0	4434	0	0	UPWARD	
52030	Allaire	160	0	100	60	0	STATIC	
52070	Boss	400	0	0	300	100	STATIC	
52090	Silvercreek	777	0	100	677	0	STATIC	
52100	Adams Peak	341	0	180	161	0	STATIC	
52160	Pat Hills	80	0	80	0	0	UPWARD	
52180	Bidigin	1202	0	100	1000	102	STATIC	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Safford Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
52200	Monzingo	20	0	0	20	0	STATIC	
52210	Hopkins	480	40	100	340	0	STATIC	
52220	D'amico	380	80	300	0	0	STATIC	
52250	Mud Springs	1044	0	44	400	600	STATIC	
52280	Twist	937	0	637	300	0	STATIC	
52300	T Owens	264	0	200	64	0	STATIC	
52340	Flanders	160	0	0	160	0	STATIC	
52370	Glen	103	0	103	0	0	STATIC	
52380	Buckhorn Ranch	480	0	300	180	0	STATIC	
52430	Husband	622	0	422	100	100	STATIC	
52440	Guadalupe W., Az	7085	500	4000	2500	85	UPWARD	
52490	Swisshelm	1023	200	823	0	0	STATIC	
52540	Sycamore	1147	0	647	300	200	UPWARD	
52620	Moore	606	0	0	606	0	STATIC	
52720	Walden	80	0	80	0	0	STATIC	
52730	Roger Riggs	424	0	300	124	0	STATIC	
52750	George Rogers	516	0	300	100	116	STATIC	
52760	Myrl Roll	480	0	200	200	80	STATIC	
52790	Ronald Searle	373	0	0	300	73	STATIC	
52810	Ben Snure	560	0	400	160	0	STATIC	
52850	Moore	40	0	0	0	40	STATIC	
52860	Weigand	1540	0	0	540	1000	STATIC	
52910	Jackson	453	0	200	253	0	STATIC	
52930	T. Owens	752	0	400	234	118	STATIC	
52940	Red Bird Hills	1190	0	700	300	190	UPWARD	
54040	Starlight	1855	100	1000	600	155	STATIC	
54100	Adams Peak	793	0	693	100	0	UPWARD	
54120	McGoffin	366	0	200	166	0	STATIC	
Safford Field Office Totals		**1417725**	**87052**	**825433**	**335437**	**169223**		

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Tucson Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
06000	Newman Peak	6394	3000	0	3394	0	STATIC	
06001	Twin Buttes	2380	95	357	1393	595	STATIC	
06003	Arivaca	1564	0	1486	78	0	STATIC	
06004	Durham Wash (Newman Pk)	280	0	0	280	0	STATIC	
06006	Balcom	3728	0	34	3535	159	STATIC	
06015	Ash Mountain	586	0	0	586	0	STATIC	
06016	Troy	4367		1744	2611	12	STATIC	
06018	Martinez Wash	200	0	0	200	0	STATIC	
06022	Fresnal Canyon	600	0	352	248	0	STATIC	
06023	Cerro Colorado	1780	0	848	79	853	STATIC	
06025	Helvetia	1114	150	864	0	100	STATIC	
06031	Thomas Canyon	334	302	0	32	0	STATIC	
06032	Whitlow	10255	500	2591	5229	1935	STATIC	
06039	Coyote	11227	0	594	8190	2443	STATIC	
06040	La Tortuga	7704	0	1754	5950	0	STATIC	
06042	Indian Camp	4678			4678		STATIC	
06059	Battle Axe	15155		3925	9230	2000	STATIC	
06060	Morning Star	16430	438	4272	10241	1479	STATIC	
06062	Olsen Wash	40	0	0	40	0	STATIC	
06067	Rafter Six	15962	272	5446	9622	622	STATIC	
06075	El Tiro	3550	39	1641	1436	434	STATIC	
06078	Haydon	520	0	0	0	520	STATIC	
06083	Owl Head	12388	0	656	11732	0	STATIC	
06085	San Luis Mountain	408	0	112	237	59	STATIC	
06093	Hay Hook	4762	1879	2121	762	0	UPWARD	
06099	Sleeping Beauty Mtn	893			893		STATIC	
06100	Anvil	2577	0	2377	200	0	STATIC	
06101	Hill Top	693	0	0	200	493	STATIC	
06111	Horsetrack	10883	298	3660	6383	542	STATIC	
06113	Cochran	1688			1688		STATIC	
06117	Kearny	1038			1038		STATIC	
06119	Black Hills	2762	505	1116	1018	123	STATIC	
06120	A Diamond	6566	263	3940	1969	394	UPWARD	
06121	Rail X	440	39	0	401	0	STATIC	
06123	Willow Springs	480	0	0	200	280	STATIC	
06124	Antelope	320	0	0	200	120	STATIC	
06125	Box 0 (Hackberry Wash)	2300	150	1200	937	13	STATIC	
06130	Brawley Wash	40	0	0	40	0	STATIC	
06132	Myers	4286	294	1384	2568	40	STATIC	
06133	Gunnery	1185	0	0	0	1185	DOWNWA	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Tucson Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
							RD	
06137	Three Peaks	592	592	0	0	0	UPWARD	
06144	Cross Triangle	23796	0	0	23796	0	STATIC	
06151	Guild Wash	4364	0	0	4364	0	STATIC	
06168	Teacup	27230	54	6015	13222	7939	STATIC	
06175	Elkhorn	863	152	278	433	0	STATIC	
06186	Arroyo Seco	3766		3151	185	430	STATIC	
06191	Gunsight Mountain	693	0	38	655	0	STATIC	
06197	Len	25552	1457	67	23559	469	STATIC	
06198	Sierrita	2674	0	2598	76	0	STATIC	
06199	Moore Canyon (Wick)	760			760		STATIC	
06200	Three Points	199	0	0	32	167	DOWNWARD	
06204	Diamond Bell	798	0	0	798	0	STATIC	
06208	Twin Buttes #2	549	0	549	0	0	STATIC	
06211	Deep Well	320	0	0	320	0	STATIC	
06221	Smith Wash	5890		840	4300	750	STATIC	
06244	Tecolote (Helmwheel)	14871		1648	12960	263	STATIC	
06251	Steamboat	11086		442	3624	6970	STATIC	
44150	Dusty A7 (Tres Alamos)	160				160	UPWARD	
45010	Pioneer	745			745		STATIC	
45020	Silver Creek	1402			1402		STATIC	
45030	Victory Cross	3017	300	1450	1180	87	MAINTAIN	
45040	El Capitan	680			680		STATIC	
45050	Ponderosa	902			902		STATIC	
45060	Gilson Wash	490			490		STATIC	
45070	Dripping Spring	13855			13855		MAINTAIN	
45080	Limestone	8290			8290		STATIC	
45090	Mescal Mountain	12166			12116		STATIC	
45110	Christmas	5690			5690		STATIC	
45120	Hi-Y	1200			1200		STATIC	
45130	Hildalgo	12847			12847		STATIC	
45140	Piper Spring	5300			4000	1300	STATIC	
45160	Dudleyville	2119	0	0	1119	1000	STATIC	
45170	Malpais Hill	80	0	0	80	0	STATIC	
45320	Massacre	606	0	0	300	306	STATIC	
45330	Zapata	596	0	0	296	300	STATIC	
45340	Dry Camp	598	0	0	298	300	STATIC	
45350	Tiger	439	0	0	200	239	STATIC	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Tucson Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
45390	Hotwell	3526	0	1978	1548	0	STATIC	Riparian 160 acres canceled from grazing
45420	Eskiminzin	2281			2281		STATIC	
45440	Government Springs	120			120		STATIC	
46430	Whitewater Draw (Bemis)	40			40		STATIC	
52010	Adams Ranch (TFO)	720			720		STATIC	
52040	Bach	381	0	100	200	81	STATIC	
52050	Spring Creek (Powers)	4431	100	500	3405	426	STATIC	
52080	Babocamari	1816	0	0	816	1000	STATIC	
52110	Mexican Hat (Busenbark)	1293	243	400	400	250	UPWARD	
52130	Carter	1221	0	400	700	121	STATIC	
52170	Christiansen (Krentz)	1910	0	200	1410	300	STATIC	
52190	Cleveland	282	0	0	182	100	STATIC	
52230	Cowan	80	20	60	0	0	STATIC	
52240	H.C. Ranch	330	0	0	160	170	STATIC	
52260	Monzingo	1858	0	0	1260	598	STATIC	
52270	Sandy Bob (Powers)	4840	250	3760	540	290	STATIC	
52310	Spring Cyn (Dugie)	91	0	31	60	0	STATIC	
52320	3 Brothers (Escapule)	2691	0	0	730	1961	STATIC	
52330	47 Ranch	2446	0	0	780	1666	STATIC	
52350	Harris	1159	0	0	1000	159	DOWNWARD	
52390	Grizzle	139	0	0	0	139	STATIC	
52400	Susnow	118	0	40	78	0	STATIC	
52410	Howard	120	20	90	10	0	UPWARD	
52420	Haberstock Wash (Hopp)	1877	0	0	1300	577	STATIC	
52460	Brosnan	80	20	60	0	0	STATIC	
52470	N Jones	80	0	80	0	0	STATIC	
52510	Brunchow Hill	1038	0	0	608	430	UPWARD	
52520	Lucky Hills	10252	0	100	4560	5592	UPWARD	
52550	Marco	400	0	0	135	265	UPWARD	
52580	Wildcat Canyon	1345	0	400	300	645	STATIC	
52600	C Miller	2445	0	410	1710	325	STATIC	
52610	Q Miller	556	0	0	200	356	STATIC	
52650	Gold Gulch (Wes Polley)	2173	0	400	800	973	STATIC	
52680	Ramirez	992	0	0	312	680	UPWARD	
52740	Cox	1548	0	0	920	628	STATIC	
52770	Sands Investment	1700	100	400	900	300	STATIC	

TABLE 2: GILA DISTRICT GRAZING ALLOTMENTS CONDITION AND TREND

Tucson Field Office

Allotment Number	Allotment Name	Current Public Land Acres	Acres Potential Natural Community (Excellent)	Acres Late Seral (Good)	Acres Mid Seral (Fair)	Acres Early Seral (Poor)	Apparent Trend	Comments
52780	Rainbow's End	378	0	228	150	0	UPWARD	
52840	Albert Thomas	4173	0	0	1033	3140	DOWNWARD	
52870	Wilbourn	222	0	0	0	222	STATIC	
52880	Yuncevich	80	0	0	80	0	UPWARD	
52950	La Roca (J.E. Warren Jr.)	2503	0	0	1000	1503	UPWARD	
52970	Rain Valley Ranch	160	0	160	0	0	UPWARD	
54160	Sheep Wash	306	0	186	120	0	STATIC	
Tucson Field Office Totals		**421943**	**11532**	**69533**	**282860**	**57978**		
Gila District Totals		**1839668**	**98584**	**881699**	**618297**	**227201**		

Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 1: Upland sites: Upland site exhibit, infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform.

Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
Safford Field Office								
06007	Washboard Wash	6806					6806	
06008	Ramsey Slide	3569		3569				
06017	Manila Wash	354	354					
06019	Tucker Flat	548	548					
06024	Relic Point	120	120					
06028	Little Ortega Lake	320	320					
06033	St. Johns	953	953					
06034	White Mountain Lake	240	240					
06036	Solomon Butte	1880	1880					
06037	Dry Lake	336	336					
06038	Toltec Divide	120	120					
06047	F Bar	210	210					
06049	Milky Wash	120	120					
06051	Puerco River	8113	8113					
06052	The Divide	2558		2558				
06058	Pink Cliffs	5880	5880					
06061	Mesa Parada	546	546					
06064	Lost Tank Canyon	5612	5612					
06069	Scraper Knoll	320	320					

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Standard 1: Upland sites: Upland site exhibit, infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform.

Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06070	Big Hollow Wash	636	636					
06071	Wildcat Creek	1448	1448					
06073	Apache Butte	6703	6703					
06074	Flying Butte	5123	5123					
06076	Straddling Lake	825	825					
06081	Zuni Wash	1120		1120				
06084	Sheepskin Wash	135	135					
06087	Potato Wash	3233	3233					
06088	Hunt Valley	676	676					
06091	Leroux Wash	1890	1890					
06092	Digger Wash	334	334					
06096	Zion	600	600					
06098	Gravel Pit	160	160					
06106	Black Mesa	880		880				
06108	Twin Wells	1159		1159				
06110	Hardscrabble Wash	18124	18124					
06114	Chevelon Creek North	1286	1286					
06127	Marcou Mesa	4059	4059					
06134	North Cerro Hueco	1280	1280					
06136	Ortega Sink	1880	1880					

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Standard 1: Upland sites: Upland site exhibit, infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform.

Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06140	Cerro Hueco	3200	3200					
06148	Dry Creek	2932	2932					
06149	Pipeline	920	920					
06155	Carrizo Wash	4986	4986					
06156	Cedar Lake Wash	17093	17093					
06157	St. Johns Wash	4709	4709					
06158	Little Electric	1894	1894					
06159	Little Reservoir	160	160					
06160	Carrizo Wash East	640	640					
06162	Blanco	2786	2786					
06164	Black Ridge	200	200					
06170	Zuni Concho	1521	1521					
06172	Mesa Wash	440	440					
06176	Puerco Ridge	1600				1600		
06177	Woodruff	2815	2815					
06178	Bar A	6475	6475					
06179	Monument Hill	3291	3291					
06180	Mexican Wash	2667	2667					
06184	Hidden Lake	4493	4493					
06189	Seven Springs Ranch	215	215					

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Standard 1: Upland sites: Upland site exhibit, infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform.

Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06190	Zuni Wash Bridge	880	880					
06195	Surprise Valley	14807	14807					
06202	Chevelon Creek South	118	118					
06205	Crazy Creek	1916	1916					
06207	Volcanic Ridge	320	320					
06214	Phoenix Park Wash	640	640					
06225	Holbrook	117	117					
06228	Flint Knoll	160	160					
06230	Wiregrass Lake	1120	1120					
06231	Lyman Lake South	280	280					
06232	Little Colorado River	480	480					
06234	Cow Canyon	640	640					
06237	Aztec	2240	2240					
06241	Lithodendron Wash	5887	5887					
06242	Silver Creek	640	640					
06250	New Lake	964	964					
06252	Mud Springs	1307	1307					
06253	Jarvis Wash	4393	4393					
06254	Porter Canyon	4160	4160					
06255	St. Johns Ranch	960	960					

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Standard 1: Upland sites: Upland site exhibit, infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform.

Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
40010	Metcalf	1247					1247	
40020	San Francisco	3925	3925					
40030	Morenci	6224					6224	
40050	Red Hickey Hills	2460					2460	
40100	Smuggler Peak	13822					13822	
40110	Zorilla	14771					14771	
40140	Gila	2702					2702	
40210	Twin C	10987					10987	
40220	County Line	9030					9030	
40230	Buck Canyon	5979					5979	
40310	San Jose Comm.	3360	3360				0	
40320	Yuma Wash	14480	14480					
40330	Tollgate	20021					20021	
40340	Guthrie Peak	5903					5903	
44010	Muleshoe	21124	21124					
44020	Soza Mesa	5300	5300					
44090	C-Spear Ranch	440	440					
45180	Painted Cave	12711					12711	
45200	Dry Camp	12759	12759					
45210	Aravaipa South	1157					1157	

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Standard 1: Upland sites: Upland site exhibit, infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform.

Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
45220	Aravaipa	8572					8572	
45240	Horse Mountain	2328					2328	
45250	Laurel Canyon	289	289					
45280	Hell Hole	2074	2074					
45290	South Rim	34634					34634	
45300	Brandenburg Mountain	520	520					
45360	Reliable	610					610	
45370	Copper Creek	2295	2295					
46010	Diamond Bar	29462					29462	
46020	Tom Springs	16950					16950	
46030	Ft. Thomas	570	570					
46040	Day Mine	55256					55256	
46050	N. Eden Comm.	3000	3000					
46060	S. Eden Comm.	5440	5440					
46070	Billingsly Creek	350	350					
46080	Bryce	19151					19151	
46090	Kimball Comm.	1520	1520					
46100	Talley Wash	2590					2590	
46110	Skinner Comm.	1330	1330					
46120	Rest Haven	1404	1404					

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Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
46130	Lone Star	12244					12244	
46150	Johnny Creek	15840					15840	
46160	Bonita Creek	24237					24237	
46170	Bullgap	9016					9016	
46180	Turtle M0untain	16535					16535	
46190	Geronimo	1040	1040					
46200	Emery	1540	1540					
46210	Alkali	3507	3507					
46220	Fine Wash	2580	2580					
46230	Benchmark	280	280					
46240	N. Ft Thomas Comm.	1685	1685					
46250	S. Ft. Thomas Comm.	525	525					
46260	Red Knolls	1004	1004					
46270	Goodwin Wash	120	120					
46280	White Spring	1520					1520	
46290	Cobre Grande	600	600					
46300	Black Rock	2861					2861	
46310	Spenazuma	5677					5677	
46330	Jackson Mountain	4796	4796					
46340	White House	22263					22263	

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46350	Oso Largo	2050	2050					
46360	Bear Spring	3740	3740					
46370	Pima	1360	1360					
46380	Mesa	646	646					
46390	Mud Hollow	216	216					
46400	West Spear Ranch	8471	8471					
46410	East Spear Ranch	4084	4084					
46440	Billingsly Creek	80	80					
46470	Mixed Up	120					120	
46750	Ashurst	10335					10335	
46760	Amphitheatre	240	240					
46770	Canal	637					637	
50160	Willis	4233					4233	
50180	Twin Peaks	1801					1801	
50240	Harper	6550					6550	
50350	Sheldon Mountain	14620					14620	
50370	Willow Mountain	1070	1070					
50410	Rhyolite Peak	4770					4770	
50430	China Camp	1160					1160	
50440	Saddleback Mountain	6990	6990					

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Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
50460	Sand Wash	110	110					
50580	Lazy B	51181	51181					
50610	Little Doubtful	2489					2489	
50620	Braidfoot	6950	6950					
50660	Wilky	14580					14580	
50670	High Lonesome	13908	11922	1986				
51010	Creosote	15210					15210	
51020	Munson Cienega	3080					3080	
51030	111 Ranch	79774	76512	3262			0	
51040	Chimney	6100	6100					
51050	Ash Peak	12145					12145	
51060	Artesia	6310	6310					
51070	Stockton Pass	7649					7649	
51080	Tanque	66769	65034	1735			0	
51090	Van Gausig	10060					10060	
51100	Badger Den	47147					47147	
51130	Slickrock	26117	26117					
51140	Fan	8510	8510					
51150	Joy Valley	61690	61690					
51160	Midway Canyon	4910					4910	

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51180	Murchison	49947	49947					
51190	Flying W	3840					3840	
51230	Saltbush	40	40					
51240	San Simon	530	530					
51250	Roostercomb	33319	33319					
51260	Camelsback	620	620					
51270	Cedar Spring	1788					1788	
51280	Simmons Peak	3700					3700	
51290	East Canyon	1650					1650	
51300	Cement Canyon	4309					4309	
51310	Rough Mountain	12063	12063					
51320	Happy Camp	2300	2300					
51330	Sheep Canyon	4340	4340					
51340	Emigrant Canyon	240	240					
51350	Shop	320	320					
51360	Oil Well	2240	2240					
51380	Vanar	17866					17866	
51400	Ivanhoe	1710					1710	
51410	Siphon Canyon	692	692					
51420	Nine Mile	1560	1560					

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51430	HYL	12460	12460					
51500	Whitetail	7360	7360					
51510	Clayton	3198	3198					
51520	Brushy Canyon	4200	4200					
51540	Haystack	710	710					
51550	Nippers (Blue Mountain)	2300					2300	
51560	Oak Creek	2240					2240	
51570	Midway	2510					2510	
51580	Paradise	823					823	
51600	Cave Creek	720	720					
51610	Rodeo River	640					640	
51620	Red Mountain	290	290					
51640	Red Wing Ranch	1900	1900					
51650	Small	80	80					
51670	Foote Wash	200	200					
51690	Gripe	770	770					
51730	Dankworth	120	120					
51760	Royce	120	120					
51790	Willow	6290	6290					
51800	Muskhog	974					974	

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51810	Hackberry	4434	4434					
52030	Allaire	160	160					
52070	Boss	368	368					
52090	Silvercreek	777	777					
52100	Adams Peak	341	341					
52160	Pat Hills	80	80					
52180	Bidigin	1202	1202					
52200	Monzingo	20	20					
52210	Hopkins	480	480					
52220	D'amico	380	380					
52250	Mud Springs	1044	1044					
52280	Twist	937	937					
52300	T Owens	264	264					
52340	Flanders	160	160					
52370	Glen	103	103					
52380	Buckhorn Ranch	480	480					
52430	Husband	622	622					
52440	Guadalupe W., AZ	7085					7085	
52490	Swisshelm	1023	1023					
52540	Sycamore	1147	1147					

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Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
52620	Moore	606	606					
52720	Walden	80	80					
52730	Roger Riggs	435	435					
52750	George Rogers	513	513					
52760	Myrl Roll	480	480					
52790	Ronald Searle	373	373					
52810	Ben Snure	560	560					
52850	Moore	40	40					
52860	Wiegand	1540	1540					
52910	Jackson	453	453					
52930	T. Owens	752	752					
52940	Red Bird Hills	1176	1176					
54040	Starlight	1855	1855					
54100	Adams Peak	793	793					
54120	McGoffin	366	366					
Safford Field Office Totals		**1419809**	**795443**	**16269**	**0**	**1600**	**606497**	

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Tucson Field Office								
06000	Newman Peak	6394	6394					
06001	Twin Buttes	2380					2380	
06003	Arivaca	1564					1564	
06004	(Durham Wash) Newman Peak	280	280					
06006	Balcom	3728	3728					
06015	Ash Mountain	586	586					
06016	Troy	4367					4367	Consult # 02-21-00-F-0029
06018	Martinez Wash	200					200	
06022	Fresnal Canyon	600	600					
06023	Cerro Colorado	1780					1780	
06025	Helvetia	1114					1114	
06031	Thomas Canyon	334	334					
06032	Whitlow	10255					10255	Consult # 02-21-00-F-0029
06039	Coyote	11227					11227	
06040	La Tortuga	7704	7704					
06042	Indian Camp	4678					4678	Consult # 02-21-00-F-0029
06059	Battle Axe	15155					15155	Consult # 02-21-00-F-0029
06062	Olsen Wash	40	40					
06067	Rafter Six	15962					15962	Consult # 02-21-00-F-0029

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06075	El Tiro	3550	3550					
06078	Haydon	520	520					
06083	Owl Head	12388					12388	
06085	San Luis Mountain	408					408	
06093	Hay Hook	4762					4762	
06099	Sleeping Beauty Mtn	893					893	Consult # 02-21-00-F-0029
06100	Anvil	2577	2577					
06101	Hill Top	693					693	
06111	Horsetrack	10883					10883	Consult # 02-21-00-F-0029
06113	Cochran	1688					1688	Consult # 02-21-00-F-0029
06117	Kearny	1038	1038					Consult # 02-21-00-F-0029
06119	Black Hills	2762					2762	
06120	A Diamond	6566					6566	Consult # 02-21-00-F-0029
06121	Rail X	440	440					
06123	Willow Springs	480					480	
06125	Box 0 (Hackberry Wash)	2300					2300	Consult # 02-21-00-F-0029
06129	Vera Earl (University)	1440	1440					Consult # 02-21-02-F-162 LCNCA
06130	Brawley Wash	40					40	
06132	Myers	4286					4286	Consult # 02-21-00-F-0029
06133	Gunnery	1185					1185	
06137	Three Peaks	592	592					

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Allotment Number	Allotment Name	Public Acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06144	Cross Triangle	23796					23796	
06151	Guild Wash	4364	4364					
06168	Teacup	27230					27230	
06175	Elkhorn	863	863					
06186	Arroyo Seco	3766					3766	
06191	Gunsight Mountain	693	693					
06197	Len	25552					25552	Consult # 02-21-00-F-0029
06198	Sierrita	2674	2674					
06199	Moore Canyon (Wick)	760					760	
06200	Three Points	199	199					
06204	Diamond Bell	798	798					
06208	Twin Buttes #2	549					549	
06210	Empirita	1520					1520	Consult # 02-21-02-F-162 LCNCA
06211	Deep Well	320					320	
06221	Smith Wash	5890					5890	Consult # 02-21-00-F-0029
06244	Tecolote (Helmwheel)	14871					14871	Consult # 02-21-00-F-0029
06251	Steamboat	11086					11086	Consult # 02-21-00-F-0029
44150	Dusty A7 (Tres Alamos)	160					160	
45010	Pioneer	745					745	Consult # 02-21-00-F-0029
45020	Silver Creek	1402					1402	Consult # 02-21-00-F-0029
45030	Victory Cross	3017					3017	Consult # 02-21-00-F-0029

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45040	El Capitan	680					680	Consult # 02-21-00-F-0029
45050	Ponderosa	902	902					Consult # 02-21-00-F-0029
45060	Gilson Wash	490					490	Consult # 02-21-00-F-0029
45070	Dripping Spring	13855	13855					Consult # 02-21-00-F-0029
45080	Limestone	8290					8290	Consult # 02-21-00-F-0029
45090	Mescal Mountain	12166					12166	Consult # 02-21-00-F-0029
45110	Christmas	5690					5690	Consult # 02-21-00-F-0029
45120	Hi-Y	1200					1200	Consult # 02-21-00-F-0029
45130	Hildalgo	12847					12847	Consult # 02-21-00-F-0029
45140	Piper Spring	5300					5300	Consult # 02-21-00-F-0029
45160	Dudleyville	2119					2119	
45170	Malpais Hill	80	80					
45320	Massacre	606					606	
45330	Zapata	596	596					
45340	Dry Camp	598	598					
45350	Tiger	439					439	
45390	Hotwell	3526					3526	Riparian 160 acres canceled from grazing
45420	Eskiminzin	2281					2281	Consult # 02-21-00-F-0029
45440	Government Springs	120	120					Consult # 02-21-00-F-0029
46430	Whitewater Draw	40	40					
52010	Adams Ranch (TFO)	720					720	

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52040	Bach	381	381					
52050	Spring Creek (Powers)	4431	4431					
52080	Babocamari	1816	1816					
52110	Mexican Hat (Busenbark)	1293	1293					
52130	Cater	1221					1221	
52170	Christiansen (Krentz)	1910					1910	
52190	Cleveland	282	282					
52230	Cowan	80					80	
52240	H.C. Ranch	330					330	
52260	Monzingo	1858	1858					
52270	Sandy Bob (Powers)	4840	4840					
52310	Spring Cyn (Dugie)	91	91					
52320	3 Brothers (Escapule)	2691					2691	
52330	47 Ranch	3406	3406					
52350	Harris	1159	1159					
52390	Grizzle	139	139					
52400	Susnow	118					118	
52410	Howard	120	120					
52420	Haberstock Wash (Hopp)	1877	1877					
52460	Brosnan	80	80					
52470	N Jones	80	80					

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52510	Brunchow Hill	1038					1038	
52520	Lucky Hills	10252	10252					
52550	Marco	400	400					
52580	Wildcat Canyon	1345	1345					
52600	C Miller	2445	2445					
52610	Q Miller	556					556	
52650	Gold Gulch (Wes Polley)	2173					2173	
52680	Ramirez	992	992					
52740	Cox	1548	1548					
52770	Sands Investment	1700	1700					
52780	Rainbow's End	378	378					
52840	Albert Thomas	4173	4173					
52870	Wilbourn	222	222					
52880	Yuncevich	80	80					
52950	La Roca (J. E. Warren)	2503					2503	
52970	Rain Valley Ranch	160	160					
54160	Sheep Wash	360					306	
Tucson Field Office Totals		**409167**	**101153**				**307960**	

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Safford Field Office								
06007	Washboard Wash	6806	N/A				0	
06008	Ramsey Slide	3569		51			0	
06009	Alamo Wash	595					312	
06017	Manila Wash	354	N/A				0	
06019	Tucker Flat	548					192	
06024	Relic Point	120	N/A				0	
06028	Little Ortega Lake	320					128	
06033	St. Johns	953					77	
06034	White Mountain Lake	226					13	
06036	Solomon Butte	1880	N/A				0	
06037	Dry Lake	336	N/A				0	
06038	Toltec Divide	124	N/A				0	
06047	F Bar	210	N/A				0	
06049	Milky Wash	120	N/A				0	
06051	Puerco River	8113	315	225			0	
06052	The Divide	2558	N/A				0	
06058	Pink Cliffs	5880	16				0	
06061	Mesa Parada	546					67	

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06064	Lost Tank Canyon	5612		225			0	
06069	Scraper Knoll	320	N/A				0	
06070	Big Hollow Wash	636					128	
06071	Wildcat Creek	1448					52	
06073	Apache Butte	6703	N/A				0	
06074	Flying Butte	5123	154				0	
06076	Straddling Lake	825					1052	
06081	Zuni Wash	1120	N/A					
06084	Sheepskin Wash	135		32			0	
06087	Potato Wash	3233	N/A				0	
06088	Hunt Valley	676	N/A				0	
06091	Leroux Wash	1890					269	
06092	Digger Wash	334	N/A				0	
06096	Zion	600	N/A				0	
06098	Gravel Pit	160	N/A				0	
06106	Black Mesa	880	N/A				0	
06108	Twin Wells	1159	N/A				0	
06110	Hardscrabble Wash	18124	N/A				0	
06114	Chevelon Creek North	1286	N/A				0	
06127	Marcou Mesa	4059	N/A				0	

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06134	North Cerro Hueco	1280					100	
06136	Ortega Sink	1880					320	
06140	Cerro Hueco	3200					174	
06148	Dry Creek	2932					72	
06149	Pipeline	920	N/A				0	
06155	Carrizo Wash	4986	N/A				0	
06156	Cedar Lake Wash	17093	N/A				0	
06157	St. Johns Wash	4709	N/A				0	
06158	Little Electric	1894	N/A				0	
06159	Little Reservoir	160	N/A				0	
06160	Carrizo Wash East	640	N/A				0	
06162	Blanco	2786	N/A				0	
06164	Black Ridge	200	N/A				0	
06170	Zuni Concho	2518	N/A				52	
06172	Mesa Wash	440	8				0	
06176	Puerco Ridge	1600					77	
06177	Woodruff	2797						
06178	Bar A	6475	N/A				0	
06179	Monument Hill	3291	N/A				0	
06180	Mexican Wash	2667	N/A				0	

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06184	Hidden Lake	4493	N/A				0	
06189	Seven Springs Ranch	215	N/A				0	
06190	Zuni Wash Bridge	880	N/A				0	
06195	Surprise Valley	14807	N/A				0	
06202	Chevelon Creek South	118	N/A				0	
06205	Crazy Creek	1916	N/A				0	
06207	Volcanic Ridge	320	N/A				0	
06214	Phoenix Park Wash	640	N/A				0	
06225	Holbrook	117	N/A				0	
06228	Flint Knoll	160	N/A				0	
06230	Wiregrass Lake	1120	N/A				0	
06231	Lyman Lake South	280					39	
06232	Little Colorado River	480	N/A				0	
06234	Cow Canyon	640					20	
06237	Aztec	2240					39	
06241	Lithodendron Wash	5887	N/A				0	
06242	Silver Creek	640	N/A				0	
06250	New Lake	964	N/A				0	
06252	Mud Springs	1307	N/A				0	
06253	Jarvis Wash	4393	N/A				0	

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06254	Porter Canyon	4160	N/A				0	
06255	St. Johns Ranch	960	N/A				0	
40010	Metcalf	1247	N/A				0	
40020	San Francisco	3925					13	
40030	Morenci	6224	N/A				0	
40050	Red Hickey Hills	2460	N/A				0	
40100	Smuggler Peak	13822	N/A				0	
40140	Gila	2702	N/A				0	
40210	Twin C	10987	N/A				0	
40220	County Line	9030	N/A				0	
40230	Buck Canyon	5979	N/A				0	
40310	San Jose Comm.	3360	N/A				0	
40320	Yuma Wash	14480	N/A				0	
40330	Tollgate	20021	N/A				0	
40340	Guthrie Peak	5903	N/A				0	
44010	Muleshoe	21124	N/A				0	
44020	Soza Mesa	5300	N/A				0	
44090	C-Spear Ranch	440	N/A				0	
45180	Painted Cave	12711	N/A				0	
45200	Dry Camp	12759	N/A				0	

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45210	Aravaipa South	1157	N/A				0	
45220	Aravaipa	8572	N/A				0	
45240	Horse Mountain	2328	N/A				0	
45250	Laurel Canyon	289	N/A				0	
45280	Hell Hole	2074	N/A				0	
45290	South Rim	34634					38	
45300	Brandenburg Mountain	520	N/A				0	
45360	Reliable	610					103	
45370	Copper Creek	2295	45				0	
46010	Diamond Bar	29462	N/A				0	
46020	Tom Springs	16950	N/A				0	
46030	Ft. Thomas	570	N/A				0	
46040	Day Mine	55256	N/A				0	
46050	N. Eden Comm.	3000	N/A				0	
46060	S. Eden Comm.	5440	N/A				0	
46070	Billingsly Creek	350					52	
46080	Bryce	19151	N/A				0	
46090	Kimball Comm.	1520						
46100	Talley Wash	2590	39	7			0	
46110	Skinner Comm.	1330	N/A				0	

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Table 3: Gila District Grazing Allotment Standards and Guidelines

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
46120	Rest Haven	1404	N/A				0	
46130	Lone Star	12244	N/A				0	
46150	Johnny Creek	15840	N/A				0	
46160	Bonita Creek	24237	N/A				0	
46170	Bullgap	9016	N/A				0	
46180	Turtle Mountain	16535	N/A				0	
46190	Geronimo	1040	N/A				0	
46200	Emery	1540	N/A				0	
46210	Alkali	3507	N/A				0	
46220	Fine Wash	2580	N/A				0	
46230	Benchmark	280	N/A				0	
46240	N. Ft Thomas Comm.	1685	N/A				0	
46250	S. Ft. Thomas Comm.	525	N/A				0	
46260	Red Knolls	1004	N/A				0	
46270	Goodwin Wash	120	N/A				0	
46280	White Spring	1520	N/A				0	
46290	Cobre Grande	600	N/A				0	
46300	Black Rock	2861	N/A				0	
46310	Spenazuma	5677	N/A				0	
46330	Jackson Mountain	4796	N/A				0	

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46340	White House	22263	N/A				0	
46350	Oso Largo	2050	N/A				0	
46360	Bear Spring	3740	N/A				0	
46370	Pima	1360	N/A				0	
46380	Mesa	646	N/A				0	
46390	Mud Hollow	216	N/A				0	
46400	West Spear Ranch	8471	N/A				0	
46410	East Spear Ranch	4084	N/A				0	
46440	Billingsly Creek	80						
46470	Mixed Up	120	N/A				0	
46750	Ashurst	10335	N/A				0	
46760	Amphitheatre	240	N/A				0	
46770	Canal	637	N/A				0	
50160	Willis	4233	N/A				0	
50180	Twin Peaks	1801	N/A				0	
50240	Harper	6550					256	
50350	Sheldon Mountain	14620	N/A				0	
50370	Willow Mountain	1070	N/A				0	
50410	Rhyolite Peak	4770	N/A				0	
50430	China Camp	1160	N/A				0	

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
50440	Saddleback Mountain	6990	N/A				0	
50460	Sand Wash	110	N/A				0	
50580	Lazy B	51181	N/A				0	
50610	Little Doubtful	2489	N/A				0	
50620	Braidfoot	6950	N/A				0	
50660	Wilky	14580	N/A				0	
50670	High Lonesome	13908	N/A				0	
51010	Creosote	15210	N/A				0	
51020	Munson Cienega	3080	N/A				0	
51030	111 Ranch	79774	N/A				0	
51040	Chimney	6100	N/A				0	
51050	Ash Peak	12145	N/A				0	
51060	Artesia	6310	N/A				0	
51070	Stockton Pass	7649	N/A				0	
51080	Tanque	66769	N/A				0	
51090	Van Gausig	10060	N/A				0	
51100	Badger Den	47147	N/A				0	
51130	Slickrock	26117	N/A				0	
51140	Fan	8510	16				0	
51150	Joy Valley	61690	N/A					

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
51160	Midway Canyon	4910	N/A				0	
51180	Murchison	49947	N/A				0	
51190	Flying W	3840	N/A				0	
51230	Saltbush	40	N/A				0	
51240	San Simon	530	N/A				0	
51250	Roostercomb	33319	N/A				0	
51260	Camelsback	620	N/A				0	
51270	Cedar Spring	1788	N/A				0	
51280	Simmons Peak	3700	N/A				0	
51290	East Canyon	1650	N/A				0	
51300	Cement Canyon	4309	N/A				0	
51310	Rough Mountain	12063	N/A				0	
51320	Happy Camp	2300	N/A				0	
51330	Sheep Canyon	4340	N/A				0	
51340	Emigrant Canyon	240	N/A				0	
51350	Shop	320	N/A				0	
51360	Oil Well	2240	N/A				0	
51380	Vanar	17866	N/A				0	
51400	Ivanhoe	1710	N/A				0	
51410	Siphon Canyon	692	N/A				0	

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51420	Nine Mile	1560	N/A				0	
51430	HYL	12460	N/A				0	
51500	Whitetail	7360	26				0	
51510	Clayton	3198	N/A				0	
51520	Brushy Canyon	4200	N/A				0	
51540	Haystack	710	N/A				0	
51550	Nippers (Blue Mountain)	2300	N/A				0	
51560	Oak Creek	2240	N/A				0	
51570	Midway	2510	N/A				0	
51580	Paradise	823	N/A				0	
51600	Cave Creek	720	N/A					
51610	Rodeo River	640	N/A				0	
51620	Red Mountain	290	13				0	
51640	Red Wing Ranch	1900	N/A				0	
51650	Small	80	N/A				0	
51670	Foote Wash	200	N/A				0	
51690	Gripe	770	N/A				0	
51730	Dankworth	120	N/A				0	
51760	Royce	120	N/A				0	
51790	Willow	6290	N/A				0	

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51800	Muskhog	974	N/A				0	
51810	Hackberry	4434	N/A				0	
52030	Allaire	160	N/A				0	
52070	Boss	368	N/A				0	
52090	Silvercreek	777	N/A				0	
52100	Adams Peak	341	N/A				0	
52160	Pat Hills	80	N/A				0	
52180	Bidigin	1202	N/A				0	
52200	Monzingo	20	N/A				0	
52210	Hopkins	480	N/A				0	
52220	D'amico	380	N/A				0	
52250	Mud Springs	1044	N/A				0	
52280	Twist	937	N/A				0	
52300	T Owens	264	10				0	
52340	Flanders	160	N/A				0	
52370	Glen	103	N/A				0	
52380	Buckhorn Ranch	480	N/A				0	
52430	Husband	622	N/A				0	
52440	Guadalupe W., AZ	7085	N/A				0	
52490	Swisshelm	1023	N/A				0	

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52540	Sycamore	1147	N/A				0	
52620	Moore	606	N/A					
52720	Walden	80	N/A			10	0	
52730	Roger Riggs	435	N/A				0	
52750	George Rogers	513	N/A				0	
52760	Myrl Roll	480	N/A				0	
52790	Ronald Searle	373	N/A				0	
52810	Ben Snure	560	N/A				0	
52850	Moore	40	N/A				0	
52860	Wiegand	1540	N/A				0	
52910	Jackson	453	N/A				0	
52930	T. Owens	752	N/A				0	
52940	Red Bird Hills	1176	N/A				0	
54040	Starlight	1855	N/A				0	
54100	Adams Peak	793	N/A				0	
54120	McGoffin	366	N/A				0	
Safford Field Office Totals		**1406602**	**642**	**540**	**0**	**10**	**3645**	

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Tucson field Office								
06000	Newman Peak	6394	NA					
06001	Twin Buttes	2380	NA					
06003	Arivaca	1564	NA					
06004	(Durham Wash)Newman Pk	280	NA					
06006	Balcom	3728	NA					
06015	Ash Mountain	586	NA					
06016	Troy	4367	NA					Consult # 02-21-00-F-0029
06018	Martinez Wash	200	NA					
06022	Fresnal Canyon	600	NA					
06023	Cerro Colorado	1780	NA					
06025	Helvetia	1114						
06031	Thomas Canyon	334	NA					
06032	Whitlow	10255	4					Consult # 02-21-00-F-0029
06039	Coyote	11227	NA					
06040	La Tortuga	7704	NA					
06042	Indian Camp	4678	NA					Consult # 02-21-00-F-0029
06059	Battle Axe	15155						Consult # 02-21-00-F-0029
06062	Olsen Wash	40	NA					

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06067	Rafter Six	15962						Consult # 02-21-00-F-0029
06075	El Tiro	3550	NA					
06078	Haydon	520	NA					
06083	Owl Head	12388	NA					
06085	San Luis Mountain	408	NA					
06093	Hay Hook	4762	NA					
06099	Sleeping Beauty Mtn	893	NA					Consult # 02-21-00-F-0029
06100	Anvil	2577	NA					
06101	Hill Top	693	NA					
06111	Horsetrack	10883	0				4.8	Consult # 02-21-00-F-0029
06113	Cochran	1688						
06117	Kearny	1038						Consult # 02-21-00-F-0029
06119	Black Hills	2762	NA					
06120	A Diamond	6566						Consult # 02-21-00-F-0029
06121	Rail X	440	NA					
06123	Willow Springs	480	NA					
06124	Antelope	320	NA					
06125	Box 0 (Hackberry Wash)	2300	NA					Consult # 02-21-00-F-0029
06130	Brawley Wash	40	NA					

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06132	Myers	4286	0				33	Consult # 02-21-00-F-0029
06133	Gunnery	1185	NA					
06137	Three Peaks	592	NA					
06144	Cross Triangle	23796	NA					
06151	Guild Wash	4364	NA					
06168	Teacup	27230	4					
06175	Elkhorn	863	NA					
06186	Arroyo Seco	3766	NA					
06191	Gunsight Mountain	693	NA					
06197	Len	25552	0	0			40	Consult # 02-21-00-F-0029
06198	Sierrita	2674	NA					
06199	Moore Canyon (Wick)	760	NA					
06200	Three Points	199	NA					
06204	Diamond Bell	798	NA					
06208	Twin Buttes #2	549	NA					
06211	Deep Well	320	NA					
06221	Smith Wash	5890						Consult # 02-21-00-F-0029
06244	Tecolote (Helmwheel)	14871						Consult # 02-21-00-F-0029
06251	Steamboat	11086						Consult # 02-21-00-F-0029

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44150	Dusty A7 (Tres Alamos)	160	NA					
45010	Pioneer	745	NA					Consult # 02-21-00-F-0029
45020	Silver Creek	1402	NA					Consult # 02-21-00-F-0029
45030	Victory Cross	3017	NA					Consult # 02-21-00-F-0029
45040	El Capitan	680	NA					Consult # 02-21-00-F-0029
45050	Ponderosa	902	NA					Consult # 02-21-00-F-0029
45060	Gilson Wash	490	NA					Consult # 02-21-00-F-0029
45070	Dripping Spring	13855	NA					Consult # 02-21-00-F-0029
45080	Limestone	8290	NA					Consult # 02-21-00-F-0029
45090	Mescal Mountain	12166	0				80	Consult # 02-21-00-F-0029
45110	Christmas	5690	80					Consult # 02-21-00-F-0029
45120	Hi-Y	1200	N/A					
45130	Hildalgo	12847	0				136	Consult # 02-21-00-F-0029
45140	Piper Spring	5300	0				10	Consult # 02-21-00-F-0029
45160	Dudleyville	2119	NA					
45170	Malpais Hill	80	NA					
45320	Massacre	606	NA					
45330	Zapata	596	NA					
45340	Dry Camp	598	NA					

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Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 2: Riparian- Wetland sites: Maintain or improve riparian/wetland areas to facilitate proper functioning condition. These are riparian acres, not all public acres within the allotment. N/A = NO RIPARIAN PRESENT ON ALLOTMENT

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
45350	Tiger	439					0.5	
45390	Hotwell	3526		160				Riparian 160 acres canceled from grazing
45420	Eskiminzin	2281	NA					Consult # 02-21-00-F-0029
45440	Government Springs	120	NA					Consult # 02-21-00-F-0029
46430	Whitewater Draw	40	NA					
52010	Adams Ranch	720	NA					
52040	Bach	381	NA					
52050	Spring Creek (Powers)	4431	NA					
52080	Babocamari	1816	24					
52110	Mexican Hat (Gusenbark)	1293	NA					
52130	Carter	1221	NA					
52170	Christiansen (Krentz)	1910	NA					
52190	Cleveland	282	NA					
52230	Cowan	80	NA					
52240	H.C. Ranch	330	NA					
52260	Monzingo	1858	NA					
52270	Sandy Bob (Powers)	4840	NA					
52310	Spring Cyn (Dugie)	91	NA					
52320	3 Brothers (Escapule)	2691	NA					

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
52330	47 Ranch	3406	NA					
52350	Harris	1159	NA					
52390	Grizzle	139	NA					
52400	Susnow	118	NA					
52410	Howard	120	NA					
52420	Haberstock Wash (Hopp)	1877	NA					
52460	Brosnan	80	NA					
52470	N Jones	80	NA					
52510	Brunchow Hill	1038	3					
52520	Lucky Hills	10252	NA					
52550	Marco	400	NA					
52580	Wildcat Canyon	1345	0				.9	
52600	C Miller	2445	0				1.1	
52610	Q Miller	556	NA					
52650	Gold Gulch (Wes Polley)	2173	NA					
52680	Ramirez	992	NA					
52740	Cox	1548	NA					
52770	Sands Investment	1700	NA					
52780	Rainbow's End	378	NA					

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Standard 2: Riparian- Wetland sites: Maintain or improve riparian/wetland areas to facilitate proper functioning condition. These are riparian acres, not all public acres within the allotment. N/A = NO RIPARIAN PRESENT ON ALLOTMENT

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
52840	Albert Thomas	4173	NA					
52870	Wilbourn	222	NA					
52880	Yuncevich	80	NA					
52950	La Roca (J.E. Warren Jr.)	2503	NA					
52970	Rain Valley Ranch	160	NA					
54160	Sheep Wash (TFO)	360	NA					
Tucson Field Office Totals		**406527**	**115**	**160**			**306**	

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Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
Safford Field Office								
06007	Washboard Wash	6806					6806	
06008	Ramsey Slide	3569	3569					
06017	Manila Wash	354					354	
06019	Tucker Flat	548					548	
06024	Relic Point	120					120	
06028	Little Ortega Lake	320					320	
06033	St. Johns	953					953	
06034	White Mountain Lake	226					226	
06036	Solomon Butte	1880					1880	
06037	Dry Lake	336	336					
06038	Toltec Divide	124	124					
06047	F Bar	210					210	
06049	Milky Wash	120					120	
06051	Puerco River	8113	8113					
06052	The Divide	2558	2558					
06058	Pink Cliffs	5880	5880					
06061	Mesa Parada	546					546	

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Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06064	Lost Tank Canyon	5612	5612					
06069	Scraper Knoll	320					320	
06070	Big Hollow Wash	636					636	
06071	Wildcat Creek	1448					1448	
06073	Apache Butte	6703	6703					
06074	Flying Butte	5123	5123					
06076	Straddling Lake	825					825	
06081	Zuni Wash	1120					1120	
06084	Sheepskin Wash	135	135					
06087	Potato Wash	3233					3233	
06088	Hunt Valley	676	676					
06091	Leroux Wash	1890					1890	
06092	Digger Wash	334	334					
06096	Zion	600	600					
06098	Gravel Pit	160	160					
06106	Black Mesa	880					880	
06108	Twin Wells	1153					1153	
06110	Hardscrabble Wash	18124	18124					

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06114	Chevelon Creek North	1286	1286					
06127	Marcou Mesa	4059					4059	
06134	North Cerro Hueco	1280					1280	
06136	Ortega Sink	1880					1880	
06140	Cerro Hueco	3200					3200	
06148	Dry Creek	2932					2932	
06149	Pipeline	920	920					
06155	Carrizo Wash	4986	4986					
06156	Cedar Lake Wash	17093	17093					
06157	St. Johns Wash	4709	4709					
06158	Little Electric	1894	1894					
06159	Little Reservoir	160	160					
06160	Carrizo Wash East	640	640					
06162	Blanco	2786	2786					
06164	Black Ridge	200	200					
06170	Zuni Concho	2518					2518	
06172	Mesa Wash	440	440					
06176	Puerco Ridge	1600	1600					

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06177	Woodruff	2797					2797	
06178	Bar A	6475	6475					
06179	Monument Hill	3291					3291	
06180	Mexican Wash	2667	2667					
06184	Hidden Lake	4493	4493					
06189	Seven Springs Ranch	215	215					
06190	Zuni Wash Bridge	880	880					
06195	Surprise Valley	14807	14807					
06202	Chevelon Creek South	118	118					
06205	Crazy Creek	1916	1916					
06207	Volcanic Ridge	320	320					
06214	Phoenix Park Wash	640	640					
06225	Holbrook	117					117	
06228	Flint Knoll	160	160					
06230	Wiregrass Lake	1120					1120	
06231	Lyman Lake South	280					280	
06232	Little Colorado River	480					480	
06234	Cow Canyon	640					640	

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06237	Aztec	2240					2240	
06241	Lithodendron Wash	5887	5887					
06242	Silver Creek	640					640	
06250	New Lake	964					964	
06252	Mud Springs	1307	1307					
06253	Jarvis Wash	4393	4393					
06254	Porter Canyon	4160	1740	2420				
06255	St. Johns Ranch	960					960	
40010	Metcalf	1247					1247	
40020	San Francisco	3925					3925	
40030	Morenci	6224					6224	
40050	Red Hickey Hills	2460	2460					
40100	Smuggler Peak	13822					13822	
40110	Zorilla	14771					14771	
40140	Gila	2702					2702	
40210	Twin C	10987					10987	
40220	County Line	9030					9030	
40230	Buck Canyon	5979					5979	

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40310	San Jose Comm.	3360					3360	
40320	Yuma Wash	14480	14480					
40330	Tollgate	20021					20021	
40340	Guthrie Peak	5903					5903	
44010	Muleshoe	21124	21124					
44020	Soza Mesa	5300	5300					
44090	C-Spear Ranch	440	440					
45180	Painted Cave	12711					12711	
45200	Dry Camp	12759					12759	
45210	Aravaipa South	1157					1157	
45220	Aravaipa	8572					8572	
45240	Horse Mountain	2328					2328	
45250	Laurel Canyon	289	289					
45280	Hell Hole	2074					2074	
45290	South Rim	34634					34634	
45300	Brandenburg Mountain	520					520	
45360	Reliable	610					610	
45370	Copper Creek	2295					2295	

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46010	Diamond Bar	29462					29462	
46020	Tom Springs	16950					16950	
46030	Ft. Thomas	570	570					
46040	Day Mine	55256					55256	
46050	N. Eden Comm.	3000	3000					
46060	S. Eden Comm.	5440	5440					
46070	Billingsly Creek	350					350	
46080	Bryce	19151					19151	
46090	Kimball Comm.	1520	1520					
46100	Talley Wash	2590					2590	
46110	Skinner Comm.	1330	1330					
46120	Rest Haven	1404	1404					
46130	Lone Star	12244					12244	
46150	Johnny Creek	15840					15840	
46160	Bonita Creek	24237					24237	
46170	Bullgap	9016					9016	
46180	Turtle M0untain	16535					16535	
46190	Geronimo	1040					1040	

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46200	Emery	1540	1540					
46210	Alkali	3507	3507					
46220	Fine Wash	2580	2580					
46230	Benchmark	280	280					
46240	N. Ft Thomas Comm.	1685	1685					
46250	S. Ft. Thomas Comm.	525	525					
46260	Red Knolls	1004	1004					
46270	Goodwin Wash	120	120					
46280	White Spring	1520					1520	
46290	Cobre Grande	600	600					
46300	Black Rock	2861					2861	
46310	Spenazuma	5677	5677					
46330	Jackson Mountain	4796	4796					
46340	White House	22263					22263	
46350	Oso Largo	2050	2050					
46360	Bear Spring	3740	3740					
46370	Pima	1360	1360					
46390	Mud Hollow	216	216					

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46400	West Spear Ranch	8471	4871					
46410	East Spear Ranch	4084	4084					
46440	Billingsly Creek	80	80					
46470	Mixed Up	120	120					
46750	Ashurst	10335					10335	
46760	Amphitheatre	240	240					
46770	Canal	637					637	
50160	Willis	4233					4233	
50180	Twin Peaks	1801					1801	
50240	Harper	6550					6550	
50350	Sheldon Mountain	14620					14620	
50370	Willow Mountain	1070	1070					
50410	Rhyolite Peak	4770					4770	
50430	China Camp	1160					1160	
50440	Saddleback Mountain	6990	6990					
50460	Sand Wash	110	110					
50580	Lazy B	51181	51181					
50610	Little Doubtful	2489					2489	

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
50620	Braidfoot	6950	6950					
50660	Wilky	14580					14580	
50670	High Lonesome	13908	13908					
51010	Creosote	15210					15210	
51020	Munson Cienega	3080					3080	
51030	111 Ranch	79774	79774					
51040	Chimney	6100	6100					
51050	Ash Peak	12145					12145	
51060	Artesia	6310	6310					
51070	Stockton Pass	7649					7649	
51080	Tanque	66769					66769	
51090	Van Gausig	10060					10060	
51100	Badger Den	47147					47147	
51130	Slickrock	26117	26117					
51140	Fan	8510	8510					
51150	Joy Valley	61690	61690					
51160	Midway Canyon	4910	4910					
51180	Murchison	49947	49947					

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Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
51190	Flying W	3840					3840	
51230	Saltbush	40	40					
51240	San Simon	530	530					
51250	Roostercomb	33319	33319					
51260	Camelsback	620	620					
51270	Cedar Spring	1788					1788	
51280	Simmons Peak	3700					3700	
51290	East Canyon	1650					1650	
51300	Cement Canyon	4309					4309	
51310	Rough Mountain	12063	12063					
51320	Happy Camp	2300	2300					
51330	Sheep Canyon	4340	4340					
51340	Emigrant Canyon	240	240					
51350	Shop	320	320					
51360	Oil Well	2240	2240					
51380	Vanar	17866					17866	
51400	Ivanhoe	1710					1710	
51410	Siphon Canyon	692	692					

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Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
51420	Nine Mile	1560	1560					
51430	HYL	12460	12460					
51500	Whitetail	7360	7360					
51510	Clayton	3198	3198					
51540	Brushy Canyon	4200	4200					
51540	Haystack	710	710					
51550	Nippers (Blue Mountain)	2300					2300	
51560	Oak Creek	2240					2240	
51570	Midway	2510					2510	
51580	Paradise	823					823	
51600	Cave Creek	720	720					
51610	Rodeo River	640	640					
51620	Red Mountain	290	290					
51640	Red Wing Ranch	1900	1900					
51650	Small	80	80					
51670	Foote Wash	200	200					
51690	Gripe	770	770					
51730	Dankworth	120	120					

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Table 3: Gila District Grazing Allotment Standards and Guidelines

Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
51760	Royce	120	120					
51790	Willow	6290	6290					
51800	Muskhog	974					974	
51810	Hackberry	4434	4434					
52030	Allaire	160	160					
52070	Boss	368	368					
52090	Silvercreek	777	777					
52100	Adams Peak	341	341					
52160	Pat Hills	80	80					
52180	Bidigin	1202	1202					
52200	Monzingo	20	20					
52210	Hopkins	480				480		
52220	D'amico	380	380					
52250	Mud Springs	1044	1044					
52280	Twist	937	937					
52300	T Owens	264	264					
52340	Flanders	160					160	
52370	Glen	103	103					

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
52380	Buckhorn Ranch	480	480					
52430	Husband	622	622					
52440	Guadalupe W., AZ	7085					7085	
52490	Swisshelm	1023	1023					
52540	Sycamore	1147	1147					
52620	Moore	606	606					
52720	Walden	80	80					
52730	Roger Riggs	435	435					
52750	George Rogers	513	513					
52760	Myrl Roll	480	480					
52790	Ronald Searle	373	373					
52810	Ben Snure	560	560					
52850	Moore	40	40					
52860	Wiegand	1540	1540					
52910	Jackson	453	453					
52930	T. Owens	752	752					
52940	Red Bird Hills	1176	1176					
54040	Starlight	1855	1855					

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
54100	Adams Peak	793	793					
54120	McGoffin	366	366					
Safford Field Office Totals		**1420126**	**669352**	**2420**	**0**	**480**	**732122**	

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
Tucson Field Office								
06000	Newman Peak	6394					6394	
06001	Twin Buttes	2380					2380	
06003	Arivaca	1564					1564	
06004	Durham Wash (Newman Peak)	280	280					
06006	Balcom	3728	3728					
06015	Ash Mountain	586	586					
06016	Troy	4367					4367	Consult # 02-21-00-F-0029
06018	Martinez Wash	200					200	
06022	Fresnal Canyon	600	600					
06023	Cerro Colorado	1780					1780	
06025	Helvetia	1114					1114	
06031	Thomas Canyon	334	334					
06032	Whitlow	10255					10255	Consult # 02-21-00-F-0029
06039	Coyote	11227					11227	
06040	La Tortuga	7704	7704					
06059	Battle Axe	15155					15155	Consult # 02-21-00-F-0029
06062	Olsen Wash	40					40	

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06067	Rafter Six	15962					15962	Consult # 02-21-00-F-0029
06075	El Tiro	3550	3550					
06078	Haydon	520	520					
06083	Owl Head	12388					12388	
06085	San Luis Mountain	408					408	
06093	Hay Hook	4762					4762	
06099	Sleeping Beauty Mtn	893					893	Consult # 02-21-00-F-0029
06100	Anvil	2577	2577					
06101	Hill Top	693					693	
06111	Horsetrack	10883					10883	Consult # 02-21-00-F-0029
06113	Cochran	1688					1688	Consult # 02-21-00-F-0029
06117	Kearny	1038	1038					Consult # 02-21-00-F-0029
06119	Black Hills	2762					2762	
06120	A Diamond	6566					6566	Consult # 02-21-00-F-0029
06121	Rail X	440	440					
06123	Willow Springs	480					480	
06124	Antelope	320	320					
06125	Box 0 (Hackberry Wash)	2300					2300	Consult # 02-21-00-F-0029

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06130	Brawley Wash	40					40	
06132	Myers	4286					4286	Consult # 02-21-00-F-0029
06133	Gunnery	1185					1185	
06137	Three Peaks	592	592					
06144	Cross Triangle	23796					23796	
06151	Guild Wash	4364	4364					
06168	Teacup	27230					27230	
06175	Elkhorn	863	863					
06186	Arroyo Seco	3766					3766	
06191	Gunsight Mountain	693	693					
06197	Len	25552					25552	Consult # 02-21-00-F-0029
06198	Sierrita	2674	2674					
06199	(Moore Canyon) Wick	760					760	
06200	Three Points	199	199					
06204	Diamond Bell	798	798					
06208	Twin Buttes #2	549					549	
06211	Deep Well	320					320	
06221	Smith Wash	5890					5890	

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
06244	Tecolote (Helmwheel)	14871					14871	Consult # 02-21-00-F-0029
06251	Steamboat	11086					11086	Consult # 02-21-00-F-0029
44150	Dusty A7 (Tres Alamos)	160					160	
45010	Pioneer	745					745	Consult # 02-21-00-F-0029
45020	Silver Creek	1402					1402	Consult # 02-21-00-F-0029
45030	Victory Cross	3017					3017	Consult # 02-21-00-F-0029
45040	El Capitan	680					680	Consult # 02-21-00-F-0029
45050	Ponderosa	902	902					Consult # 02-21-00-F-0029
45060	Gilson Wash	490					490	Consult # 02-21-00-F-0029
45070	Dripping Spring	13855	13855					Consult # 02-21-00-F-0029
45080	Limestone	8290					8290	Consult # 02-21-00-F-0029
45090	Mescal Mountain	12166					12166	Consult # 02-21-00-F-0029
45110	Christmas	5690					5690	Consult # 02-21-00-F-0029
45120	Hi-Y	1200					1200	Consult # 02-21-00-F-0029
45130	Hidalgo	12847					12847	Consult # 02-21-00-F-0029
45140	Piper Spring	5300					5300	
45160	Dudleyville	2119					2119	
45170	Malpais Hill	80	80					

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
45320	Massacre	606					606	
45330	Zapata	596	596					
45340	Dry Camp	598	598					
45350	Tiger	439					439	
45390	Hotwell	3526					3526	Riparian 160 acres canceled from grazing
45420	Eskiminzin	2281					2281	Consult # 02-21-00-F-0029
45440	Government Springs	120	120					Consult # 02-21-00-F-0029
46430	Whitewater Draw	40	40					
52010	Adams Ranch (TFO)	720					720	
52040	Bach	381	381					
52050	Spring Creek (Powers)	4431	4431					
52080	Babocamari	1816	1816					
52110	Mexican Hat (Gusenbark)	1293	1293					
52130	Carter	1221	1221					
52170	Christiansen (Krentz)	1910					1910	
52190	Cleveland	282	282					
52230	Cowan	80					80	
52240	H.C. Ranch	330					330	

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Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
52260	Monzingo	1858	1858					
52270	Sandy Bob (Powers)	4840	4840					
52310	Spring Canyon (Dugie)	91	91					
52320	3 Brothers (Escapule)	2691					2691	
52330	47 Ranch	3406					3406	
52350	Harris	1159	1159					
52390	Grizzle	139	139					
52400	Susnow	118					118	
52410	Howard	120	120					
52420	Haberstock Wash (Hopp)	1877	1877					
52460	Brosnan	80	80					
52470	N Jones	80	80					
52510	Brunchow Hill	1038					1038	
52520	Lucky Hills	10252	10252					
52550	Marco	400	400					
52580	Wildcat Canyon	1345	1345					
52600	C Miller	2445	2445					
52610	Q Miller	556					556	

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Standard 3: Desired Resource Condition: Maintain or improve productive or diverse upland and riparian-wetland plant communities of native species

Allotment Number	Allotment Name	Public acres	MS or MSP	NMS or NMSP Action Taken	NMS or NMSP No Action Taken	NMS or NMSP Other Causes	NYE	Comments
52650	Gold Gulch (Wes Polley)	2173					2173	
52680	Ramirez	992	992					
52740	Cox	1548	1548					
52770	Sands Investment	1700	1700					
52780	Rainbow's End	378	378					
52840	Albert Thomas	4173	4173					
52870	Wilbourn	222	222					
52880	Yuncevich	80	80					
52950	La Roca (J.E. Warren Jr.)	2503	2503					
52970	Rain Valley Ranch	160	160					
54160	Sheep Wash	360					360	
Tucson Field Office Totals		**401849**	**93917**				**307932**	

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Table 4. Gila District Exclosures

Safford Field Office

Name	Associated Allotment	Allotment Number	Associated Listed Species	Comments
Gila Box	Johnny Creek	46150	Gila Chub Gila Topminnow Desert Pupfish Loach Minnow Spikedace Razorback Sucker Razorback Sucker (CH)	Large complex exclosure intended to exclude livestock from the riparian areas of the Gila Box Riparian National Conservation Area (RNCA). The exclosure includes topography, allotment boundary fences, pasture fences, and gap fencing. It also includes water gaps constructed across the upper end of Bonita Creek (reservation boundary), the lower end of Eagle creek, the upper RNCA boundaries of San Francisco River and the Gila River.
	Bonita Creek	46160		
	Bull Gap	46170		
	Twin C	40210		
	County Line	40220		
	Turtle Mountain	46180		
	Morenci	40030		
	Tollgate	40330		
	Zorilla	40110		
	Smuggler Peak	40100		
	Gila	40140		
Cold Spring Seep	Day Mine	46040	Gila Topminnow Desert Pupfish	Small exclosure around a spring fed pond.
Posey Well	Fan	51140	Desert Pupfish	Small exclosure around an artesian well fed pond.
Howard Well	Fan	51140	Gila Topminnow Desert Pupfish	Small exclosure around an artesian well fed pond.
Martin Well	Fan	51140	Gila Topminnow Desert Pupfish	Small exclosure around an artesian well fed pond. Artesian well failed, no aquatic habitat
Big Spring	Bryce	46080	Gila Topminnow Desert Pupfish	Exclosure around a small impoundment in drainage. Large flood event altered habitat, no suitable habitat remains.
San Francisco River	San Francisco	40020	Loach Minnow Loach Minnow (CH)	Gap Fencing on side drainages upstream at Forest Service boundary and on the lower end of BLM.
Peebles Navajo Cactus	Apache Butte	06073	Peeble's Navajo Cactus	There are two exclosures totaling fifty acres of occupied habitat. One exclosure of 40 acres and one 10 acres.

Little Colorado River	Little Colorado River	06232	Little Colorado Spinedace	Small exclosure on the Little Colorado where the River flows through a small public land parcel. Includes fencing on both sides of the river and two water gaps.
Aravaipa	South Rim	45290	Loach Minnow Loach Minnow (CH) Spikedace Spikedace (CH)	Allotment Boundaries above the Aravaipa canyon and includes the public land portions of Turkey Creek and Deer Creek. Livestock mostly limited by topography with some gap fencing.
	Hell Hole	45280		
	Dry Camp	45200		
	Painted Cave	45180		
Silver Creek	Washboard Wash	06007	Little Colorado Spinedace	Topography and gap fencing along Silver Creek upstream of Woodruff Dam.

Tucson Field Office

Name	Associated Allotment	Allotment Number	Associated Listed Species	Comments
Lower Middle Gila	Horsetrack	06111	Spikedace Spikedace (CH) Southwestern Willow Flycatcher Southwestern Willow Flycatcher (CH)	Large exclosure on the Gila River made up of topography and gap fencing on both sides of the Gila River from the Kelvin Bridge to the Buttes.
	Myer	06132		
	Len	06197		
	Cochran	06113		
	Whitlow	06032		
	Teacup Ranch	06168		
	Whitlow	06032		
	A Diamond	06120		
	Battle Axe	06059		
San Pedro	Monzingo	52260	Southwestern Willow Flycatcher Huachuca Water Umbel Huachuca Water Umbel (CH) Desert Pupfish Gila Chub Gila Topminnow	Grazing is currently excluded on the San Pedro Riparian National Conservation Area, except for a portion of the river on private land in the Brunchow Hill Allotment. The exclusion is maintained by approximately 200 miles of SPRNCA boundary fence. The integrity of the fence is difficult to maintain, primarily because of numerous water-gaps.
	Q Miller	52610		
	Three Brothers	52320		
	Lucky Hills	52520		
	Ramirez	52680		
	La Roca	52950		
	Spring Creek (Powers)	52050		
	Babocomari	52080		

Mescal Warm Springs	Mescal Mtn.	45090	Gila Topminnow	Small exclosure around a shallow marshy spring fed pool. Topminnow have not been documented at this site since 1996. In recent years the exclosure has not been functional.

Appendix A: Concurrences

Jaguar and Ocelot

The jaguar was listed as endangered from the U.S. and Mexico international border southward to include Mexico and Central and South America under the Endangered Species Conservation Act of 1969 (ESCA). Endangered status was extended to the jaguar in the U.S. in 1997 (62 FR 39147). Designation of critical habitat was determined to be prudent in January, 2010, with the proposed critical habitat rule to be published in spring 2012The jaguar was addressed in *Listed Cats of Texas and Arizona Recovery Plan (with Emphasis on the Ocelot)* (U.S. Fish and Wildlife Service 1990), but only general information and recommendations to assess jaguar status in the U.S. and Mexico, and protect and manage occupied and potential habitat in the U.S. were presented. No specific recovery recommendations or objectives for the jaguar were presented. A draft recovery plan for the jaguar is currently in process, with plans to complete the draft in 2012. Historically, as the listing rule (62 FR 39147) discusses, jaguars in the U.S. occurred in California, Arizona, New Mexico, Texas, and possibly Louisiana. The last jaguar sightings in California, Texas, and Louisiana were documented in the late 1800s or early 1900s. Sightings in the U.S in the late 20th century to the present have occurred mainly along the U.S./Mexico international border. Jaguars in the U.S. are thought to be part of a population, or populations, that occur largely in Mexico. A number of threats contributed to or continue to affect the status of jaguars rangewide, including habitat loss, persecution, poaching of prey, and fragmentation of populations across portions of the range (Caso et al. 2009). Increased illegal and consequent law enforcement actions along the Mexico-U.S. international border may be limiting jaguar movement across the border. Refer to the Secure Border Initiative (SBI*net*) Tucson West Tower Project BO (#22410-2008-F-0373) for a complete status of the species.

Endangered status was extended to the U.S. portion of the ocelot's range with a final rule published July 21, 1982 (U.S. Fish and Wildlife Service 1982a). Critical habitat is not designated for this species. Recovery for the ocelot was originally addressed in Listed Cats of Texas and Arizona Recovery Plan (with Emphasis on the Ocelot) (U.S. Fish and Wildlife Service 1990). A revised draft recovery plan was made available for public comment on August 26, 2010. The ocelot is found in every mainland country south of the U.S. except Chile, and 11 subspecies have been described (Pocock 1941, Cabrera 1961, Hall 1981, Eizirik et al. 1998). Two of the 11 subspecies occur in the U.S.: the Texas ocelot (*L. pardalis albescens*) and the Sonora ocelot (L. *p. sonoriensis*) (Hall 1981). The ocelot uses a wide range of habitats throughout its range in the Western Hemisphere (Tewes and Schmidly 1987). Despite this, the species does not appear to be a habitat generalist. Ocelot spatial patterns are strongly linked to dense cover or vegetation, suggesting it uses a fairly narrow range of microhabitats (Emmons 1988, Horne 1998). Many of the threats to the ocelot are common to all Latin American countries where most studies have occurred on nationally-recognized preserves. Threats generally include habitat loss, habitat fragmentation, logging, and harvest of the ocelot and its prey. Ocelot hunting varies between and within countries, and is legal in Ecuador, El Salvador, Guyana, and Peru. Ocelot populations appear to be rebounding in parts of its range, perhaps due to a decrease of hunting since the end of the 1980s. In the absence of hunting the ocelot seems tolerant of human settlement and activities if large forests and sufficient prey are available. The Arizona/Sonora ocelot subspecies (L. p. sonoriensis) occurs in southern Arizona and northwestern Mexico (Sonora and northern Sinaloa) (López-Gonzalez et al. 2003; Murray and Gardner 1997). Breeding populations occur in the States of Sonora and northern Sinaloa.

In November 2009, the first live ocelot was documented in Arizona (in Cochise County) with the use of camera traps. Additionally, in April 2010, an ocelot was found dead on a road near Globe, Arizona, and a genetic analysis is underway to determine the origin of this specimen, although preliminary data indicate the young male ocelot was not of captive origin. Additional sightings have been documented in southeastern Arizona in 2011 and 2012. Prior to these findings, the last known ocelot in Arizona was lawfully shot on Pat Scott Peak in

the Huachuca Mountains in 1964 (Hoffmeister 1986, Lopez Gonzalez et al. 2003). In addition to the recent Arizona sightings, a number of ocelots have been documented just south of the U.S. border in Sonora, Mexico. Specifically, with the use of camera traps, at least 4 ocelots have been documented since February 2007 in the Sierra Azul, 30-35 miles southeast of Nogales; and 1 ocelot was documented in 2009 in the Sierra de Los Ajos, about 30 miles south of the U.S. border near Naco, Mexico. Lopez Gonzalez et al. (2003) obtained 36 verified ocelot records for Sonora, 21 of which were obtained after 1990. Twenty-seven (75%) of the records for which they could determine the biotic community association were associated with tropical and subtropical habitats, namely subtropical thornscrub, tropical deciduous forest or tropical thornscrub. A population of 2,025 + 675 ocelots in Sonora was estimated by Lopez Gonzalez et al. (2003) based on the distribution of these records and the availability of potential habitat. Human population growth and development continue throughout the ocelot's range. Connectivity among ocelot populations or colonization of new habitats is discouraged by the proliferation of highways and increased road mortality among dispersing ocelots. Increased illegal and law enforcement actions along the U.S./Mexico international border could limit ocelot movement across the border, but it is uncertain if and how much this is affecting that movement.

Jaguars have been documented since 1980 in the action area from the Peloncillo Mountains west to the Baboquivari Mountains in Sky Island mountain ranges and from the international boundary north to Interstate 10. BLM allotments are scattered in this area. Some of these areas may provide habitat for the jaguar, especially for travel between mountain ranges (camera data seem to indicate that a jaguar crossed the Altar Valley to travel from one mountain range to another). Some BLM areas may also provide foraging habitat.

The recent ocelot locations are adjacent or near the action area. BLM allotments that are scattered in southeastern Arizona may provide dense vegetation for the ocelot, especially for travel between mountain ranges. Some BLM lands may also provide habitat for foraging and hiding.

The effects to the jaguar and ocelot are expected to occur by altering their travel and foraging cover, and prey availability, and inadvertently through predator control activities.

The proposed action is not anticipated to result in significant changes to habitat quality or quantity because the allotments will be managed to meet the standards and guidelines. This management will not result in clearing of habitat, destruction of riparian areas, or fragmentation. Any changes to prey habitat are likely to be localized, and livestock management is not expected to significantly change prey availability throughout the areas in which jaguars or ocelots may occur. These effects on jaguar and ocelot foraging and travel cover, and on prey habitat, are expected to be small, not measurable, and insignificant.

While the proposed action does not include predator control actions, the effects of predator control actions associated with livestock management on BLM lands are considered interdependent or interrelated effects. Predator control actions associated with livestock management on BLM allotments may affect a jaguar or ocelot, if present during the control actions. Some measures are incorporated into this BO from the 1997 BO to minimize possible effects on jaguars from predator control activities. These measures also apply to the ocelot. A jaguar or ocelot may be inadvertently pursued while mountain lion control activities are being implemented; however, control activities would cease once it was known that the target animal was a jaguar or ocelot (as required by state and Federal law). The likelihood of a jaguar or ocelot occurring in the same area where predator control activities are being implemented because of livestock depredation in association with BLM grazing allotments may be possible, but it is small because few jaguars or ocelots occur in the action area and few or no predator control actions associated with this proposed action are anticipated to be implemented in the future (none have been reported to the BLM since the 1997 BO). We believe the listing of the jaguar in the U.S. in 1997 combined with recent heightened awareness of the plight of the jaguar and the cooperative conservation efforts of the Jaguar Conservation Team, which includes ranchers and other stakeholders, greatly decreases the chance that a jaguar will be illegally killed in Arizona. We also believe that the smaller size of an

ocelot (as compared to a mountain lion), the recent locations within Arizona, and BLMs efforts to notify permittees of the possible presence of ocelots greatly decreases the chance that an ocelot will be illegally killed in Arizona through predator control because of livestock depredation.

Conclusion

After reviewing the status of the jaguar and ocelot, the environmental baseline for the action area, and the effects of the proposed action, we concur that the proposed action may affect, but is not likely to adversely affect, the jaguar or ocelot based upon the following:

1. The proposed action is not anticipated to result in significant changes to habitat quality or quantity because the allotments will be managed to meet the standards and guidelines, which will not result in clearing of habitat, destruction of riparian areas, or fragmentation.

2. Any changes to prey habitat are likely to be localized, and not expected to significantly change prey availability throughout the areas where jaguars or ocelots may occur.

3. The likelihood of a jaguar or ocelot occurring in the same area where predator control activities are occurring is small and it shall require identification of the target animal to species before control activities are carried out. If the identified animal is a jaguar or ocelot, that individual shall not be subjected to any predator control actions.

Lesser Long-nosed Bat

The lesser long-nosed bat (bat) was listed as endangered in 1988 (53 FR 38456). No critical habitat has been designated for this species. A recovery plan was completed in 1997 (U.S. Fish and Wildlife Service 1997). Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current endangered status of the species. The five-year review has been completed and recommends downlisting to threatened (U.S. Fish and Wildlife Service 2007a). The lesser long-nosed bat recovery plan, listing document, and the 5-year review for the lesser long-nosed bat, all discuss the status of the species and threats, and are incorporated by reference. Refer to these three documents for further status details.

The bat is known to forage on both agaves and saguaros throughout the southern portion of the action area on BLM and non-Federal lands in and outside of allotments. Most of these allotments are within 40 miles of a known active roost site. Three active roost sites occur on or are adjacent to BLM lands. Two roosts are located just northeast of the Chiricahua Mountains in the Nippers (5155) and Hay Stack (5154) allotments. Another roost is located in Baker Canyon on the Guadalupe West (5244) allotment. The Nippers and Guadalupe West allotments are in areas that are difficult for livestock to access. No developments are located near these roosts. The Hay Stack allotment site is in an area that is accessible to livestock. No developments are at the roost, but a stock tank is approximately 300 yards from the site, along with a public road.

Livestock management actions are not occurring at the roosts in the Nippers and Guadalupe West allotments, so there will be no direct effects to sites. Livestock management effects are unlikely to be occurring to the roost in the Hay Stack allotment because there are no developments at the roost that would require maintenance actions. The use and maintenance of the stock pond and road will not result in disturbance to the roost because they are 300 yards away. The BLM has committed to implementing all conservation measures and reasonable and prudent measures in the 1997 BO and in their BA. These measures include:

1. Livestock grazing will not disturb or modify roost sites in the action area.

2. Construction and maintenance of livestock management structures and implementation of rangeland improvements will avoid or minimize the damage or destruction of bat food plants within 40 miles of a roost site.

3. Within 40 miles of roost sites, livestock management guidelines and prescriptions will be implemented that facilitate the regeneration and maintenance of bat food plants, including implementing the appropriate drought management policies and managing to meet the standards and guidelines. This includes minimizing damage to bolting agaves, especially in low flowering years.

Conclusion

After reviewing the status of the lesser long-nosed bat, the environmental baseline for the action area, and the effects of the proposed action, we concur that the proposed action may affect, but is not likely to adversely affect, the lesser long-nosed bat based upon the following:

1. The known roost sites are not expected to be disturbed or modified by the proposed livestock management because of inaccessibility or distance from actions. The BLM will make necessary management changes to protect any roosts found in the future that are in or near an allotment. Therefore, the effects to roosts are discountable.

2. Effects from the construction and maintenance of structures and improvements to forage plants will be minimal because the BLM will survey before the actions are implemented and minimize effects to forage plants. This will result in relatively few forage plants being affected, and will leave the majority of forage plants in the area unaffected. Therefore the effects are insignificant, and, as a result, will not limit the use of the area for bats.

3. Livestock management guidelines and prescriptions will be implemented that facilitate the regeneration and maintenance of bat food plants, including implementation of appropriate drought management policies and managing to meet the standards and guidelines. This includes minimizing damage to bolting agaves, especially in low flowering years, through changes in management, including implementing drought management guidelines and managing to meet the standards and guidelines. These actions may result in some individual plants and bolts being affected in some years, but most foraging plants and bolts will be unharmed, and therefore, the effects are insignificant. Foraging areas will continue to be used by bats.

4. No critical habitat has been designated for these species, so none will be affected.

Mexican gray wolf

The Mexican gray wolf was listed as an endangered species in April, 1976 (41 FR 17742). Mexican gray wolves were extirpated from the wild in the U.S. by private and government control campaigns. Historically, Mexican gray wolves were found in the eastern and central portions of Arizona. Wolves were known to occur on the Coronado National Forest and on portions of the Apache National Forest as well. The wolf's native diet consists primarily of elk (*Cervus elaphus*), Coues white tail deer (*Odocoileus virginianus couesi*), and mule deer (*Odocoileus hemionus*) (Brown 1983). Their preferred habitat is the same of their prey, pine and mixed conifer forests, pinyon juniper woodlands and adjacent grasslands above 4,500 feet in elevation (Brown 1983).

A recovery plan, developed in 1982, recommended re-establishment of a wild population and maintenance of a

captive population of wolves (U.S. Fish and Wildlife Service 1982b). In 1998, Mexican gray wolves were reintroduced to parts of Arizona and New Mexico under the authority of section 10(j) of the Endangered Species Act (63 FR 1752). This set forth management directions and limitations within a defined boundary known as the Mexican Wolf Experimental Population Area. Within the experimental boundary is a primary and secondary recovery zone known as the Blue Range Wolf Recovery Area. Because of their status as an experimental, non-essential population, wolves found in these recovery zones are treated as though they are proposed for listing for section 7 consultation purposes. By definition, an experimental non-essential population is not essential to the continued existence of the species. Therefore, no proposed action impacting a population so designated could lead to a jeopardy determination for the entire species. As of 2011, the minimum population estimate of wolves within the experimental population area was 58.

No wolves occur within the action area. If individual wolves disperse from the experimental population south or north into the action area, humans working near individuals could disturb the wolves, but they would only move to other areas. Livestock grazing would be managed to improve or maintain the productivity of the area, and would not affect the native prey base of the wolf.

Conclusion

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the Mexican gray wolf. No critical habitat will be affected because none has been designated. Our concurrence is based on the following:

1. Any wolves likely to be found in the action area are considered part of the experimental, non-essential population, so no action could lead to jeopardy for the species.

2. The survival and reproduction of any wolves that may disperse from the experimental population into the action area would not be affected because the wolves would move to another area if disturbed, and the prey base is unlikely to be adversely affected by livestock management.

Mexican Spotted Owl

We listed the Mexican spotted owl (MSO) as a threatened species in 1993 (58 FR 14248) and designated critical habitat in 2004 (69 FR 53182). The primary threats to the species were cited as even-aged timber harvest and the threat of catastrophic wildfire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. We appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (RP) in 1995 (U.S. Fish and Wildlife Service 1995).

Most habitats in the action area that meet the recovery plan definition are located on the sky island mountain ranges administered by the U. S. Forest Service. These areas have numerous Protected Activity Centers (PACs) that were determined by the presence of MSO. Other areas within the action area may also contain potential MSO habitat.

Two MSO nests have been documented in the last few years in the Aravaipa Canyon area. One is located in Aravaipa Canyon just east of the confluence with Turkey Creek. The other is located in lower Turkey Creek. PACs will be established for these nest locations in the future. Both of these sites are in the South Rim allotment (4529). MSO have not been located on other BLM lands in the action area. There is one known MSO location in the Muleshoe EMA area on private land, which is near BLM lands.

In the Aravaipa Creek area, livestock management actions will not affect MSO because this area in the South Rim allotment is excluded from livestock management (the allotment currently is not grazed, but if grazed in the future, these areas will be excluded). Areas with some habitat characteristics for the MSO on and near BLM lands in the Aravaipa Creek, Muleshoe EMA, and Guadalupe Canyon areas may be affected by livestock management. These habitats are not anticipated to be significantly or measurably affected by livestock management because they generally are rocky, cool canyons with riparian areas, and are relatively difficult for livestock to access.

Habitat characteristics for the MSO, as defined by the recovery plan, are very limited within the planning area on BLM lands. There are some canyons besides Aravaipa that may provide some habitat characteristics for the MSO (e.g., Guadalupe Canyon), but, other than the two nests in the Aravaipa Canyon area, there are no protected or restricted habitats on BLM lands in the planning area as defined by the recovery plan. Occasional protocol and non-protocol surveys have not detected any MSO in other areas.

One small parcel (approximately 120 acres) is within the boundaries of Critical Habitat Unit BRW-18, which is on the Paradise allotment (5158). Approximately 35 acres of this parcel are on BLM lands. This parcel is located near the Paradise area on the eastern side of the Chiricahua Mountains. This parcel is mainly a juniper vegetation type, with some scattered pinyon pine (Doug Powers, pers. comm., March 10. 2005). The area is surrounded by private land (the allotment contains only six percent BLM land). The parcel does not provide the constituent elements for forest structure, and likely provides limited prey habitat (few fallen trees or other woody debris; few number of tree or plant species; and low levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration). Livestock management is unlikely to affect this parcel because dense vegetation and steep topography make it difficult for livestock to graze this area. There is no critical habitat identified on BLM lands anywhere else within the action area.

Conclusion

We concur with your determination that the proposed action may affect, but is not likely to adversely affect, the MSO or its critical habitat. Our concurrence is based on the following:

1. The two nest sites in the Aravaipa Creek area will not be affected by livestock management because these areas are excluded from livestock grazing.

2. No MSO are known and no PACs have been identified on other BLM lands in the action area.

3. Potential habitat is very limited on BLM lands in the action area.

4. Impacts to potential habitat on and near BLM lands will be insignificant and not measurable.

5. There is one small 35-acre parcel of BLM land within the boundaries of a critical habitat unit, but this parcel includes no constituent elements for forest structure and provides limited prey habitat.

Chiricahua leopard frog

The Chiricahua leopard frog (*Lithobates chiricahuensis*) (CLF) was listed as a threatened species without critical habitat in a Federal Register notice dated June 13, 2002. Included was a special rule to exempt operation and maintenance of livestock tanks on non-Federal lands from the section 9 take prohibitions of the Act. Critical habitat was designated on March 20, 2012 (FRN 77:16324) in Arizona and New Mexico. Generally, the listed PCEs include the habitat quality of breeding sites, lack of chytridiomycosis and predators,

and dispersal habitat quality. A recovery plan has been completed (U.S. Fish and Wildlife Service 2007b), the goal of which is to improve the status of the species to the point that it no longer needs the protection of the Endangered Species Act. The CLF is an inhabitant of cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers at elevations of 3,281 to 8,890 feet in central and southeastern Arizona; west-central and southwestern New Mexico; and in Mexico, northeastern Sonora, the Sierra Madre Occidental of northwestern and west-central Chihuahua, and possibly as far south as northern Durango (Platz and Mecham 1984, Degenhardt *et al.* 1996, Sredl *et al.* 1997, Sredl and Jennings 2005). In Arizona, slightly more than half of all known historical localities are natural lotic systems, a little less than half are stock tanks, and the remainder are lakes and reservoirs (Sredl *et al.* 1997). Sixty-three percent of populations extant in Arizona from 1993-1996 were found in stock tanks (Sredl and Saylor 1998). Based on 2008 data, the species is still extant in most major drainages in Arizona and New Mexico where it occurred historically. Threats to this species include predation by non-native organisms, especially bullfrogs, fish, and crayfish; disease; drought; floods; degradation and loss of habitat as a result of water diversions and groundwater pumping, poor livestock management, altered fire regimes due to fire suppression and livestock grazing, mining, development, and other human activities; disruption of metapopulation dynamics; increased chance of extirpation or extinction resulting from small numbers of populations and individuals; and environmental contamination. Additional information about the CLF can be found in Painter (2000), Sredl *et al.* (1997), Jennings (1995), Degenhardt *et al.* (1996), Rosen *et al.* (1994, 1996), Sredl and Howland (1994), Platz and Mecham (1984, 1979), Sredl and Jennings (2005), and U.S. Fish and Wildlife Service (2007b).

In or near the action area, the CLF is known currently or historically from cienegas, pools, livestock tanks, lakes, reservoirs, streams, and rivers at elevations above about 3,200 feet in southeastern Arizona (Pima, Santa Cruz, and Cochise counties). Although surveys are incomplete, there are no known extant populations on BLM lands within the action area. The only extant populations of CLF on BLM lands near the action area of which we are aware are at Cienega Creek/Empire Cienega, Pima County, where the species is found in the creek and in adjacent stock tanks. CLFs could potentially occur elsewhere on BLM lands near recent locations, but comprehensive surveys have not been done to determine occupancy or if habitat is present at all possible sites. For this analysis, we assume that habitat may be present, or may be present in the future, in the following areas that are near known current or the more recent historical populations.

Peloncillo Mountains--CLFs have been found near BLM lands in Guadalupe Canyon as recently as 2007. Guadalupe and Baker Canyons, located on the Guadalupe West Allotment (52880) in the Peloncillo Mountains have habitat for CLF, but they have not been surveyed. This allotment contains more than 30% BLM lands.

Swisshelm Mountains—there is an extant CLF population in Leslie Canyon on the Leslie Canyon National Wildlife Refuge (NWR). The D'Amaco allotment (5222) is upstream of that population. Other allotments in the area that CLF could move on or through if habitat is present include the Bidigin (5218), Roger Riggs (5273), Swisshelm (5249), and Moore (5285) allotments. Only the Bidigin contains more than 30% BLM lands.

Chiricahua Mountains—The species had not been documented from the Chiricahua Mountains since 2002; however, a refugium has been established in South Fork Cave Creek Canyon near Portal. The Paradise allotment (5158) may contain CLF habitat. This allotment does not contain more than 30% BLM lands.

Bonita Creek—historical records occur in the Ash Creek drainage on the San Carlos Reservation upstream of BLM allotments on Bonita Creek. Potential CLF habitat is present in the upper portion of Bonita Creek in the Johnny Creek (4615) and Bonita Creek (4616) allotments. Both of these allotments contain more than 30% BLM lands.

San Francisco River—Known populations occur well upstream of BLM allotments. CLF habitat may be present in the Metcalf (4001), San Francisco (4002), and Red Hickey Hills (4005) allotments. The San Francisco and Red Hickey Hills allotments contain more than 30% BLM lands.

Galiuro Mountains—There is an historical location in Redfield Canyon, and populations are extant in the Deer Creek area on the east side of the mountains in the Aravaipa watershed. CLF habitat may occur in the higher elevations in the canyons in the area on the Muleshoe (4401), Soza Mesa (4402), and C-Spear (4409) allotments. The Muleshoe and Soza Mesa allotments contain more than 30% BLM lands.

Baboquivari —There are recent records of CLF from three stock tanks on the western slopes of the mountain, but those populations were lost during a drought in 2002. These tanks are in the higher elevations, some of which are near BLM allotments (there are scattered BLM parcels at high elevation nearby). The allotments in the area include Anvil (6100), Thomas Canyon (6031), Baboquivari (6089), Three Peaks (6137), Elk Horn (6175), and Hay Hook (6093). The Baboquivari and Hay Hook allotments contain more than 30% BLM lands.

Las Guijas Mountains—a strong metapopulation of natural and recently introduced populations is located on the Buenos Aires NWR, and possibly adjacent lands. Possible habitat that CLF could move to from the existing populations may occur on the Arivaca (6003), Cerro Colorado (6023), San Luis Mountain (6085), and Arroyo Seco (6186) allotments. None of these allotments contain greater than 30% BLM lands.

Sierrita Mountains- Two populations in stock tanks have been documented on the southwestern slopes of the mountain. Possible habitat that CLF could move to from the existing populations may occur on the Ash Mountain (6015), Twin Buttes (6001), Gunsight Mountain (6191), Sierrita (6198), Black Hills (6119), and Twin Buttes #2 (6208) allotments. Only the Twin Buttes #2 allotment contains more than 30% BLM lands.

Apache and Navajo counties—numerous historical populations are documented south (upstream) of the creeks and rivers in the area on Forest Service and non-Federal lands. The CLF is not a species of the high valleys of the Colorado Plateau; most BLM lands in this area are outside of the range of the species. We do not anticipate that CLF will be found or establish in areas north of the historical localities in this area.

Critical habitat that has been designated in or near BLM allotments include Swisshelm (Leslie Canyon NWR), Sierrita, and Las Guijas (Buenos Aries NWR) mountains. Other critical habitat areas near BLM allotments are upstream of BLM allotments, or are separated by barriers or distance so that effects from the proposed action are unlikely to affect these areas.

The reasons for CLF decline within the action area are likely identical to the reasons for range wide decline described above. CLF's southern range has an intermixed pattern of land ownership involving Federal, State, and private landholders. The CLF have been affected by activities on Federal, state and private lands that have cumulatively contributed to its decline. Many of these activities, such as improper livestock grazing, human population expansion and associated infrastructure development, and recreation (including OHV use), are expected to continue on State and private lands within the range of the species. These activities are expected to contribute to introductions of non-native species, such as bullfrogs, crayfish, and fish that would prey on, or compete with, the CLF, and Bd (chytrid fungus) that can harm the species. These activities could also continue to contribute to fragmentation, major manipulations, and pollution of the CLF's wetland habitats. Conversely, the livestock water sources may provide the only reliable habitat for the CLF in these areas. Safe Harbor Agreements through the AGFD and the Malpai Group are being implemented to result in additional sites at water tanks for the CLF throughout its range in Arizona. A Habitat Conservation Plan with the Malpai Group may also result in additional sites at water tanks.

Although surveys are incomplete, the only populations of CLF currently known in the action area that could be affected by livestock management as part of the proposed action are in Leslie Canyon, Swisshelm Mountains, which is on the Leslie Canyon NWR and non-Federal lands near BLM lands, and on the Buenos Aires NWR and adjacent lands near BLM lands. Any livestock management in these areas upstream of, and adjacent to, these populations could affect the populations of CLF as described in the General Effects section. Watershed effects of livestock management on BLM lands, including grazing and prescribed burns, could result in an increase of soil transport, and possibly excessive water flow during storms, which may adversely affect the occupied habitat of CLF downstream. This is unlikely because the BLM will implement grazing and other livestock management practices to maintain or improve the lands (will manage to meet standards). The effects on CLF will be minimal, and not measurable on any individuals or their habitat.

The only other effects to existing CLF locations could be from bullfrogs that may move from waters on BLM allotments to existing CLF populations. The BLM has not assessed whether water developments near CLF locations contain non-native species, but they have committed to working with the AGFD and FWS in assessing and removing non-native species from those waters, and recommend to permittees to not stock non-natives in waters on non-Federal lands. While this will not eliminate this threat, it will minimize it, and, depending on funding, almost eliminate this threat from most waters on BLM lands and on non-Federal lands in allotments that contain more than 30% BLM lands.

Other effects would only occur if CLF is established or subsequently found on BLM allotments. The environmental baseline lists allotments near known or likely occupied sites. CLF from these sites could move onto BLM allotments if habitat is available, or CLF could be directly established at some sites. If they are, the BLM will coordinate with us, AGFD, and others in implementing conservation measures for these new sites that minimize the effects on these populations. The specific effects on these possible future sites are unknown, but the possible general effects are the same as described in previous paragraphs.

Effects to critical habitat in the Swisshelm, Sierrita, Las Guijas mountains could include indirect watershed effects to habitat quality and possible movement of bullfrogs. These effects, while possible, will be unlikely or will not occur because the BLM will manage their lands to meet standards on BLM lands so that watershed conditions will be maintained or improved, and will implement actions to remove bullfrogs from water sources on BLM allotments, which will minimize or almost eliminate this threat. Any effects would likely be discountable and insignificant because the effects to PCEs in these areas would not be measurable and are unlikely to occur.

Conclusion

We concur with your determination that the proposed action may affect, but is not likely to adversely affect, the CLF. Our concurrence is based on the following:

1. No extant populations of CLF are known on BLM lands within the action area.

2. The BLM will work with us, AGFD, and permittees in eliminating or minimizing the threat of non-native species in the areas where they may affect CLF.

3. The allotments near known CLF populations will be managed to meet the current standards and guidelines, which should minimize any watershed effects from livestock grazing on CLF populations.

4. The only population currently known in the action area occurs on National Wildlife Refuges where they are protected from many activities.

5. Effects to critical habitat PCEs will be insignificant and discountable because the BLM will manage their lands to meet standards and will work to minimize or eliminate bullfrogs from BLM water sources.

Beautiful Shiner, Yaqui Chub, Yaqui Catfish, and Yaqui Topminnow

In 1984 (49 FR 34490), we listed the beautiful shiner and Yaqui chub as endangered with critical habitat, and the Yaqui catfish as threatened with critical habitat. Critical habitat includes all aquatic habitat on the San Bernardino NWR. We listed the Yaqui topminnow as endangered in 1967 (32 FR 4001). Critical habitat has not been designated for this species. The limiting factors for these species include habitat destruction and modification, predation, inadequacy of regulatory mechanisms, water diversion, groundwater pumping, and other factors. Refer to the listing notices for more information regarding threats, status, and species descriptions.

All these species occur on the San Bernardino NWR, and the topminnow and chub also occur on the Leslie Canyon NWR. One or all of these species may occur, or eventually occur, upstream of the Leslie Canyon NWR (through a Safe Harbor Agreement) on non-Federal land, some of which occurs in BLM allotments. The San Bernardino Valley includes the Glen allotment (5237), which is adjacent to and partially drains into the San Bernardino refuge. The D'amico (5222), Bidigin (5218), Roger Riggs (5273), and Swisshelm (5249) allotments are adjacent, near, or drain into existing or future fish locations in the Leslie Canyon area. Only the Bidigin allotment contains more than 30% BLM lands. Refer to the 1997 BO for additional information.

Direct effects of grazing on the Yaqui fishes are precluded because the BLM does not authorize such activities in the habitats of these fishes.

Indirect watershed effects could potentially occur to Yaqui fish at San Bernardino or Leslie Canyon NWRs as a result of livestock grazing. These effects are described in detail in the General Effects section in the BO. BLM lands in all these allotments are meeting the current standards, so watershed effects to Yaqui fish habitat should be minimal. The condition on non-Federal lands on the Bidigin allotment and allotments that contain less than 30% BLM lands are unknown. Future management on BLM lands should maintain or improve the watershed conditions because the BLM will manage these lands to meet the standards and guidelines.

Effects on critical habitat for these species are the same as described for the species in the preceding paragraphs. We do not anticipate adverse effects to the PCEs or expect that the proposed action will adversely affect the recovery potential of these species.

Refer to the 1997 BO for additional discussion of effects.

Conclusion

We concur with your determination that the proposed action may affect, but is not likely to adversely affect, the beautiful shiner and its critical habitat, Yaqui chub and its critical habitat, Yaqui catfish and its critical habitat, and Yaqui topminnow. Our concurrences are based on the following:

1. Direct effects from livestock management to these fish and their critical habitat are precluded or unlikely because the BLM does not authorize such actions in these areas.

2. Indirect watershed effects to these fish and their critical habitat should be minimal because the allotments in the area are meeting the current standards, and BLM will manage these lands to meet the standards and guidelines in the future.

Arizona Hedgehog Cactus

The analysis and conclusion for the Arizona hedgehog cactus is the same as in the 18 Allotments BO. The Arizona hedgehog cactus was listed as endangered without critical habitat by the FWS in 1979 (44 FR 61556). It is listed wherever it occurs (50 CFR 17.12), but is only known to occur at and near the type locality near US Highway 60 and the Gila and Pinal county line. Factors contributing to this species' listing include habitat destruction through mining activities, illegal collection, and insect damage.

At the time of listing, some confusion existed among experts regarding the taxonomic separation of several varieties of the species *Echinocereus triglochidiatus*. Consequently, the FWS clarified that "populations showing extensive variation but with some affinities toward var. *arizonicus* are not to be considered classical var. *arizonicus* and therefore will not be subject to the protection and restrictions of the Endangered Species Act" (44 FR 61556).

The Arizona hedgehog cactus has not been detected on any of the allotments in the project area; however, potential habitat may exist on Mescal Mountain and Christmas allotments. However, the likelihood of occurrence is low because the soils within the elevation and ecotone range in the action area are derived from sedimentary (mostly limestone) rather than the granite rocks known to be associated with Arizona hedgehog cactus. Intensive inventory efforts for this species have not been done on these allotments. Complete distribution, abundance, and taxonomic status are unknown at this time.

Conclusion

We concur with your determination that the proposed action may affect, but is not likely to adversely affect, the Arizona hedgehog cactus. No critical habitat will be affected, because none has been designated. Our concurrence is based on the following:

1. Although surveys are incomplete, no Arizona hedgehog cacti have been found on the allotments or in the action area.

2. The soils and rock types in allotments with the greatest potential to support Arizona hedgehog cactus are not typical of areas where the species is known to occur.

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