February 2, 2017

Mr. Steve Best, Forest Supervisor
Apache-Sitgreaves National Forests
Post Office Box 640
Springerville, Arizona 85938

RE: Wildbunch Allotment Management Plan

Dear Mr. Best:

Thank you for your July 21, 2015, letter received in our office on that date requesting initiation of formal section 7 consultation under the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 et seq.) for ongoing livestock grazing and effects to seven listed species and proposed and designated critical habitat under the Wildbunch Allotment Management Plan (AMP) on the Clifton Ranger District, Apache-Sitgreaves National Forests (ASNFs), Arizona (Appendix B, Map 1). A biological assessment (BA) analyzed the effects of the proposed action on seven federally-listed species and their designated or proposed critical habitat (Table 1).

Table 1. Summary of newly listed species and critical habitat analyzed in the BA for Wildbunch Allotment.

<table>
<thead>
<tr>
<th>May Affect, Likely to Adversely Affect Determination</th>
<th>Species/Critical Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiricahua Leopard Frog (<em>Lithobates chiricalahuensis</em>)</td>
<td></td>
</tr>
<tr>
<td>Loach Minnow (<em>Tiaroga cobitis</em>) and its critical habitat</td>
<td></td>
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<tr>
<td>Spikedace (<em>Meda fulgida</em>) and its critical habitat</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>May Affect, Not Likely to Adversely Affect Determination</th>
<th>Species/Critical Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow-billed cuckoo (<em>Coccyzus americanus occidentalis</em>)</td>
<td></td>
</tr>
<tr>
<td>Southwestern Willow Flycatcher (<em>Empidonax traillii extimus</em>) and its critical habitat</td>
<td></td>
</tr>
<tr>
<td>Mexican spotted owl (<em>Strix occidentalis lucida</em>) and its critical habitat</td>
<td></td>
</tr>
<tr>
<td>Narrow-headed gartersnake (<em>Thamnophis rufipunctatus</em>)</td>
<td></td>
</tr>
</tbody>
</table>
Not Likely to Adversely Modify Determination (If Designated)

<table>
<thead>
<tr>
<th>Proposed Critical Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow-billed cuckoo proposed critical habitat†</td>
</tr>
<tr>
<td>Narrow-headed gartersnake proposed critical habitat</td>
</tr>
</tbody>
</table>

We concur with your “likely to adversely affect” determinations for the above species. We also concur with your “not likely to adversely affect” and “not likely to adversely modify” determinations for the remaining species in Table 1, and provide our rationales in Appendix A of this consultation. All information required to initiate consultation was either included with your letter, numerous staff emails, the BA, or is otherwise accessible for our consideration and reference.

CONSULTATION HISTORY

July 29, 2015  We received a letter from the ASNFs requesting formal consultation on all listed species and their critical habitats on the Wildbunch Allotment.

January 6, 2016  We received an email from your office with changes to the proposed action that needed to be incorporated into this consultation.

May 11, 2016  We received your final biological assessment for the Wildbunch Allotment and your request to initiate formal consultation.

August 29, 2016  We requested clarification on the ASNFs decision not to initially consult on yellow-billed cuckoo proposed critical habitat in this consultation. The ASNFs made new effects determination that the proposed action will not adversely modify proposed critical habitat.

September 6, 2016  We sent the ASNFs the Wildbunch Allotment permit renewal draft biological opinion for their review.

February 1, 2017  The ASNFs contacted our office and informed us that they had no comments on the draft biological opinion.

February 2, 2017  We sent the final BO to the ASNFs

BIOLOGICAL OPINION

Description of the Proposed Action and Action Area

The Wildbunch Allotment (WBA) was last consulted on in the August 26, 2008, Biological Opinion (22410-2001-F-0211 R1). The proposed action has been modified and new species have been listed or proposed for listing with critical habitat. Loach minnow and spikedace were reclassified to Endangered with critical habitat; critical habitat for Southwestern willow flycatcher and Mexican spotted owl has been finalized, and in the case of the flycatcher, revised. Narrow-headed gartersnake and yellow-billed cuckoo were listed as threatened with proposed critical habitats.

† This determination can be considered for conversion to a “not likely to adversely affect” determination once the critical habitat is finalized.
**Grazing Management**

The proposed action consists of reissuing a 10-year grazing permit with the grazing management described below. It includes adaptive management options to reach desired conditions in the WBA. The WBA is currently divided into eight main pastures: South, Mud Springs, Roan Cow, Indian/Oak, North, Horse, Little, and Joe Fritz. The proposed action administratively splits the South Pasture into two new pastures: Southwest and Southeast. North and Joe Fritz pastures would be combined and managed as a single pasture. Little Pasture will not be authorized for grazing; incidental use may occur as livestock pass through it from one authorized pasture to another. The WBA also has five small traps and three exclosures. Traps are used for gathering and moving livestock from one pasture to another. Exclosures are areas excluded from livestock grazing. Additional details regarding use of the WBA are as follows:

- **Rotation:** 8 pasture deferred rest rotation.
- **Season of Use:** Year-long.
- **Stocking:** 188 to 311 cow and calf pairs (March 1 to February 28), 8 horses (March 1 to February 28), 29 to 48 yearlings (January 1 to May 31), and 22 to 35 yearlings (January 1 to October 31).

Annual authorized livestock numbers in the ranges listed in the permit may be adjusted upward during the grazing year based on favorable conditions, or may be adjusted downward in the case of drought, insects, or other environmental factors that affect forage availability. The maximum numbers would be allowed but not exceeded when desired conditions are met. Allowable use by pasture would consist of non-use to conservative use according to growing season, as described in Table 2. Non-use to light use consists of 0 to 30 percent of herbaceous key forage plants by weight in upland key areas during the growing season. Conservative use consists of 31 to 40 percent use of herbaceous key forage plants by weight in upland key areas during the dormant season. Woody browse would occur at 35 percent use throughout the year but at varying locations.

<table>
<thead>
<tr>
<th>Pasture</th>
<th>Growing Season Use (July to October)</th>
<th>Dormant Season Use (November to June)</th>
<th>Woody Browse²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southwest³</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
<tr>
<td>Southeast</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
<tr>
<td>Mud Springs</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
<tr>
<td>Roan Cow</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
<tr>
<td>Indian Oak</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
<tr>
<td>North/Joe Fritz</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
<tr>
<td>Horse</td>
<td>0 to 30</td>
<td>31 to 40</td>
<td>35</td>
</tr>
</tbody>
</table>

² Woody browse = riparian vegetation in canyon bottoms along intermittent springs and creeks.
³ Southwest Pasture = less grazing intensity to allow improvement of vegetation condition.
Additional Management Actions:

- Mud Spring Pasture will be used up to three months during the growing season once out of every three years.
- The South Pasture would be administratively divided into two sections called the Southwest and Southeast pastures (Appendix A). Because of poor range condition, the Southwest and Southeast pastures would be managed to allow different allowable use levels and timing of grazing. Through herding, livestock would be encouraged to use the Southeast Pasture to allow the Southwest Pasture recovery time. If herding proves to be ineffective, an adaptive management strategy would be implemented as described below.
- North and Joe Fritz pastures would be combined into the North/Joe Fritz Pasture. This would be an administrative change only, with no associated ground disturbing activities.
- Roan Cow pasture will be used for up to four months during the growing season, one out of two years, and totally rested once every five years.
- Two new trick tanks will be constructed (one in Roan Cow and one in Mud Springs pastures, each with less than a one-acre footprint), with a collection apron, storage tank, pipeline, and trough to collect and hold water, surrounded by up to 0.5 miles of fence. Livestock would use the new trick tanks during the growing season.
- One 12,000-gallon water storage tank and three water troughs with a capacity of 6,000 gallons each would be constructed in the Southeast pasture. These would have shut off valves installed to help control distribution and use of cattle. Improved water distribution for livestock in the Southeast pasture would keep livestock from traveling to the Southwest pasture. The annual operating instructions will provide maintenance schedules and requirements for range improvement.
- In the Little Pasture, study plots would be developed to test site potential for native vegetation growth within the Wildbunch Allotment. This pasture was selected because livestock use is not authorized. Experiments would include hand seeding up to four small plots less than ten acres each, changing grazing intensity in seeded areas, and manually irrigating with portable water tanks on vehicles. Study areas would be temporarily fenced with electric fencing to prevent incidental access when livestock are trailed through the Little Pasture.

Additional Conservation Measures:

- Salt will be used to help achieve proper livestock grazing distribution. Salt would not be placed within 0.25 mile of any surface water (including dirt tanks) or riparian areas;
- Livestock are excluded from the Blue and San Francisco rivers and associated riparian areas except for trailing to shipping pens. When low water permits, livestock are trailered across the Blue River;

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\[ \text{Little}^4 \text{ Pasture = no grazing. Incidental use up to 5 percent may be authorized if vegetation condition improves.} \]
Mr. Steve Best

- Prior to stock tank maintenance, Chiricahua leopard frogs surveys will be conducted according to the Recovery Plan protocol;
- Conservative forage use rates of 31 to 40 percent will be implemented in Mexican spotted owl recovery habitat in upper Mud Springs Canyon; and
- Critical area monitoring in Indian and Cienega creeks and Wildbunch Canyon will occur.

In the event that the above conservation measures do not accomplish site-specific resource objectives, additional optional measures may be implemented. These optional measures would be designed to address site-specific resource concerns and may include such things as temporary fencing, electric fencing, drift fences, additional livestock exclosures, temporary pipelines and water troughs, reconstruction of existing spring improvements, and construction of new improvements such as spring boxes and water gaps. Field surveys for threatened or endangered species will be conducted prior to extensive reconstruction of existing improvements or the construction of new range improvements, as detailed above, if they are proposed in listed species habitat. Adjustments will be made in the location of improvements or the timing of construction, as appropriate, in order to avoid adverse effects to these species. Additional consultation with the Service will be conducted as appropriate. Best Management Practices will be implemented to comply with the Clean Water Act.

STATUS OF THE SPECIES

Chiricahua Leopard Frog
The Chiricahua leopard frog was listed as a threatened species without critical habitat in 2002 (USFWS 2002). Critical habitat was designated in 2012 (USFWS 2012a). The Chiricahua Leopard Frog Final Recovery Plan was signed in April 2007 (USFWS 2007a).

The Chiricahua leopard frog inhabits 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; Lemos-Espinal and Smith 2007; Rorabaugh 2008).

Chiricahua leopard frogs are still extant in the major drainage basins in Arizona and New Mexico where it occurred historically; with the exception of the Little Colorado River drainage in Arizona and possibly the Yaqui drainage in New Mexico. However, within those major drainage basins, there are numerous systems in which it has not been recently found. These include the White River, West Clear Creek, Tonto Creek, Verde River mainstem, San Francisco River, San Carlos River, upper San Pedro River mainstem, Santa Cruz River mainstem, Aravaipa Creek, Babocomari River mainstem, and Sonora Creek mainstem. In southeastern Arizona, no recent records (1995 to the present) exist for the Pinaleño Mountains or Sulphur Springs Valley; and the species was extirpated from the Chiricahua Mountains. The Partners for Fish and Wildlife Program (Arizona Ecological Service Office) has funded five projects to allow re-introduction of Chiricahua leopard frogs in the Chiricahua Mountains (K. Randall, USFWS, pers. comm. 2015). Chiricahua leopard frogs are now absent from all but one of the southeastern Arizona valley bottom cienega complexes. As of 2009, there were only 84 sites statewide in Arizona at which Chiricahua leopard frogs occur or are likely to occur in the wild, with additional four captive or partially captive refugia sites. Breeding populations are found in at
least 33 of the Arizona sites. In New Mexico, only 15 to 23 breeding sites were known in 2008; the frogs occur at additional dispersal sites. The species has been extirpated from about 80 percent of its historical localities in Arizona and New Mexico. In Mexico, nineteen and eight localities are known from Sonora and Chihuahua, respectively. Some threats, such as introduced nonnative predators and the threat of catastrophic wildfire, appear to be less important south of the border, particularly in the mountains where Chiricahua leopard frogs have been found (Rosen and Melendez 2006; Rorabaugh 2008).

The Chiricahua leopard frog coexists with grazing activities at most sites where it is found. Stock tanks constructed as water sources for livestock are important habitats for the Chiricahua leopard frog, particularly in Arizona (Sredl and Saylor 1998; Sredl and Jennings 2005). In some areas, stock tanks replaced natural springs and ciéneas or were developed at spring headwaters or ciéneas and now provide the only suitable habitat available to the Chiricahua leopard frog. For these reasons, there is a high probability that the Chiricahua leopard frog would be extirpated from many more areas if ranchers had not built and maintained stock tanks for livestock production (USFWS 2007a).

The primary threats to this species are predation by nonnative species and die-offs caused by the fungal skin disease, chytridiomycosis (Bd) (Berger et al. 1998; Longcore et al. 1999). Additional threats include: drought, floods, habitat loss and degradation from water diversions and groundwater pumping, improper livestock management, altered fire regimes, mining, development, and other human activities (USFWS 2007a).

Loach Minnow and Its Critical Habitat
Loach minnow was originally listed as a threatened species on October 28, 1986 (USFWS 1986a) and was reclassified as an endangered species on February 23, 2012 (USFWS 2012b). Critical habitat has been designated (USFWS 1994) and re-designated (USFWS 2000, USFWS 2007b) in response to legal concerns and policy changes. The current critical habitat designation was published simultaneously with the reclassification of loach minnow to endangered status on February 23, 2012 (USFWS 2012b).

The limited taxonomic and genetic data available for loach minnow indicate there are substantial differences in morphology and genetic makeup between remnant loach minnow populations. Tibbets (1993) concluded that variation for loach minnow follows drainage patterns, suggesting little gene flow among rivers. Genetic difference between the mitochondrial DNA (mtDNA) and allozyme data was that mtDNA suggest that the San Francisco/Blue and Gila groups of loach minnow are separate, while the allozyme data places the Gila group within the San Francisco/Blue group. Tibbets (1993) concluded that the level of divergence in both allozyme and mtDNA data indicated that all three main populations (Aravaipa Creek, Blue/San Francisco Rivers, and Gila River) were historically isolated and represent evolutionarily distinct lineages. 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; Propst and Bestgen 1991; Rinne 1989). It is rare or absent from habitats where fine sediments fill the interstitial spaces (Propst and Bestgen 1991). Loach minnow feeds exclusively on aquatic insects (Schreiber 1978). 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.

Loach minnow are believed to occupy approximately 15 to 20 percent of their historical range, and are now restricted to portions of the Gila River and its tributaries, the West, Middle, and East Fork Gila River (Grant, Catron, and Hidalgo Counties, New Mexico) (Paroz and Propst 2007; Propst 2007; Propst et al. 2009); the San Francisco and Tularosa rivers and their tributaries Negrito and Whitewater creeks (Catron County, New Mexico) (Propst et al. 1988; Paroz and Propst 2007; Propst 2007); the Blue River and its tributaries Dry Blue, Campbell Blue, Pace, and Frieborn creeks (Greenlee County, Arizona and Catron County, New Mexico) (Carter 2005; Clarkson et al. 2008); Aravaipa Creek and its tributaries Turkey and Deer creeks (Graham and Pinal Counties, Arizona) (Stefferud and Reinhthal 2005); Eagle Creek (Graham and Greenlee Counties, Arizona), (Knowles 1994); and the North Fork East Fork Black River (Apache and Greenlee Counties, Arizona) Robinson et al. 2009a); and possibly the White River and its tributaries, the East and North Fork White River (Apache, Gila, and Navajo Counties, Arizona). Loach minnow have recently been placed in additional streams as part of the recovery efforts for the species. In 2007, loach minnow were translocated into Hot Springs Canyon, in Cochise County, Arizona, and Redfield Canyon, in Cochise and Pima Counties, Arizona, and these streams were subsequently augmented (Robinson 2008a; Robinson et al.2013a). Both Hot Springs and Redfield canyons are tributaries to the San Pedro River. Augmentation efforts have been suspended in Redfield Canyon due to drought and a lack of adequate flowing water. Augmentation efforts have been suspended at Hot Springs Canyon to allow managers to better evaluate if recruitment of loach minnow is occurring without further augmentation. Monitoring will continue at this site, and future augmentations may occur if needed.

In 2007, loach minnow were translocated into Fossil Creek, within the Verde River subbasin (Carter 2007), with additional fish added in 2008, 2010, and 2011 (Carter 2007; Robinson 2009; T. Robinson, AGFD, pers. comm. 2011, Love-Chezem et al. 2015). As of this date, loach minnow have not yet become self-sustaining in Fossil Creek. In 2008, loach minnow were translocated into lower Bonita Creek, a tributary to the Gila River in Graham County, Arizona (H. Blasius BLM, pers. comm.2008; T. Robinson, AGFD, pers. comm. 2008b). Lower Bonita Creek augmentations have been temporarily suspended due to re-invasion by nonnative species above the fish barrier. In 2014, loach minnow were translocated to upper Bonita Creek. Monitoring at each of this site is ongoing; however, insufficient time has elapsed to allow us to determine if this translocation effort will ultimately be successful and result in establishment of new population of loach minnow in Bonita Creek.

Critical Habitat
The loach minnow critical habitat designation includes eight units based on river subbasins, including the Verde River, Salt River, San Pedro, Bonita Creek, Eagle Creek, San Francisco River, Blue River, and Gila River subbasins. The PCEs for loach minnow critical habitat are as follows:
**PCE 1**: Habitat to support all egg, larval, juvenile, and adult loach minnow which includes:

*PCE 1a.* Perennial flows with a stream depth of generally less than 1 meter (3.3 feet), and with slow to swift flow velocities between 0 and 80 centimeters per second (0.0 and 31.5 inches per second).

*PCE 1b.* Appropriate microhabitat types including pools, runs, riffles, and rapids over sand, gravel, cobble, and rubble substrates with low or moderate amounts of fine sediment and substrate embeddedness.

*PCE 1c.* Appropriate stream habitats with a low stream gradient of less than 2.5 percent and are at elevations below 2,500 meters (8,202 feet).

*PCE 1d.* Water temperatures in the general range of 8.0 to 25.0 °Celsius (46.4 to 77 °Fahrenheit).

**PCE 2**: An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddisflies, stoneflies, and dragonflies.

**PCE 3**: Streams with no or no more than low levels of pollutants.

**PCE 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.

**PCE 5**: No nonnative aquatic species or levels of nonnative aquatic species that is sufficiently low to allow persistence of loach minnow.

**PCE 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.

**Spikedace and its Critical Habitat**

Spikedace was originally listed as a threatened species on July 1, 1986 (USFWS 1986b), and was reclassified as an endangered species on February 23, 2012 (USFWS 2012b). Critical habitat was originally designated on March 8, 1994 (USFWS 1994), then re-designated on April 25, 2000 (USFWS 2000) and March 21, 2007 (USFWS 2007b) in response to legal concerns and policy changes. The current critical habitat designation was published simultaneously with the reclassification of spikedace to endangered status on February 23, 2012 (USFWS 2012b).

Spikedace live in flowing water with slow to moderate velocities over sand, gravel, and cobble substrates (Propst et al. 1986; Rinne and Kroeger 1988). Spikedace spawns from March through May with some yearly and geographic variation (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. It feeds primarily on aquatic and terrestrial insects (Schreiber 1978; Marsh et al. 1989).

The spikedace was once common throughout much of the Gila River basin, including the mainstem Gila River upstream of Phoenix, and the Verde, Agua Fria, Salt, San Pedro, and San Francisco subbasins. Habitat destruction and competition and predation by nonnative aquatic species reduced its range and abundance (Miller 1961; Propst et al. 1986). Spikedace are now restricted to portions of the upper Gila River (Grant, Catron, and Hidalgo Counties, New Mexico); Aravaipa Creek (Graham and Pinal Counties, Arizona); Eagle Creek (Graham and Greenlee Counties, Arizona); and the Verde River (Yavapai County, Arizona) (Marsh et al. 1990; Stefferud and Reinthal 2005; Propst 2007).
Spikedace have recently been placed in additional streams as part of the recovery efforts for the species. In 2007, spikedace were translocated into Hot Springs Canyon, in Cochise County, Arizona, and Redfield Canyon, in Cochise and Pima Counties, Arizona, and these streams were subsequently augmented (Robinson 2008a; Robinson et al. 2013a). Both Hot Springs and Redfield canyons are tributaries to the San Pedro River. Augmentation efforts have been suspended in Redfield Canyon due to drought and a lack of adequate flowing water. Augmentation efforts have been suspended at Hot Springs Canyon to allow managers to better evaluate if recruitment of loach minnow is occurring without further augmentation. Monitoring will continue at this site, and future augmentations may occur if needed.

Spikedace were also translocated into Fossil Creek, a tributary to the Verde River in Gila County, Arizona, in 2007, and were subsequently augmented in 2008, 2011, and 2012 (Carter 2007; Carter 2008; Robinson 2009; Robinson 2011b, Love-Chezem et al. 2015). Spikedace continue to be detected in Fossil Creek (Robinson et al. 2014).

In 2008, spikedace were translocated into Bonita Creek, a tributary to the Gila River in Graham County, Arizona (H. Blasius, BLM, pers. comm. 2008; Robinson et al. 2009b), and were repatriated to the upper San Francisco River in Catron County, New Mexico (D. Propst, NMDGF pers. comm. 2010). Augmentations at Bonita Creek have been temporarily suspended due to re-invasion by nonnative species above the fish barrier. Spikedace were also translocated to the San Francisco River in New Mexico in 2008; however, augmentation and monitoring has not been completed to date. Spikedace were also translocated into the Blue River in 2012, and remain present in the stream (Robinson et al. 2013b). Insufficient time has elapsed to allow us to determine if this translocation effort will ultimately be successful and result in establishment of new population of spikedace, but initial signs are positive.

Spikedace is common only in Aravaipa Creek in Arizona (P. Reinthal University of Arizona, pers. comm. 2011) and one section of the Gila River south of Cliff, New Mexico (Propst et al. 2009). The Verde River is presumed occupied; however, the last captured fish from this river was from a 1999 survey (M. Brouder, 2002, pers. comm. 2002). Spikedace from the Eagle Creek population have not been seen for over a decade, although they are still thought to exist in numbers too low for the sampling efforts to detect (Carter et al. 2007; see Minckley and Marsh 2009). The Middle Fork Gila River (Arizona) population is thought to be very small and has not been seen since 1991 (Jakle 1992), but sampling is localized and inadequate to detect a sparse population.

Critical Habitat

The spikedace critical habitat designation includes eight units based on river subbasins, including the Verde River, Salt River, San Pedro, Bonita Creek, Eagle Creek, San Francisco River, Blue River, and Gila River subbasins. The PCEs for spikedace critical habitat are as follows:

PCE 1: Habitat to support all egg, larval, juvenile, and adult spikedace, which includes:

PCE 1a: Perennial flows with a stream depth generally less than 1 meter (3.3 feet), and with slow to swift flow velocities between 5 and 80 centimeters per second (1.9 and 31.5 inches per second).
PCE 1b. Appropriate stream microhabitat types including glides, runs, riffles, and 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.

PCE 1c. Appropriate stream habitat with a low gradient of less than approximately 1.0 percent, at elevations below 2,100 meters (6,890 feet).

PCE 1d. Water temperatures in the general range of 8.0 to 28.0 °Celsius (46.4 to 82.4 °Fahrenheit).

PCE 2: An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddisflies, stoneflies, and dragonflies.

PCE 3: Streams with no or no more than low levels of pollutants.

PCE 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.

PCE 5: No nonnative aquatic species or levels of nonnative aquatic species that are sufficiently low as to allow persistence of spikedace.

PCE 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.

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.

Long-term trend monitoring data of range condition on the three pastures that drain into the Blue River was last collected in 1999 (Table 3) (USFS 2016; Table 6). Subsequent site visits by Forest Service staff in 2010 and 2013 confirmed the same range conditions as described in 1999 (USFS 2016).

Table 3. Range condition (Percent) for pastures draining into the Blue River, Wildbunch Allotment.

<table>
<thead>
<tr>
<th>Pasture</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southwest</td>
<td>3.7</td>
<td>81</td>
<td>15</td>
<td>0.3</td>
</tr>
<tr>
<td>Mud Springs</td>
<td>65</td>
<td>35</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>North/Joe Fritz</td>
<td>0</td>
<td>89</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

There are four drainages on the WBA that flow into the loach minnow and spikedace habitat on the Blue River (Wildbunch and Mud Springs canyons converge together immediately above their confluence with the Blue River). There are numerous ephemeral tributaries in each of these four drainages. The ASNFs assessed these drainages to determine their functionality in 1999 (USFS 2016).
Including tributaries, there are approximately 7.8 miles of drainages within the Wildbunch Canyon watershed. Wildbunch Canyon in the North Fritz and Mud Springs pastures was rated as being in proper functioning condition in the upper 2.0 miles and lower 2.5 miles. The intermediate 2.2 mile reach was rated as nonfunctioning.

Including tributaries, there are approximately 7.6 miles of drainages in the Mud Springs Canyon watershed. Mud Springs Canyon in the North Fritz and Mud Springs pastures was rated as being in proper functioning condition for the two miles upstream its confluence with the Blue River. The remaining 3.5 miles, most of which are located in the Mud Springs Pasture, were rated as non-functioning.

Including tributaries, there are approximately 20.2 miles of drainages in the Cienega Creek watershed. The upper- and lower-most reaches of Cienega Creek in the Southwest Pasture were rated as being in proper functioning condition. The intermediate reaches were rated as either non-functioning or functional-at-risk (upward or downward trend was not apparent). The BA stated that watershed conditions were affecting the current riparian condition in Cienega Creek.

Including tributaries, there are 8 miles of drainages in the Salt Ground Canyon watershed. Salt Ground Canyon in the Southwest Pasture was rated as being in proper functioning condition for 0.4 mile upstream from its confluence with the Blue River. The remaining upstream reaches were not assessed.

Including tributaries, there are 8 miles of drainages in the White Basin Canyon watershed. White Basin Canyon in the Southwest Pasture was rated as being in proper functioning condition for 0.4 mile upstream from its confluence with the Blue River. The next 0.6 mile was rated as functional at risk. The remaining 1.3 miles were not assessed.

The remaining large drainages, located on the southern portion of the WBA, within the Southwest, Southeast, and Indian pastures, flow into the San Francisco River.

Status of the Chiricahua Leopard Frog in the Action Area
Chiricahua leopard frogs were noted on the main stem of the Blue River in the 1970s and 1980s (USFWS 2007a). The most recent record may be of a leopard frog found one mile north of the WBA at the Fritz Canyon and Blue River confluence in 1994 (USFS 2016). There are approximately 12.5 miles of historical frog habitat along the San Francisco River, all of which is excluded from livestock use. Chiricahua leopard frogs were last documented in the San Francisco River in Arizona approximately 110 miles upstream of the Wildbunch Allotment near the Town of Alpine, Arizona in 1974 (C. Aikins, AGFD, pers. comm. 2015). Chiricahua leopard frogs are not known to occupy the WBA outside of the Blue and San Francisco rivers (C. Aikins, AGFD, pers. comm. 2016).

Factors Affecting the Chiricahua Leopard Frog in the Action Area

Drought is problematic in the action area because all potentially-occupied stock tanks are currently fed only by rainfall and risk drying during times of extended drought. Much of the
action area is very remote so that efforts to decrease drying of tanks, such as installing geotextile liners or drilling wells, are expensive and difficult to implement.

Although disease has not been detected in the action area, lowland leopard frogs have recently tested positive for chytridiomycosis (Bd) in Dix Creek to the northeast of the action area. Chytridiomycosis (Bd) is also prevalent in New Mexico east of the action area (USFWS 2012a).

**Status of Spikedace and Loach Minnow in the Action Area**

Spikedace are found in the Blue River from the Blue Box (a natural barrier waterfall) downstream to the confluence with the San Francisco River. Spikedace did not occupy the Blue River until 2012 after stockings had occurred between the Juan Miller Crossing downstream to the Blue River fish barrier (USFS 2016).

Loach minnow are found in the Blue River throughout the Action Area. The Arizona Game and Fish Department (AGFD) began annual surveys as part of monitoring for the Blue River barrier and its associated native fish restoration. The Blue River barrier is located adjacent to the South Pasture on the WBA. Recent annual surveys have shown a decrease in loach minnow numbers throughout the system, particularly after the 2011 Wallow Fire. One post-Wallow Fire loach minnow stocking occurred above the Blue River barrier.

**Status of Spikedace and Loach Minnow Critical Habitat in the Action Area**

Loach minnow and spikedace critical habitat includes the following:

- **Blue River Sub-basin Unit 7** - The mainstem Blue River for approximately 51.1 miles from the confluence with the San Francisco River upstream to the confluence of Campbell Blue and Dry Blue creeks (USFWS 2012b). Approximately 6.2 miles of the Blue River critical habitat, described above, occurs on the WBA action area.

- **San Francisco River Sub-Basin Unit 6** - The San Francisco River from its confluence with the Gila River upstream to the Tularosa River (in New Mexico). There are 9.5 miles of critical habitat along the WBA boundary. Critical habitat in the San Francisco River on the ASNFs is populated with numerous non-native fish species. There no populations of loach minnow or spikedace recorded in survey history or recovery efforts planned in the San Francisco River in the action area.

**Factors Affecting Spikedace and Loach Minnow and their Critical Habitat in the Action Area**

The primary threats in the planning area are nonnative fishes and crayfish that are predatory and/or competitive with the loach minnow and spikedace. The Juan Miller Crossing is the only road that crosses loach minnow and spikedace habitat in the Blue River in the Action Area. Road density on the WBA is low; therefore, we anticipate that impacts from roads are primarily limited to sedimentation and maintenance. Loach minnow and spikedace habitat in the Blue River is protected from livestock grazing by fences or from limited accessibility due to steep terrain.
EFFECTS OF THE PROPOSED ACTION

Effects of the proposed action refers 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, which 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.

Chiricahua Leopard Frog
We are not reasonably certain that the proposed action will affect the Chiricahua leopard frog. It is not currently known to occupy the proposed action area. It has not been documented in the interior of the WBA or in the Blue and San Francisco rivers reaches adjacent to the allotment. Potential habitat for Chiricahua leopard frogs exists along 12.5 miles of the San Francisco River, if the nonnative predators were removed. This habitat is excluded from livestock grazing.

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 BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation following section 7 of the Act. There are no Chiricahua leopard frogs known to occur in the action area to be affected by cumulative effects.

CONCLUSION
After reviewing the current Chiricahua leopards frog status, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the endangered Chiricahua leopard frog.

Spikedace and Loach Minnow and their Critical Habitats
The proposed action is not expected to directly affect loach minnow and spikedace in the Blue River. Livestock are excluded from the Blue River except when they are trailered across the river, twice a year, at the Juan Miller Crossing road. This road provides access to a private land parcel located in the Little Pasture. Livestock trailering, as part of the proposed action, will not significantly increase use of this road as compared to existing use. Livestock swim across the river at the road crossing if the flow is too high for trailer use. We do not expect adverse effects from livestock crossing the river as such during high flow events. The road crossing is not likely to be supporting loach minnow or spikedace spawning sites because it is used to access private land and other portions of the Wildbunch Allotment on a regular basis.

The BA cites that streams and uplands that drain from the WBA into the Blue and San Francisco rivers are currently degraded, incised, and are not trapping fine sediment during flow events. There are approximately 50 miles of drainage ways that are likely transporting sediment
downstream into loach minnow and spikedace habitats in the Blue River. The majority, 37 miles, are located in the Southwest Pasture. These ephemeral drainages are expected to transport high sediment quantities. The lack of bed surface armoring (larger substrate covering finer substrate as seen in perennial flowing streams) allows the mobilization of large amounts of fine sediment during infrequent flow events (Reid et al. 1998). We expect sediment to be transported during flash flood events in these ephemeral drainages into listed fish habitat in the Blue River. Fine sediment deposition may be excessive, above what would normally be transported, as a result of the proposed action given baseline conditions described in the BA. We would expect this to result in adverse effects to these two species if the excess sediment levels rise to a level that affects loach minnow and spikedace egg survival and decrease aquatic macroinvertebrate production which is an important forage resource for these two fish species. The proposed action implements adaptive management options to attain improved range conditions on the Wildbunch Allotment. In the future, if fully implemented, these options would improve upland conditions and reduce any ongoing adverse effects that may be occurring as a result of the proposed action.

Excessive sediment may also affect loach minnow and spikedace critical habitats in the Blue and San Francisco rivers. Both species' critical habitats designations included PCEs that address excessive sediment. In particular, PCE 1b describes important microhabitats with low or moderate amounts of fine sediment and substrate embeddedness. In addition, excessive sedimentation directly affects PCE 2, which describes an abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddisflies, stoneflies, and dragonflies. Excessive sediment embeddedness reduces habitat quality for these important aquatic insects.

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 BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation following section 7 of the Act. There are private parcels along the San Francisco River in the proposed action area. It is unknown whether there are non-Federal actions, such as agricultural diversions and livestock grazing, occurring on these lands that may affect loach minnow and spikedace and their critical habitats in the Blue and San Francisco rivers.

CONCLUSION

After reviewing the current loach minnow and spikedace status, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of these species or destroy or adversely modify their critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation 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 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.

AMOUNT OR EXTENT OF TAKE

Chiricahua Leopard Frog
We are not reasonably certain that the proposed action will result in incidental take of the Chiricahua leopard frog. It is not currently known to occupy the proposed action area. It has not been documented in the interior of the WBA or in the Blue and San Francisco rivers reaches adjacent to the allotment. If Chiricahua leopard frogs are eventually detected on the WBA, consultation shall be re-initiated to determine if the proposed action will affect the species.

Spikedace and Loach Minnow
We anticipate that incidental take of loach minnow and spikedace may occur given baseline conditions combined with the indirect effects of grazing and the subsequent adverse effects to their habitats in the Blue River. Proper functioning condition (PFC) assessments were done for all major tributaries to the Blue River on the Wildbunch Allotment (USFS 2015). Reaches immediately upstream of the Blue River were all rated as being in PFC. Numerous reaches upstream of those in PFC were rated either functional-at-risk or non-functional. These were located in Wildbunch Canyon (North Pasture), Mud Spring Canyon (North and Mud Springs pastures), and Cienega Creek (South Pasture). The proposed action includes adaptive management strategies to improve range conditions within these pastures; in particular to maintain or improve herbaceous groundcover to reduce sediment transport into perennial streams on the allotment. In the interim period, there may be short-term adverse effects if the current conditions are contributing excessive sediment into listed fish habitat.

The BA states that excessive sediment, as a result of current upland and riparian conditions (degraded, incised channels that lack floodplains to trap sediment), is being deposited into loach minnow and spikedace habitat on the Blue River. This is based upon riparian assessments that were done in 1999. The new Framework for Streamlining Consultation on Livestock Grazing Activities, which guides the Forest Service in making effects determinations for selected threatened, endangered and proposed species, states that range and watershed data should be less than 10 years old (USFS 2015). Range and watershed data used in the BA is 17 years old. The BA did not ascertain if this older data was verified by resource specialists, other than by two visual inspections to ensure that the information represents the current conditions. This excessive sediment is expected to result in incidental take in the form of harm, in that habitat will continue to be modified or degraded in such a way as to result in death or injury by significantly impairing
essential behavioral patterns such as breeding, feeding, and sheltering. The Service anticipates incidental take of loach minnow and spikedace will be difficult to detect for the following reasons: (1) due to the inherent biological characteristics of aquatic species, the likelihood of discovering an individual death or other taking attributable to grazing is small; the small body size, behavioral modification before death, presence of aquatic vegetation, stream flow, and rapid rates of decomposition make finding an incidentally taken individual fish extremely unlikely; effects of the proposed management such as allotment management plans are largely unquantifiable in the short term, and may only be measurable as long-term effects on the species habitat or population levels; and the best scientific and commercial data available are not sufficient to estimate a specific amount of incidental take of the species themselves. Therefore, the Service defines incidental take in terms of habitat conditions, and uses surrogate measures to identify when take has been exceeded.

We expect the proposed action would result in improved range and riparian conditions if adaptive management strategies are implemented. However, given the environmental baseline and range and riparian conditions described in the BA, we anticipate that take will continue to occur throughout those portions of the Blue River and its major tributaries within the WBA as a result of the proposed action. These may occur until sufficient time has elapsed to allow range and riparian conditions on the affected pastures to improve from changes in management described in the proposed action. The BA describes adaptive management strategies that will be implemented if the proposed action is ineffective in meeting allowable forage use levels needed to maintain or improve herbaceous groundcover for greater stream bank stability or reduced sediment transport into the Blue River. The anticipated level of incidental take of loach minnow and spikedace from the proposed action will be exceeded if any of the following conditions occur:

- If livestock access the Blue River corridor outside of the managed crossings at Juan Miller Crossing and are not immediately removed, and there are additional adverse effects not anticipated in this document.
- Forage use objectives are exceeded and there is an accompanying documented loss of ground cover (live plants and/or litter), and if upland channel instability occurs.

**REASONABLE AND PRUDENT MEASURES**

The following reasonable and prudent measure is necessary and appropriate to minimize the effects of take of loach minnow and spikedace.

1. The ASNFs shall protect the riverine and riparian habitat from significant livestock grazing and effects from livestock crossing of the Blue River.

**TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, the ASNFs must comply with the following term and condition, which implement the reasonable and prudent measure described above and outline required reporting/monitoring requirements. This term and condition is non-discretionary.
The following term and condition is necessary to implement reasonable and prudent measure 1:

1.1 The ASNFs shall ensure that allotment and pasture fences are maintained to ensure that cattle are not using the Blue River for forage or watering. If fences are found to be damaged they shall be immediately repaired. If livestock are found in the Blue River they will be immediately removed.

We are not issuing any reasonable and prudent measures or associated terms and conditions to address excessive sediment transport into loach minnow and spikedace habitat. The proposed action incorporates an adaptive management strategy which directs future management options that are needed to meet desired range conditions, which include maintaining or improving herbaceous ground cover to maintain or stabilize stream banks and reduce sediment transport into perennial systems, such as loach minnow and spikedace occupied reaches in the Blue River. This strategy will be implemented if annual monitoring indicates that current management is not meeting or progressing towards resource objectives. If monitoring indicates that current management is not progressing towards these resource objectives, then livestock management would be adjusted as described for each pasture in the BA and reinitiation of consultation may be required.

Disposition of Dead or Injured Listed Species
Upon locating a dead, injured, or sick listed species initial notification must be made to the USFWS’s Law Enforcement Office, 4901 Paseo del Norte NE, Suite D, Albuquerque, New Mexico, 87113, telephone (505) 248-7889, within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to the AESO. Care must be taken in handling sick or injured animals to ensure effective treatment and in handling dead specimens to preserve the biological material in the best possible state. If possible, the remains of intact species shall be provided to the AESO. If the remains of the species are not intact or are not collected, the information noted above shall be obtained and the carcass left in place. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should the treated species survive, contact our office regarding the final disposition of the animal.

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.

1. We recommend that the ASNFs work with the Service and AGFD to reintroduce or translocate Chiricahua leopard frog into suitable habitats identified through habitat assessment and surveys conducted throughout the range of the frog on the ASNFs.
2. We recommend the ASNFs work with the Service and the AGFD to continue to control nonnative aquatic organisms on the Forest, particularly American bullfrogs, nonnative fish, and crayfish.

**REINITIATION STATEMENT**

This concludes the formal consultation on the Wildbunch Allotment. 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 maintained (or is authorized by law) and if: 1) new information reveals effects of the agency action that may adversely affect listed species in a manner or to an extent not considered in this opinion; 2) the proposed action is subsequently modified in a way that causes an effect to a listed species that was not considered in this opinion; 3) a new species is listed or critical habitat designated that may be affected by this action; or 4) incidental take is exceeded.

Thank you for your continued coordination. No further section 7 consultation is required for this project at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, these determinations may need to be reconsidered. We encourage you to continue coordinating with our office as monitoring data become available. We also encourage you to coordinate the review of this project with the AGFD. In all future correspondence on this project, please refer to the consultation number 02EAAZ00-2015-F-0849. Should you require further assistance or if you have any questions, please contact Dave Smith at (928) 556-2183 or Mary Richardson at (602) 242-0210.

Sincerely,

Steven L. Spangle
Field Supervisor

cc: Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ
    Regional Supervisor, Region I, Arizona Game and Fish Department, Pinetop, AZ
    Wildlife Biologists, U.S. Fish and Wildlife Service, Phoenix, Flagstaff, Tucson, AZ
    (Attn: Mary Richardson, Shaula Hedwall, Susan Sferra, Jeff Servoss, and Cat Crawford)
LITERATURE CITED

Aikins, C. 2015. September 21, 2015 email transmission from C. Aikens (Arizona Game and Fish Department) to D. Smith (U.S. Fish and Wildlife Service) Re: Leopard frog location information on the San Francisco River.

Aikins, C. 2016. May 27, 2016 email transmission from C. Aikens (Arizona Game and Fish Department) to D. Smith (U.S. Fish and Wildlife Service) Re: Leopard frog location information on the Wildbunch Allotment.


Propst, D. 2010. February 8, 2010, email transmission from D. Propst, New Mexico Department of Game and Fish, to M. Richardson, (U.S. Fish and Wildlife Service) Re: San Francisco River spikedace.


Reinthal, P. 2011. October 17, 2011, email transmission from Peter Reinthal, University of Arizona to Mary Richardson (U.S. Fish and Wildlife Service) Re: Fall 2011 survey data.


Robinson, A. 2008b. October 16, 2008, email transmission from T. Robinson, Arizona Game and Fish Department, to M. Richardson (U.S. Fish and Wildlife Service) Re: Bonita – The Natives Have Been Returned!


APPENDIX A. CONCURRENCES

Mexican Spotted Owl and its Critical Habitat
We concur with your determination that the proposed action may affect, but is not likely to adversely affect the Mexican spotted owl and its critical habitat for the following reasons:

- There are no protected activity centers in the WBA.
- Forage utilization will be maintained at conservative levels through minimum stocking rates and pastures being rested every other year.
- Stubble height in high elevation mesic meadows will be maintained at 6 to 8 inches (as opposed to the minimum recommendation of 4.5 inches) in order to maintain cover for the Mexican spotted owl’s primary prey species.
- Riparian habitat occurs only within the Blue and San Francisco rivers. These areas are excluded from livestock grazing as part of the proposed action.

Southwestern Willow Flycatcher and its Critical Habitat
We concur with your determination that the proposed action may affect, but is not likely to adversely affect the southwestern willow flycatcher and its critical habitat for the following reasons:

- Southwestern willow flycatchers have not been detected breeding in the Action Area.
- The portions of the San Francisco River bordering this allotment which are designated as critical habitat for willow flycatchers are excluded from livestock grazing by fencing and steep topography.

Yellow-billed Cuckoo Proposed Critical Habitat
We concur with your determination that the proposed action may affect, but is not likely to adversely affect the yellow-billed cuckoo or adversely modify its proposed critical habitat for the following reasons:

- Yellow-billed cuckoos have not been detected breeding in the Action Area.
- The portions of the San Francisco River bordering this allotment which are proposed as designated as critical habitat for yellow-billed cuckoos are excluded from livestock grazing by fencing and steep topography.

Narrow-headed Gartersnake and its Proposed Critical Habitat
We concur with your determination that the proposed action may affect, but is not likely to adversely affect the narrow-headed gartersnake or its proposed critical habitat for the following reasons:

Livestock are excluded from narrow-headed gartersnake habitat and proposed critical habitat on the Blue and San Francisco rivers adjacent to this allotment by fencing and steep topography. This includes the lateral extent (600 feet from river centerline) of proposed critical habitat. Both
rivers are located in canyons; the full lateral extent of proposed critical habitat includes canyon walls which are inaccessible to livestock.

There is an abundant food base for the gartersnake in the action area. AGFD performed native fish surveys on the Blue River along its entire length adjacent to the Wildbunch Allotment in 2014 and 2015 (Robinson, A. and T. Love-Chezem 2014 and 2015). They documented large native fish populations. This included longfin dace (*Agosia chrysogaster*), speckled dace (*Rhinichthys osculus*), Sonoran sucker (*Catastomus insignis*), and desert sucker (*Pantosteus clarki*). The proposed PCE concerning adequate forage base for gartersnakes would not be adversely affected by the proposed action.
APPENDIX B. MAPS