March 16, 2020

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Dear Messrs. Bernhardt, Perdue, Humphrey, Bosworth and Deiter, and Mses. Christiansen, Kohrman, West, Skipwith, and Lueders,


The U.S. Department of Agriculture Secretary, U.S. Forest Service Chief, Forest Service Southwest Region Regional Forester, Coconino, Prescott, and Tonto National Forest Supervisors, the U.S. Secretary of the Interior, U.S. Fish and Wildlife Service Director, Region 2 Director, and Arizona Ecological Services Director are hereby notified that the Center for Biological Diversity intends to file suit, pursuant to the citizen suit provision of the Endangered Species Act (“ESA”), 16 U.S.C. § 1540(g), and the Administrative Procedure Act (“APA”), 5 U.S.C. §§ 701-706, to compel the reinitiation of ESA Section 7 consultation¹ to remedy Forest Service activities jeopardizing the Verde River and the endangered species that represent and depend on the Verde River for survival and recovery.

EXECUTIVE SUMMARY

In this Notice, in the attached report, "Ravaged River: Cattle Damage to Endangered Species Habitat in Arizona's Verde River Watershed" and in the attached documentary image and data files² (collectively, "Center (2020)")¹, we document widespread destruction of Verde River drainage riparian habitat by cattle, horses and burros. This Notice, and Center (2020) document violations of law and wanton disregard for U.S. Fish and Wildlife Service ("USFWS") Biological Opinions for 20 U.S. Forest Service grazing allotments on the Coconino, Prescott and Tonto National Forests.

The allotments at issue here are the Windmill West, Beaver Creek, Apache Maid, Walker Basin, Hackberry/Pivot Rock, Ike's Backbone, and Fossil Creek on the Coconino National Forest; the Muldoon, West Bear/Del Rio, China Dam, Sand Flat, Perkinsville, Horseshoe, Antelope Hills, and Brown Springs allotments on the Prescott National Forest; and the Skeleton Ridge, Deadman Mesa, Cedar Bench, Bull Springs, and Red Creek allotments on the Tonto National Forest.

Riparian cottonwood/willow forest is the rarest forest type in North America.³ Surviving riparian vegetation associated with a perennial stream comprises only approximately 0.4% of the total land area in the State of Arizona.⁴

¹ 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).
⁴ Arizona Riparian Inventory and Mapping Project, Arizona Game and Fish Department, December 1, 1993.
Regarding riparian habitat, Region 3 Forest Service's August 24, 2018, Southwestern Region Riparian and Aquatic Ecosystem Strategy says,

"Rivers and streambeds are conduits for life. In no other ecosystem can we as an agency have a greater impact in "Caring for the land and serving people." Protection and enhancement of riparian and enhancement of riparian and aquatic areas is paramount in providing habitat and sustainable water for dependent fish, wildlife, plant species, and human communities alike. ..."6

The overarching goal of this strategy is to ensure that the ecological integrity of riparian and aquatic habitats is maintained and/or restored."7

We have recently documented chronic and widespread Forest Service failure to protect riparian areas in spite of law and promises on the Apache-Sitgreaves National Forests on December 20188 and on June 27, 2019;9 on the Lincoln National Forest on September 13, 2019,10 on the Gila National Forest on January 20, 2020.11 With no substantive remedial response from the Forest Service and from the Apache-Sitgreaves and Gila NFs to our July 17, 2019, Notice of Intent to Sue ("NOI"),12 we were forced to file a lawsuit on January 13, 2020.13 With no substantive remedial response from the Forest Service and from the Apache-Sitgreaves NFs to our June 27, 2019, NOI,14

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7 Id., page 2.
8 "Rapid Assessment of Cattle Impacts in Riparian Exclosures of the Apache-Sitgreaves National Forest, Arizona, Prepared by the Center for Biological Diversity, December 2018.
9 Correspondence, from Robin Silver, M.D., Center for Biological Diversity; to Secretary of the Interior David Bernhardt, USFWS Principal Deputy Director Margaret Everson, USFWS Regional Director Amy Lueders, USFS Acting Chief Vicki Christiansen, Regional Forester Cal Joyner, and Apache-Sitgreaves National Forest Supervisor Steve Best; RE: Sixty-Day Notice of Endangered Species Act Violations, Apache-Sitgreaves National Forest; June 27, 2019.
10 Correspondence, from Robin Silver, M.D., Center for Biological Diversity; to Secretary of the Interior David Bernhardt, USFWS Principal Deputy Director Margaret Everson, USFWS Regional Director Amy Lueders, USFS Acting Chief Vicki Christiansen, Regional Forester Cal Joyner, and Lincoln National Forest Supervisor Travis Moseley; RE: Sixty-Day Notice of Endangered Species Act Violations, Lincoln National Forest; September 13, 2019.
12 Correspondence, from; to: Apache-Sitgreaves National Forests Supervisor Steve Best and Gila National Forest Supervisor Adam Mendonca, and others; from: Robin Silver, M.D., Center for Biological Diversity; RE: Sixty-day Notice of Intent to Sue for Violations of Endangered Species Act Consultation Requirements Regarding the Impacts of Domestic Livestock Grazing on Streamside and Aquatic Species and their Critical Habitat on National Forest Lands Within the Upper Gila River Watershed; July 17, 2019,
14 Correspondence, from Robin Silver, M.D., Center for Biological Diversity; to Secretary of the Interior David Bernhardt, USFWS Principal Deputy Director Margaret Everson, USFWS Regional Director Amy Lueders, USFS Acting Chief Vicki Christiansen, Regional Forester Cal Joyner, and Apache-Sitgreaves National Forest Supervisor Steve Best; RE: Sixty-Day Notice of Endangered Species Act Violations, Apache-Sitgreaves National Forest; June 27, 2019.
we were forced to file a lawsuit on February 20, 2020.\textsuperscript{15} With no substantive remedial response from the Forest Service and from the Lincoln NF to our September 13, 2019, NOI,\textsuperscript{16} we anticipate filing suit again in the immediate future.

Now, here in this Notice, we document the same Forest Service wanton disregard for our Public Land National Forest riparian areas on the Coconino, Prescott and Tonto National Forests. From May 30, 2019 to October 7, 2019, the Center surveyed 143.3 stream miles in the Verde River watershed in central Arizona on the Coconino, Prescott and Tonto National Forests. Our professional field biologists documented livestock grazing impacts to riparian vegetation, soils, and streambanks, and condition of exclosure fencing. Stream reaches were ranked with absent, light, moderate or significant grazing impacts. We observed widespread cattle grazing and occupancy in most surveyed stream reaches. Approximately 44\% of stream miles were ranked with moderate to significant grazing impacts (62.6 miles). Only 30\% of stream miles experienced no signs of cattle (42.9 miles). Only one of the total 22 allotments with riparian habitat in the watershed, Sears Club/Chalk Mountain on the Tonto National Forest, has not suffered livestock grazing damage. Cattle impacts, both feral and permitted, are most severe in the area of the confluences of the Verde and East Verde Rivers, the Verde River and Fossil Creek, and the reaches up and downstream from there. Fence condition was poor or was missing entirely in dozens of locations inspected across the study area.

Such widespread trespass grazing can only occur as the result of Forest Service personnel’s callous disregard for the protection of Public Lands riparian habitat, endangered species protection laws, Forest Plans, Wild and Scenic River values and plans, and USFWS Biological Opinion directions. Affected endangered species in the Verde watershed include, Gila Chub, Loach Minnow, Spikedace, Razorback Sucker, Gila Topminnow, Desert Pupfish, Woundfin, Colorado Pikeminnow, Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Mexican Spotted Owl, Chiricahua Leopard Frog, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.

In 1979, the Tonto, Prescott and Coconino National Forests produced the "Action Program for Resolution of Livestock-Riparian Conflicts on the Salt River and Verde River."\textsuperscript{17} This report states,

"The detrimental impacts of unrestricted livestock grazing on riparian vegetation in the Salt and Verde River stream courses have been recognized for many years. ...

However, lack of manpower essential for resource studies and management planning, shortage of funds for range structural facilities needed to implement sound

\textsuperscript{15} Complaint for Declaratory and Injunctive Relief, Center for Biological Diversity and Maricopa Audubon Society v. David Bernhardt, Secretary of the Interior, U.S. Fish and Wildlife Service; and U.S. Forest Service; Case 4:20-cv-00075-JCZ; February 20, 2020.
\textsuperscript{16} Correspondence, from Robin Silver, M.D., Center for Biological Diversity; to Secretary of the Interior David Bernhardt, USFWS Principal Deputy Director Margaret Everson, USFWS Regional Director Amy Lueders, USFS Acting Chief Vicki Christiansen, Regional Forester Cal Joyner, and Lincoln National Forest Supervisor Travis Moseley; RE: Sixty-Day Notice of Endangered Species Act Violations, Lincoln National Forest; September 13, 2019.
livestock management and the enormity of resource problems elsewhere have, in combination, resulted in some grazing allotments and portions of the rivers affected by those allotments, to date being managed under management regimes that are far behind the state of the art and science of range management. This inadequate management, when coupled with long-term overstocking problems on some allotments, has resulted in severe deterioration of not only the riparian plant communities but the range resource over the rest of the allotment as well.\textsuperscript{18} ... 

The Tonto, Coconino and Prescott National Forests began to recognize the importance of the riparian habitat along the Salt and Verde Rivers and elsewhere several years ago.

The Coconino National Forest made a detailed examination of the condition of the riparian communities along that segment of the Verde River in 1974. The condition of riparian communities was subjectively classified along the various reaches of the river and that information has subsequently been used in range management planning efforts.

The Prescott National Forest has fenced some areas along the Verde River in an effort to improve the riparian community.

Starting last year, the Tonto launched a program to inventory and classify the riparian communities found along all primary stream courses on the Forest. Complimentary biological data are being collected which will eventually lead to the ability to predict impacts on individual wildlife species and groups of species resulting from an action (positive or negative) directed at a riparian area.\textsuperscript{19} ...

Late in 1978, the Maricopa Audubon Society wrote the Tonto National Forest of that organization’s concern that eagle habitat is not being adequately protected and managed on the Salt and Verde Rivers and advised that Audubon was prepared to take legal action against U.S. Forest Service grazing policy, deemed to be in direct conflict with the Endangered Species Act.”\textsuperscript{20}

Little has changed since 1978.

\textsuperscript{18} Id., page 1.
\textsuperscript{19} Id., page 2.
\textsuperscript{20} Ibid.
We start with two images of Red Creek, a Verde River tributary on the Tonto National Forest:

May 9, 2005

© Robin Silver

June 14, 2019
The following summary table from Center (2020) is illustrative:
In Center (2020), we conclude,

"...extensive, and at times severe and pervasive cattle impacts to riparian wildlife habitat in 22 surveyed grazing allotments on the Prescott, Coconino, and Tonto National Forests. A combination of feral and unauthorized cattle and horses have damaged habitat for fourteen federally protected wildlife species, including eight with critical habitat on the Verde River and its tributaries. Trampled streambanks, diminished tree and shrub regeneration, overgrazed grasses and herbs, and impaired water quality are common impacts in all allotments except for the Sears Club/Chalk Mountain Allotment on the Tonto National Forest.

...Fence inspections suggest that range managers and livestock permittees are failing to maintain basic range infrastructure, consistent with many reports to the Forest Service from local conservationists."

The Forest Service and USFWS are in violation of the ESA for the following reasons:

(1) New information reveals that for the seven Biological Opinions for the 20 allotments at issue with Verde Watershed riparian areas, (1) effects of the actions are affecting federally protected endangered species survival, Recovery and Critical Habitat in a manner and an extent not previously considered, and (2) that the action (grazing) has been substantively and significantly modified for the Windmill West, Beaver Creek, Apache Maid, Walker Basin, Hackberry/Pivot Rock, Ike’s Backbone, and Fossil Creek allotments on the Coconino National Forest; the Muldoon, West Bear/Del Rio, China Dam, Sand Flat, Perkinsville, Horseshoe, Antelope Hills, and Brown Springs allotments on the Prescott National Forest; and the Skeleton Ridge, Deadman Mesa, Cedar Bench, Bull Springs, and Red Creek allotments on the Tonto National Forest. When such information becomes available, failure to reinitiate the consultation violates 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14.

The Biological Opinions that will need to be reinitiated include, the May 6, 2016, Biological Opinion21 which examines the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil Creek, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West allotments; the August 14, 2014, Biological Opinion22 which examines the

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21 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona the endangered Gila chub (Gila intermedia) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake (Thamnophis equestris intermedia) and its proposed critical habitat, proposed critical habitat for the threatened narrow-headed gartersnake (Thamnophis rufipunctatus), the threatened yellow-billed cuckoo (Coccyzus americanus), and the proposed threatened roundtail chub (Gila robusta) on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests); May 6, 2016.

22 Biological Opinion on (1) the possible effects of livestock grazing and management activities on the Windmill West Range Allotment (WWRA) located on the Red Rock Ranger and Flagstaff Ranger Districts, Coconino National Forest (NF) in Coconino and Yavapai Counties, Arizona; and (2) concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican spotted...
Windmill West Range Allotment; the February 28, 2002, Biological Opinion which examines the Deadman Mesa Allotment; the December 30, 2002, Biological Opinion which examines the Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio allotments; the June 25, 1997, Biological Opinion which examines the Skeleton Ridge Allotment; the September 8, 1995, Biological Opinion which examines the Cedar Bench Allotment; and the December 19, 2000, Biological Opinion which examines the Red Creek Allotment. Each of these seven Biological Opinions will need to be reinitiated. The Biological Opinion on the Bull Springs Allotment is nowhere to be found by Tonto NF and USFWS personnel; however, since this allotment is for sale to another grazing operation, its current very poor condition needs to be addressed prior to reinitiating any proposed future grazing permit. The Forest Service and USFWS have failed to reinitiate consultation for these allotments as required by law;
(2) Such widespread destruction of riparian habitat in the Verde Watershed would not have happened if the Forest Service were respecting its obligation to "carry out programs for the conservation" of listed species pursuant to 16 U.S.C. § 1536(a)(1).29 The Forest Service has failed and is failing to fulfill its duty to conserve endangered species and Critical Habitat.

(3) New species and Critical Habitat have been added to the federal Endangered Species since the production of six of the seven Biological Opinions applicable to the Verde Watershed riparian areas. When new species are added to the federal list and are affected by federal actions such as grazing on Forest Service land, the law requires that the Forest Service consults with USFWS to ensure that Forest Service's activities will not jeopardize survival and recovery of these species.30 The Forest Service and USFWS have not consulted on new listings on six of the seven applicable Biological Opinions to ensure that grazing will stop jeopardizing survival and recovery of these species.

On July 8, 2014, the Narrow-headed Gartersnake and the Northern Mexican Gartersnake were added to the federal list of endangered species.31 Proposed Critical Habitat for Narrow-headed Gartersnake and Northern Mexican Gartersnake was announced on July 10, 2013.32 On October 3, 2014, the Yellow-billed Cuckoo was added to the federal list of endangered species.33 In addition, since the August 14, 2014, Biological Opinion, on February 27, 2020, Critical Habitat has been proposed for Yellow-billed Cuckoo.34 The law requires that the Forest Service consult with USFWS on each allotment affecting these species with a Biological Opinion dated prior to these listings and Critical Habitat designations.;35

29 This provision imposes an "affirmative duty on each federal agency to conserve each of the species listed." Sierra Club v. Glickman, 156 F.3d 606,616 (5th Cir. 1998); accord Pyramid Lake Paiute Tribe of Indians v. Dep’t of the Navy, 898 F.2d 1410, 1416-17 (9th Cir. 1990) (noting that federal agencies have "affirmative obligations to conserve under [S]ection 7(a)(1)"). "Conserve" is defined by the Act to mean recovery, i.e., the "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter arc no longer necessary." 16 U.S.C. § 1536(a)(1). We have recently reaffirmed the obligation of all federal agencies to "carry out programs for the conservation" of listed species in Center for Biological Diversity, et al., v. Tom Vilsack, et al.
30 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).
33 Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus); Final Rule, Federal Register, Vol. 79, Page 59962, October 3, 2014.
34 Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.
35 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).
(4) Section 9 of the ESA and its implementing regulations prohibit the unauthorized “take” of any endangered species.36 Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions are required in a Biological Opinion if a "take" is anticipated.;37

No Incidental Take Statement is provided by the May 6, 2016, Biological Opinion38 which examines the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West allotments; the August 14, 2014, Biological Opinion39 which examines the Windmill West Range Allotment; the February 28, 2002, Biological Opinion40 which examines the Deadman Mesa Allotment; and the December 30, 2002, Biological Opinion41 which examines the Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio allotments.

38 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona the endangered Gila chub (Gila intermedia) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake (Thamnophis eues megalops) and its proposed critical habitat, proposed critical habitat for the threatened narrow-headed gartersnake (Thamnophis rufipunctatus), the threatened yellow-billed cuckoo (Coccyzus americanus), and the proposed threatened roundtail chub (Gila robusta) on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests); May 6, 2016.
39 Biological Opinion on (1) the possible effects of livestock grazing and management activities on the Windmill West Range Allotment (WWRA) located on the Red Rock Ranger and Flagstaff Ranger Districts, Coconino National Forest (NF) in Coconino and Yavapai Counties, Arizona; and (2) concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican spotted owl (Strix occidentalis lucida) and its critical habitat, southwestern willow flycatcher (Empidonax traillii extimus) and its critical habitat, the narrow-headed gartersnake (Thamnophis rufipunctatus) and its proposed critical habitat, the northern Mexican gartersnake (Thamnophis eues) and its proposed critical habitat, Colorado pikeminnow (Ptychocheilus lucius), razorback sucker (Xyracuchen texanus) and its critical habitat, spikedace (Meda fulgida) and its critical habitat, loach minnow (Tiaraga cobitis) and its critical habitat, Gila topminnow (Poeciliopsis occidentalis occidentalis), the proposed western yellow-billed cuckoo (Coccyzus americanus), and the candidate roundtail chub (Gila robusta); U.S. Fish and Wildlife Service, August 14, 2014.
40 Correspondence, from: USFWS Arizona Field Supervisor David L. Harlow; to: Tonto National Forest Supervisor Karl Siderits; RE: Biological Opinion for ongoing grazing management on 20 allotments on the Tonto National Forest on lesser long-nosed bat (Leptonycteris curasoae yerbabuenae), desert pupfish (Cyprinodon macularius), cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum), southwestern willow flycatcher (Empidonax traillii extimus), Mexican spotted owl (Strix occidentalis mexicana), bald eagle (Haliaeetus leucocephalus), Colorado pikeminnow (Ptychocheilus lucius), Woundfin (Plagopterus argentissimus), Arizona agave (Agave arizonica), Arizona hedgehog (Echinocereus triglochidatus) bonytail chub (Gila elegans), Gila topminnow (Poeciliopsis occidentalis occidentalis), spikedace with critical habitat, loach minnow with critical habitat, and the razorback sucker (Xyracuchen texanus); February 28, 2002.
41 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
The Incidental Take Statements for the June 25, 1997, Biological Opinion which examines the Skeleton Ridge Allotment; the September 8, 1995, Biological Opinion which examines the Cedar Bench Allotment; and the December 19, 2000, Biological Opinion which examines the Red Creek Allotment are not adequate.; and

(5) The Forest Service has violated and is in ongoing violation of Section 7(a)(1) of the ESA, where “all” federal agencies “shall, in consultation with and with the assistance of the [FWS], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered and threatened species,” as the Forest Service is preventing survival and Recovery by allowing the continued harm to Endangered Species and by allowing the continued destruction and adverse modification of Critical habitat, 16 U.S.C. § 1536(a)(1).

Under the current circumstances, compliance with the ESA requires, at a minimum that:

1. all livestock (cows, horses and burros) must be immediately removed from and prevented from further access into Verde Watershed riparian areas. Since the riparian damage is chronic as well as acute, grazing permits of the habitually non-compliant permittees must be immediately cancelled for failure to obey the Terms and Conditions of their permits;

2. the Forest Service must promptly embark on all necessary habitat restoration and rehabilitation activities to ensure that damaged Critical Habitat recovers and that the

42 Correspondence, from Sam F. Spiller, USFWS Arizona Field Supervisor, to: Mr. Charles Bazan, USDA Tonto National Forest Supervisor; RE: Biological Opinion "on the effects of livestock grazing on the subject allotments on the endangered razorback sucker (Xyrauchen texanus) and southwestern willow flycatcher (Empidonax traillii extimus), and the experimental non-essential population of Colorado squawfish (Ptychocheilus lucius) in the Verde River. Designated critical habitat for the razorback sucker in the Verde River is found within the action area as is proposed critical habitat for the southwestern willow flycatcher."; June 25, 1997.

43 Correspondence, from Sam F. Spiller, USFWS Arizona State Supervisor; to: Charles R. Bazan, USDA Forest Service Tonto National Forest Supervisor; RE: Biological Opinion on the effects for the Cedar Bench Allotment Management Plan on the razorback sucker (Xyrauchen texanus); September 8, 1995.

44 Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Delvin Lopez, Tonto National Forest Cave Creek Ranger District Ranger; RE: Biological Opinion based on review of proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (Empidonax traillii extimus), cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum), Gila topminnow (Poeciliopsis occidentalis occidentalis), and loach minnow (Rhinichthys cobitis); December 19, 2000.

45 The Forest Service says, Permit Terms and Conditions ... Grazing permits are subject to administrative actions such as partial or total suspension or cancellation for violations of terms and conditions of the permit ... Non-compliance can be directly related to specific terms and conditions of the term grazing permit or may be related to non-compliance with the AMP and/or AOI which is attached to and made a part of the term grazing permit." (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd589646.pdf) For example, for the Brown Springs allotment on the Prescott NF, the current (1975) Brown Springs Grazing Allotment Range Management Plan (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd559835.pdf) says, "Maintenance of Improvements ... Normal maintenance of range improvements is the permittee's responsibility and he will be expected to maintain them in good condition." The Brown Springs allotment December 11, 2018, 2019 Annual Operating Instructions (https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd611113.pdf) says, "RANGE IMPROVEMENTS ... Maintenance Range improvements assigned to you are to be fully maintained annually to comply with permit requirements."
survival and Recovery of federally protected endangered species are no longer thwarted;

(3) the Forest Service must undertake inspections and repair of all riparian exclosure fencing for every allotment in the Verde Watershed adjoining or including any riparian area and shall provide bi-monthly reports of these inspections and repairs for public review. In order to overcome the Forest Service culture of responsibility avoidance anonymity, these bi-monthly reports should clearly state the name of the individual and/or individuals responsible for the inspections and repairs and the resulting exclusion of livestock from the Watershed’s riparian areas.; and,

(4) the Forest Service and FWS must immediately reinitiate consultations on the May 6, 2016, Biological Opinion\textsuperscript{46} which examines the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West allotments; the August 14, 2014, Biological Opinion\textsuperscript{47} which examines the Windmill West Range Allotment; the February 28, 2002, Biological Opinion\textsuperscript{48} which examines the Deadman Mesa Allotment; the December 30, 2002, Biological Opinion\textsuperscript{49} which

\textsuperscript{46} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona the endangered Gila chub \textit{(Gila intermedia)} on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake \textit{(Thamnophis eues megalops)} and its proposed critical habitat, proposed critical habitat for the threatened narrow-headed gartersnake \textit{(Thamnophis rufipunctatus)}, the threatened yellow-billed cuckoo \textit{(Coccyzus americanus)}, and the proposed threatened roundtail chub \textit{(Gila robusta)} on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests); May 6, 2016.

\textsuperscript{47} Biological Opinion on (1) the possible effects of livestock grazing and management activities on the Windmill West Range Allotment (WWRA) located on the Red Rock Ranger and Flagstaff Ranger Districts, Coconino National Forest (NF) in Coconino and Yavapai Counties, Arizona; and (2) concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican spotted owl \textit{(Strix occidentalis lucida)} and its critical habitat, southwestern willow flycatcher \textit{(Empidonax trailli extimus)} and its critical habitat, the narrow-headed gartersnake \textit{(Thamnophis rufipunctatus)} and its proposed critical habitat, the northern Mexican gartersnake \textit{(Thamnophis eues)} and its proposed critical habitat, Colorado pikeminnow \textit{(Ptychocheilus lucius)}, razorback sucker \textit{(Xyrauchen texanus)} and its critical habitat, spikedace \textit{(Meda fulgida)} and its critical habitat, loach minnow \textit{(Tiaraga cobitis)} and its critical habitat, Gila topminnow \textit{(Poeciliopsis occidentalis occidentalis)}, the proposed western yellow-billed cuckoo \textit{(Coccyzus americanus)}, and the candidate roundtail chub \textit{(Gila robusta)}; U.S. Fish and Wildlife Service, August 14, 2014.

\textsuperscript{48} Correspondence, from: USFWS Arizona Field Supervisor David L. Harlow; to: Tonto National Forest Supervisor Karl Siderits; RE: Biological Opinion for ongoing grazing management on 20 allotments on the Tonto National Forest on lesser long-nosed bat \textit{(Leptonycteris curasoae verbabuena)}, desert pupfish \textit{(Cyprinodon macularius)}, cactus ferruginous pygmy-owl \textit{(Glaucidium brasilianum cactorum)}, southwestern willow flycatcher \textit{(Empidonax trailli extimus)}, Mexican spotted owl \textit{(Strix occidentalis mexicana)}, bald eagle \textit{(Haliaeetus leucocephalus)}, Colorado pikeminnow \textit{(Ptychocheilus lucius)}, Woundfin \textit{(Plagopterus argentissimus)}, Arizona agave \textit{(Agave arizonica)}, Arizona hedgehog \textit{(Echinocereus triglochidatus)} bonyn tail chub \textit{(Gila elegans)}, Gila topminnow \textit{(Poeciliopsis occidentalis occidentalis)}, spikedace with critical habitat, loach minnow with critical habitat, and the razorback sucker \textit{(Xyrauchen texanus)}; February 28, 2002.

\textsuperscript{49} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
examines the Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio allotments; the June 25, 1997, Biological Opinion\(^5\) which examines the Skeleton Ridge Allotment; the September 8, 1995, Biological Opinion\(^5\) which examines the Cedar Bench Allotment; and the December 19, 2000, Biological Opinion\(^5\) which examines the Red Creek Allotment.

**FACTUAL BACKGROUND**

In 2004, Maricopa Audubon Society, produced a report titled, "Seventy of Arizona's 116 State Threatened or Endangered Species have Cattle Grazing as a Causal Factor in their Imperilment."\(^5\) Maricopa Audubon's report is based on Arizona Game and Fish Department's "Wildlife of Special Concern in Arizona."\(^4\) The title of this report summarizes its findings.

In 2020, fourteen federally listed threatened and endangered species dependent upon the Verde River and tributaries for survival and Recovery are being harmed by blatant disregard by Forest Service personnel for law, Forest Plans, Forest Service riparian guidelines, and USFWS Biological Opinions.

The dominant mission of the Forest Service in the Southwest continues to be facilitation, accommodation, subsidization, promotion and protection of its grazing permittees and tolerance of stray and feral exotic ungulates. From the Muldoon allotment at the origin of the Upper Verde to the Bartlett allotment boundary with the Fort McDowell Yavapai Nation, we present our observations and documentation of widespread destruction and multiple violations of law throughout the Verde River drainage.

\(^5\) Correspondence, from Sam F. Spiller, USFWS Arizona Field Supervisor, to: Mr. Charles Bazan, USDA Tonto National Forest Supervisor; RE: Biological Opinion "on the effects of livestock grazing on the subject allotments on the endangered razorback sucker (*Xyrauchen texanus*) and southwestern willow flycatcher (*Empidonax traillii extimus*), and the experimental non-essential population of Colorado squawfish (*Ptychocheilus lucius*) in the Verde River. Designated critical habitat for the razorback sucker in the Verde River is found within the action area as is proposed critical habitat for the southwestern willow flycatcher."; June 25, 1997.

\(^5\) Correspondence, from Sam F. Spiller, USFWS Arizona State Supervisor; to: Charles R. Bazan, USDA Forest Service Tonto National Forest Supervisor; RE: Biological Opinion on the effects for the Cedar Bench Allotment Management Plan on the razorback sucker (*Xyrauchen texanus*); September 8, 1995.

\(^5\) Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Delvin Lopez, Tonto National Forest Cave Creek Ranger District Ranger; RE: Biological Opinion based on review proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (*Empidonax traillii extimus*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), Gila topminnow (*Poeciliopsis occidentalis occidentalis*), and loach minnow (*Rhinichthys cobitis*); December 19, 2000.


\(^4\) “Wildlife of Special Concern in Arizona,” Arizona Game and Fish Department, December 13, 1996.
Along the Verde River on the Muldoon Allotment on the Prescott National Forest we observed and documented 1.9 miles of light and 1.82 miles of moderate cattle impacts. Affected species include Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace. The Verde River through the Muldoon Allotment is designated Critical Habitat for Loach Minnow and Spikedace. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.

The following images document cattle presence and grazing damage along the Verde River on the Muldoon Allotment:

Survey Date: Aug 15, 2019   Survey Time: 10:42   Stream: Verde
Longitude: W 112.35775 Latitude: N 34.87876 Allotment: Muldoon
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Feces
Estimated age of grazing impact: More than a month old:
Survey Date: Aug 15, 2019    Survey Time: 10:37    Stream: Verde River
Longitude: W 112.35666    Latitude: N 34.8812    Allotment: Muldoon
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces, Livestock trails
Estimated age of grazing impact: A month or more:
Survey Date: Aug 15, 2019   Survey Time: 10:11   Stream: Verde River
Longitude: W 112.35612   Latitude: N 34.89026   Allotment: Muldoon
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Feces
Estimated age of grazing impact: More than a month old within exclosure fencing:
Survey Date: Aug 15, 2019    Survey Time: 10:01    Stream: Verde River
Longitude: W 112.35291    Latitude: N 34.8928    Allotment: Muldoon
Data Category: Condition of range infrastructure and developments; Broken or downed fence in flood plain:

The December 30, 2002, Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona\textsuperscript{55} states,

"The 3.6 perennial miles, existing within the Muldoon allotment, of critical habitat potentially occupied by spikedace on the Verde River are excluded from livestock use and monitored for stray cattle." [Page 10]

\textsuperscript{55} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
USFWS' assertion here is not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the Muldoon Allotment for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace. Consultation has not been undertaken for the Muldoon Allotment regarding Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Loach Minnow. Adverse modification of Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace has not been addressed for the Muldoon Allotment.
West Bear/Del Rio Allotment

Along the Verde River on the West Bear/Del Rio Allotment on the Prescott National Forest we observed and documented 8.1 miles of light and 0.7 miles of moderate cattle impacts. Affected species include Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace. The Verde River through the West Bear/Del Rio Allotment is designated Critical Habitat for Loach Minnow and Spikedace. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.

The following images document cattle grazing presence and damage along the Verde River on the West Bear/Del Rio Allotment:

Survey Date: Jul 18, 2019    Survey Time: 17:18    Stream: Verde River
Longitude: W 112.27559    Latitude: N 34.91691    Allotment: West Bear/Del Rio
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks; A large area of disturbed or exposed soils; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019    Survey Time: 16:55    Stream: Verde River
Longitude: W 112.26909    Latitude: N 34.91393    Allotment: West Bear/Del Rio
Data Category: Evidence of livestock impacts to vegetation, soils, or water    Grazing impacts observed at this location: Livestock trails, Feces, Tracks    Estimated age of grazing impact: Sometime over the last month:
Survey Date: Aug 15, 2019  Survey Time: 09:33  Stream: Verde River
Longitude: W 112.34634  Latitude: N 34.89472  Allotment: West Bear/Del Rio
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces; Estimated age of grazing impact: More than a month old; feces on river side of fence:
Survey Date: Aug 15, 2019    Survey Time: 08:51    Stream: Verde River
Longitude: W 112.32962    Latitude: N 34.89247    Allotment: West Bear/Del Rio
Data Category: Evidence of livestock impacts to vegetation, soils, or water    Grazing impacts observed at this location: Tracks, Feces in water or at water's edge;    Estimated age of grazing impact: More than a month old:
Survey Date: Aug 14, 2019  Survey Time: 15:37  Stream: Verde River
Longitude: W 112.29113  Latitude: N 34.88233  Allotment: West Bear/Del Rio
Data Category: Evidence of livestock impacts to vegetation, soils, or water  Grazing impacts observed at this location: Tracks, Feces;  Estimated age of grazing impact: Fresh within the last week:
Survey Date: Aug 15, 2019    Survey Time: 09:31    Stream: Verde River
Longitude: W 112.34517    Latitude: N 34.89472    Allotment: West Bear/Del Rio
Data Category: Condition of range infrastructure and developments broken or downed fence:
Survey Date: Aug 15, 2019    Survey Time: 09:07    Stream: Verde River
Longitude: W 112.33253    Latitude: N 34.89372    Allotment: West Bear/Del Rio
Data Category: Condition of range infrastructure and developments: Missing fence cut or washed away at private land boundary:
Survey Date: Aug 15, 2019  Survey Time: 08:58  Stream: Verde River
Longitude: W 112.33195  Latitude: N 34.89427  Allotment: West Bear/Del Rio
Data Category: Condition of range infrastructure and developments: Broken or downed fence, flooded out fence at private land boundary, intact upslope:
Survey Date: Aug 14, 2019   Survey Time: 17:29   Stream: Verde River
Longitude: W 112.3095   Latitude: N 34.87656   Allotment: West Bear/Del Rio
Data Category: Condition of range infrastructure and developments; Broken or downed fence, downed across river, electric:
Survey Date: Aug 14, 2019  Survey Time: 15:43  Stream: Verde River
Longitude: W 112.28971  Latitude: N 34.88157  Allotment: West Bear/Del Rio and China Dam boundary; Data Category: Condition of range infrastructure and developments, Broken or downed fence; entire fence line is down:
The December 30, 2002, Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona\textsuperscript{56} states regarding the West Bear/Del Rio Allotment,

"The 311 riparian acres within the allotment are adjacent to 9.7 miles of the Verde River (critical habitat potentially occupied by spikedace) and are excluded from livestock use. This 9.7 mile reach has been classified as “functional at risk, with an upward trend using the Proper Functioning Condition stream assessment protocol. ..."
Conservation Measures/Management Objectives

The PNF has proposed several management objectives for the West Bear/Del Rio allotment. These include 1) providing habitat for riparian and aquatic wildlife and native fish species by maintaining Proper Functioning Condition of riparian wetland areas of the Verde River ... [Page 9]

The 311 riparian acres within the allotment [West Bear/Del Rio] are adjacent to 9.7 miles of the Verde River which is designated as critical habitat for spikedace and loach minnow and is potentially occupied by spikedace. ... This perennial segment is excluded from livestock use and monitored for stray cattle." [Page 34]

USFWS' assertions for the West Bear/Del Rio Allotment here are not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the West Bear/Del Rio Allotment for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace. Consultation has not been undertaken for the West Bear/Del Rio Allotment regarding Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Loach Minnow. Adverse modification of Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace has not been addressed for the West Bear/Del Rio Allotment.

The Verde River flowing through the China Dam Allotment and along the border of the China Dam and the Sand Flat Allotments

Along or through the China Dam Allotment on the Verde River on the Prescott National Forest we observed and documented 1.9 miles of light and 1.2 miles of moderate cattle impacts. Along the border of the China Dam and the Sand Flat Allotments we observed and documented 1.77 miles of light cattle damage. Affected species include Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace. The Verde River through the West Bear/Del Rio Allotment is designated Critical Habitat for Loach Minnow and Spikedace. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.
The following images document cattle presence and grazing damage along the Verde River along or through the China Dam Allotment:

Survey Date: Jul 18, 2019    Survey Time: 16:27    Stream: Verde River
Longitude: W 112.26424    Latitude: N 34.9155    Allotment: China Dam; Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Feces bottom right; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019  Survey Time: 15:55  Stream: Verde River
Longitude: W 112.25946  Latitude: N 34.9143  Allotment: China Dam;
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019  Survey Time: 15:44  Stream: Verde River
Longitude: W 112.25894  Latitude: N 34.91136  Allotment: China Dam;
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Recent tracks, cow odor; Estimated age of grazing impact: Within the last week:
Survey Date: Jul 18, 2019  Survey Time: 15:41  Stream: Verde River
Longitude: W 112.25908  Latitude: N 34.9104  Allotment: China Dam;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Trampled biological soil crust, obvious destruction to biological soil crust; Tracks; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019    Survey Time: 15:36    Stream: Verde River;
Longitude: W 112.2591    Latitude: N 34.90874    Allotment: China Dam
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Livestock trails, Feces; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019  Survey Time: 14:54; Stream: Verde River;
Longitude: W 112.25347;  Latitude: N 34.90864; Allotment: China Dam;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces to right of trail; Estimated age of grazing impact: Sometime over the last month:
The following images document cattle grazing damage along the Verde River along the border of the China Dam and Sand Flat Allotments:

**Survey Date:** Jul 18, 2019; **Survey Time:** 12:36; **Stream:** Verde River; **Longitude:** W 112.24129; **Latitude:** N 34.91452; **Allotment:** China Dam/Sand Flat; **Data Category:** Evidence of livestock impacts to vegetation, soils, or water

**Grazing impacts observed at this location:** Tracks; **Estimated age of grazing impact:** Sometime over the last month:
Survey Date: Jul 18, 2019; Survey Time: 12:26; Stream: Verde River;
Longitude: W 112.24013; Latitude: N 34.91276; Allotment: China Dam/Sand Flat;
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces; Estimated age of grazing impact: More than a month old:
Survey Date: Jul 18, 2019; Survey Time: 11:49  Stream: Verde River;
Longitude: W 112.23959; Latitude: N 34.90819; Allotment: China Dam/Sand Flat;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Feces; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019;  Survey Time: 09:50  Stream: Verde River;
Longitude: W 112.22097; Latitude: N 34.89957;  Allotment: China Dam/Sand Flat;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Feces; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019; Survey Time: 12:47
Stream: Verde River;
Longitude: W 112.24218; Latitude: N 34.91402;  Allotment: China Dam;
Data Category: Condition of range infrastructure and developments; Broken or downed fence; Missing fence; Feces on all sides. fence ends abruptly:
Survey Date: Jul 18, 2019;  Survey Time: 12:45  Stream: Verde River;
Longitude: W 112.24217; Latitude: N 34.91403;  Allotment: China Dam;
Data Category: Condition of range infrastructure and developments: Broken or downed China Dam/Sand Flat fence to the river:
Survey Date: Jul 18, 2019;  Survey Time: 12:22  Stream: Verde River;
Longitude: W 112.24121;  Latitude: N 34.91222; Allotment: China Dam;
Data Category: Condition of range infrastructure and developments; Broken or downed fence; Feces on both of downed fence:
Survey Date: Jul 18, 2019;  Survey Time: 12:19  Stream: Verde River;
Longitude: W 112.24169;  Latitude: N 34.9125;  Allotment: China Dam;
Data Category: Condition of range infrastructure and developments; Missing fence, abrupt end:
Survey Date: Aug 14, 2019;  Survey Time: 15:43  Stream: Verde River;
Longitude: W 112.28971;  Latitude: N 34.88157;  Allotment: West Bear/Del Rio and China Dam boundary; Data Category: Condition of range infrastructure and developments; Broken or downed fence, entire fence line is down:
The December 30, 2002, Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona states,

"China Dam ... Three perennial miles of critical habitat, potentially occupied by spikedace, lie within the allotment on the Verde River. A total of 116 riparian acres are present on the allotment but are not accessible to grazing activity and are being monitored for stray cattle to ensure exclusion. The PNF has noted that poor distribution of cattle and limited water development contribute to the inability to manage cattle here." [Page 11]

USFWS' assertions for the China Dam Allotment here are not true because of Forest Service transgressions.

The December 30, 2002, Biological Opinion states,

"Sand Flat ... The 47 riparian acres within the allotment are adjacent to 1.7 miles of critical habitat potentially occupied by spikedace on the Verde River and are excluded from livestock use. This 1.7 mile reach has been classified as "functional at risk, with an upward trend using the Proper Functioning Condition stream assessment protocol." [Page 12]

USFWS' assertions for the Sand Flat Allotment here are not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the China Dam and Sand Flat Allotments for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, and Spikedace. Consultation has not been undertaken for the China Dam and Sand Flat Allotments regarding Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Loach Minnow. Adverse modification of designated Critical Habitat for Loach Minnow and Spikedace and proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake has not been addressed for the China Dam and the Sand Flat Allotments.

57 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.

58 Id.
Perkinsville Allotment

Along the Verde River through the Perkinsville Allotment on the Prescott National Forest we observed and documented 1.3 miles of light cattle and horse impacts. Affected species include Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace, and Razorback Sucker. The Perkinsville Allotment along the Verde is designated Critical Habitat for Loach Minnow, Spikedace and Razorback Sucker. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.

The following images document cattle and horse presence and grazing damage along the Verde River along or through the Perkinsville Allotment:

Survey Date: Jul 18, 2019;   Survey Time: 09:31   Stream: Verde River;
Longitude: W 112.22004;   Latitude: N 34.89645;   Allotment: Perkinsville;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Cow and horse tracks; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 18, 2019;    Survey Time: 09:08    Stream: Verde River;  
Longitude: W 112.21516;    Latitude: N 34.8935;    Allotment: Perkinsville;  
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  
Grazing impacts observed at this location: Feces inside exclosure fence;  
Estimated age of grazing impact: More than a month old:
Survey Date: Jul 17, 2019;   Survey Time: 19:12   Stream: Verde River;
Longitude: W 112.20448;   Latitude: N 34.89567; Allotment: Perkinsville;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Tracks, Livestock trails, Feces on the exclosure side of fencing; Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 19:08  Stream: Verde River;  
Longitude: W 112.20372;  Latitude: N 34.89672; Allotment: Perkinsville;  
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  
Grazing impacts observed at this location: Feces; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 17, 2019;  Survey Time: 18:30  Stream: Verde River;
Longitude: W 112.19103;  Latitude: N 34.90201; Allotment: Perkinsville;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts observed at this location: Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Grazing on grasses and herbs; Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 17:54  Stream: Verde River;
Longitude: W 112.18279;  Latitude: N 34.89541; Allotment: Perkinsville;
Data Category: Condition of range infrastructure and developments; Missing fence, Broken or downed fence and some non-functioning fencing at the railroad/bridge:
Survey Date: Jul 17, 2019;  Survey Time: 17:53  Stream: Verde River;
Longitude: W 112.18269; Latitude: N 34.8955;  Allotment: Perkinsville;
Data Category: Condition of range infrastructure and developments; Salt block licked and surrounded by feces, within riparian exclosure:
The December 30, 2002, Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona\textsuperscript{59} states about the Perkinsville Allotment,

"The 417 riparian acres within the allotment, adjacent to 1.6 miles of the Verde River which is critical habitat potentially occupied by spikedace, are partially excluded from livestock use as well as monitored for strays and vegetative utilization. [Page 14]...

The PNF proposes routine monitoring of the fence integrity to ensure restricted access to the Verde mainstem." [Page 15]

USFWS' assertions here are not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the Perkinsville Allotment for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace and Razorback Sucker. Consultation has not been undertaken for the Perkinsville Allotment regarding Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Razorback Sucker. Adverse modification of Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace and Razorback Sucker has not been addressed for the Perkinsville Allotment.

**Horseshoe Allotment**

Along the Verde River on the Horseshoe Allotment on the Prescott National Forest we observed and documented 0.3 miles of light, 1.2 of moderate and 2.0 miles of significant cattle impacts. Affected species include Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace, and Razorback Sucker. The Verde River along the Horseshoe Allotment is designated Critical Habitat for Loach Minnow, Spikedace, and Razorback Sucker. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.

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\textsuperscript{59} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
The following images document cattle and horse presence and grazing damage along the Verde River through the Horseshoe Allotment on the Prescott National Forest:

**Survey Date:** Jul 17, 2019;  **Survey Time:** 18:10  **Stream:** Verde River;  
**Longitude:** W 112.18425;  **Latitude:** N 34.89545;  **Allotment:** Horseshoe;  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water;  
**Grazing impacts observed at this location:** Livestock trails;  **Estimated age of grazing impact:** Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 17:34  Stream: Verde River
Longitude: W 112.1772;  Latitude: N 34.89484; Allotment: Horseshoe;
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Feces; Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 17, 2019; Survey Time: 17:26; Stream: Verde River; Longitude: W 112.17481; Latitude: N 34.89377; Allotment: Horseshoe; Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at waters’ edge; Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 17:19  Stream: Verde River;
Longitude: W 112.17351;  Latitude: N 34.89322;  Allotment: Horseshoe;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Feces in water or at water’s edge;
Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 17:12  Stream: Verde River;
Longitude: W 112.17129;  Latitude: N 34.89207; Allotment: Horseshoe;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;   Grazing impacts observed at this location: Tracks, Feces in water or at water's edge;   Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 17:05  Stream: Verde River; 
Longitude: W 112.16976;  Latitude: N 34.89122; Allotment: Horseshoe; 
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts observed at this location: Tracks, Livestock trails, Feces;  Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019,  Survey Time: 16:06  Stream: Verde River; Longitude: W 112.1707;  Latitude: N 34.88547; Allotment: Horseshoe; Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Feces in water or at water’s edge, Streambank shearing/degradation, grazing on streamside grasses; Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 15:38  Stream: Verde River;  
Longitude: W 112.1732;  Latitude: N 34.88359; Allotment: Horseshoe;  
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation and steady grazing along water's edge;  
Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 15:14  Stream: Verde River;
Longitude: W 112.16979;  Latitude: N 34.8802;  Allotment: Horseshoe;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Streambank shearing/degradation and tracks and grazing;  Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 14:49  Stream: Verde River;
Longitude: W 112.16271;  Latitude: N 34.87841;  Allotment: Horseshoe;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts observed at this location: Tracks, Streambank shearing/degradation; fresh feces nearby by water;  Estimated age of grazing impact: Within the last week:
Survey Date: Jul 17, 2019;  Survey Time: 14:37;  Stream: Verde River;
Longitude: W 112.16106;  Latitude: N 34.87526;  Allotment: Horseshoe;
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts
observed at this location: Cattle, two adults and one calf;  Estimated age of grazing impact: Today:
Survey Date: Jul 17, 2019  Survey Time: 13:25  Stream: Verde River
Longitude: W 112.16061  Latitude: N 34.87525  Allotment: Horseshoe
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation obvious, Feces
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 17, 2019; Stream: Verde River; Longitude: W 112.15888; Latitude: N 34.8727; Allotment: Horseshoe; Data Category: Condition of range infrastructure and developments; Broken or downed fence; Cows are pouring down this wash to the river. Trails and feces everywhere:
The December 30, 2002, Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona\textsuperscript{60} states about the Horseshoe Allotment,

"Approximately 149 riparian acres, adjacent to 3.4 miles of designated critical habitat potentially occupied by spikedace on the Verde River, occur within the allotment and are excluded from livestock use and will continue to be monitored. [Page 17] ...

Conservation Measures/Management Objectives ...

Approximately 3.4 miles of the Verde River exists within this allotment [Horseshoe] which is totally excluded from grazing as well as monitored for stray cattle. These 3.4 miles are designated critical habitat for both spikedace and loach minnow."

[Page 40]

USFWS' assertion here is not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the Horseshoe Allotment for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace and Razorback Sucker. Consultation has not been undertaken for the Horseshoe Allotment regarding Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Razorback Sucker. Adverse modification of Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace and Razorback Sucker has not been addressed for the Horseshoe Allotment.

\textsuperscript{60} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
Antelope Hills Allotment

Along the Verde River on the Antelope Hills Allotment on the Prescott National Forest we observed and documented 8.7 miles of light, 0.8 of moderate and 1.0 miles of significant cattle impacts. Affected species include Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace, and Razorback Sucker. The Verde River along Antelope Hills Allotment is designated Critical Habitat for Southwestern Willow Flycatcher, and Loach Minnow, Spikedace, and Razorback Sucker. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.
The following images document cattle and horse presence and grazing damage along the Verde River along the Antelope Hills on the Prescott National Forest:

**Survey Date:** Jul 17, 2019  **Survey Time:** 10:06  **Stream:** Verde River
**Longitude:** W 112.13805  **Latitude:** N 34.8904  **Allotment:** Antelope Hills
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water;  **Grazing impacts observed at this location:** Feces in water or at water's edge, Tracks, Streambank shearing/degradation;  **Estimated age of grazing impact:** Sometime over the last month:
Survey Date: Jul 16, 2019    Survey Time: 19:18    Stream: Verde River
Longitude: W 112.13193    Latitude: N 34.89121    Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces; Estimated age of grazing impact: More than a month old:
Survey Date: Jul 16, 2019    Survey Time: 18:02    Stream: Verde River
Longitude: W 112.12743    Latitude: N 34.88587    Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Streambank shearing/degradation. Note: trail drops into river. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 15, 2019   Survey Time: 19:08   Stream: Verde River
Longitude: W 112.06894   Latitude: N 34.84924   Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces;
Estimated age of grazing impact: Within the last week:
Survey Date: Jul 15, 2019   Survey Time: 19:01   Stream: Verde River
Longitude: W 112.06746   Latitude: N 34.85087   Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water;   Grazing impacts observed at this location: Tracks, Livestock trails, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation; Hammered gushing spring.;   Estimated age of grazing impact: Within the last week:
Survey Date: Jul 15, 2019  Survey Time: 19:00  Stream: Verde River
Longitude: W 112.06744  Latitude: N 34.85091  Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts
observed at this location: Streambank shearing/degradation, Tracks;  Estimated age of
grazing impact: Within the last week:
**Survey Date:** Jul 15, 2019  
**Survey Time:** 18:57  
**Stream:** Verde River  
**Longitude:** W 112.06687  
**Latitude:** N 34.85121  
**Allotment:** Antelope Hills  

**Data Category:** Evidence of livestock impacts to vegetation, soils, or water;  

**Grazing impacts observed at this location:** Tracks, Livestock trails, A livestock animal, Feces, Grazing on grasses and herbs; cows grazing; **Estimated age of grazing impact:** Today:
Survey Date: Jul 15, 2019    Survey Time: 18:35    Stream: Verde River
Longitude: W 112.06307    Latitude: N 34.84924    Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation;
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 15, 2019    Survey Time: 18:11    Stream: Verde River
Longitude: W 112.05857    Latitude: N 34.84601    Allotment: Antelope Hills
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Feces; Estimated age of grazing impact: In the past week:
Survey Date: Jul 16, 2019    Survey Time: 15:47    Stream: Verde River
Longitude: W 112.11247    Latitude: N 34.8719    Allotment: Antelope Hills
Data Category: Condition of range infrastructure and developments: Fence randomly ends at this point, allowing cattle to enter river:
Survey Date: Jul 16, 2019       Survey Time: 15:44       Stream: Verde River
Longitude: W 112.11167     Latitude: N 34.87184  Allotment: Antelope Hills
Data Category: Condition of range infrastructure and developments, Missing fence, fence line abruptly ends:
Survey Date: Jul 16, 2019    Survey Time: 14:06    Stream: Verde River
Longitude: W 112.10879    Latitude: N 34.8713    Allotment: Antelope Hills
Data Category: Condition of range infrastructure and developments: Broken or downed fence, posts but no wire:
Survey Date: Jul 16, 2019    Survey Time: 13:48    Stream: Verde River
Longitude: W 112.10363    Latitude: N 34.87024    Allotment: Antelope Hills
Data Category: Condition of range infrastructure and developments: posts but no wire:
Survey Date: Jul 15, 2019  Survey Time: 18:58  Stream: Verde River
Longitude: W 112.06691  Latitude: N 34.8512  Allotment: Antelope Hills
Data Category: Condition of range infrastructure and developments: Broken or downed fence, Fence entirely lying on ground:
The December 30, 2002, Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona\textsuperscript{61} states about the Antelope Hills allotment,

"Approximately 14.6 miles of the Verde River exists within this 14,397 acre allotment which is totally excluded from grazing. These 14.6 miles are considered as designated critical habitat for both spikedace and loach minnow and may potentially be occupied by spikedace." [Page 39]

USFWS' assertion here is not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the Antelope Hills Allotment for Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace and Razorback Sucker. Consultation has not been undertaken for the Antelope Hills Allotment regarding Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow and Razorback Sucker. Adverse modification of Critical Habitat for Southwestern Willow Flycatcher, Loach Minnow, Spikedace and Razorback Sucker, and adverse modification of proposed Critical Habitat for Narrow-headed Gartersnake, Northern Mexican Gartersnake and Yellow-billed Cuckoo has not been addressed for the Antelope Hills Allotment.

\textsuperscript{61} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
Windmill West/Antelope Hills Allotments Border

Along the Verde River on the border between the Windmill West and Antelope Hills Allotments on the Prescott National Forest we observed and documented 0.85 miles of moderate and 0.45 miles of significant cattle impacts. Affected species include Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow, Spikedace, and Razorback Sucker. The Verde River border between the Windmill West and Antelope Hills Allotments is Critical Habitat for Southwestern Willow Flycatcher, Loach Minnow, Spikedace, and Razorback Sucker. It is proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake.
The following images document grazing damage along the Verde River along the border of the Windmill West and Antelope Hills Allotments border on the Prescott National Forest:

**Survey Date:** Jul 15, 2019  **Survey Time:** 18:41  **Stream:** Verde River

**Longitude:** W 112.06406  **Latitude:** N 34.85002  **Allotment:** Windmill West

**Data Category:** Evidence of livestock impacts to vegetation, soils, or water; **Grazing impacts observed at this location:** Tracks, Feces in water or at water’s edge, Streambank shearing/degradation, Trampled vegetation, Livestock trails; **Estimated age of grazing impact:** Sometime over the last month:
Survey Date: Jul 15, 2019    Survey Time: 18:38    Stream: Verde River
Longitude: W 112.0632    Latitude: N 34.84933    Allotment: Windmill West
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Grazing on grasses and herbs, Streambank shearing/degradation, grazed.
Estimated age of grazing impact: Sometime over the last month:
On May 6, 2016, USFWS evaluated the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona. USFWS' May 6, 2016, Biological Opinion includes "[t]he eight livestock range allotments included in this consultation are the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West." Species supposed to be addressed by the May 6, 2016, Biological Opinion on these allotments include the Northern Mexican Gartersnake, the Narrow-headed Gartersnake, the Yellow-billed Cuckoo and proposed Critical Habitat for each, Roundtail Chub and Gila Chub and its designated Critical Habitat.

There is no evaluation of the Windmill West in the May 6, 2016, Biological Opinion.

On August 14, 2014, USFWS evaluated the effects of the Windmill West Allotment’s grazing on Arizona cliffrose and concurred with the Forest Service' opinion on southwestern willow flycatcher (Empidonax traillii extimus) and its critical habitat, the narrow-headed gartersnake (Thamnophis rufipunctatus) and its proposed critical habitat, the northern Mexican gartersnake (Thamnophis eques) and its proposed critical habitat, Colorado pikeminnow (Ptychocheilus lucius), razorback sucker (Xyrauchen texanus) and its critical habitat, spikedace (Meda fulgida) and its critical habitat, loach minnow (Tiaroga cobitis) and its critical habitat, Gila topminnow (Poeciliopsis occidentalis occidentalis), the proposed western yellow-billed cuckoo (Coccyzus americanus), and the candidate roundtail chub (Gila robusta).

We include this August 14, 2014, Biological Opinion in this Notice because even though ordinarily the May 6, 2016, Biological Opinion would supersede the earlier August 14, 2014, Biological Opinion for Northern Mexican Gartersnake, Narrow-headed Gartersnake, Roundtail Chub

62 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.

63 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.

64 Ibid.

65 Biological Opinion on (1) the possible effects of livestock grazing and management activities on the Windmill West Range Allotment (WWRA) located on the Red Rock Ranger and Flagstaff Ranger Districts, Coconino National Forest (NF) in Coconino and Yavapai Counties, Arizona; and (2) concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican spotted owl (Strix occidentalis lucida) and its critical habitat, southwestern willow flycatcher (Empidonax traillii extimus) and its critical habitat, the narrow-headed gartersnake (Thamnophis rufipunctatus) and its proposed critical habitat, the northern Mexican gartersnake (Thamnophis eques) and its proposed critical habitat, Colorado pikeminnow (Ptychocheilus lucius), razorback sucker (Xyrauchen texanus) and its critical habitat, spikedace (Meda fulgida) and its critical habitat, loach minnow (Tiaroga cobitis) and its critical habitat, Gila topminnow (Poeciliopsis occidentalis occidentalis), the proposed western yellow-billed cuckoo (Coccyzus americanus), and the candidate roundtail chub (Gila robusta); U.S. Fish and Wildlife Service, August 14, 2014.
and Gila Chub; however, the May 6, 2016, Biological Opinion fails to evaluate the effects of the Windmill West Allotment on any of these species in spite of claiming to do so.

The August 14, 2014, Biological Opinion on the Windmill West Range Allotment says,

"Your letter also requested our concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican spotted owl (Strix occidentalis lucida) and its critical habitat, southwestern willow flycatcher (Empidonax traillii extimus) and its critical habitat, the narrow-headed gartersnake (Thamnophis rufipunctatus) and its proposed critical habitat, the northern Mexican gartersnake (Thamnophis eques) and its proposed critical habitat, Colorado pikeminnow (Ptychocheilus lucius), razorback sucker (Xyrauchen texanus) and its critical habitat, spinedace (Meda fulgida) and its critical habitat, loach minnow (Tiaroga cobitis) and its critical habitat, Gila topminnow (Poeciliopsis occidentalis occidentalis), the proposed western yellow-billed cuckoo (Coccyzus americanus), and the candidate roundtail chub (Gila robusta). We concur with your determinations. The basis for our concurrences is found in Appendix B." [Page 1.]

"APPENDIX B – CONCURRENCES

This appendix contains our concurrences with your “may affect, not likely to adversely affect” determinations for the threatened Mexican spotted owl and its critical habitat, the endangered southwestern willow flycatcher and its critical habitat, the proposed yellow-billed cuckoo, the threatened narrow-headed gartersnake and its proposed critical habitat, the threatened northern Mexican gartersnake and its proposed critical habitat, the endangered razorback sucker and its critical habitat, the 10j experimental population of Colorado pikeminnow, the endangered loach minnow and its critical habitat, the endangered spinedace and its critical habitat, and the endangered Gila topminnow. The appendix also contains our concurrence with your “not likely to contribute in a trend toward Federal listing, loss of viability, or jeopardize the continued existence” determination for the candidate roundtail chub. [Page 21.] ...

Southwestern willow flycatcher and critical habitat

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the endangered southwestern willow flycatcher and its critical habitat. We base this concurrence on the following: ...

There are approximately 27 acres of designated critical habitat for southwestern willow flycatcher located in Duff Flat Pasture on the winter range. Livestock do not have access to these 27 acres because of fences or steep topography so there will be no effects to the primary constituent elements related to riparian vegetation from proposed action. [Page 21.]

Yellow-billed cuckoo
We concur with your determination that the proposed action may affect, but is not likely to adversely affect the proposed yellow-billed cuckoo. We base this concurrence on the following:

• Under the proposed action, livestock do not have access to riparian vegetation along the Verde River or Oak Creek; therefore, there will be no direct effects to yellow-billed cuckoos or their habitat.

**Narrow-headed gartersnake and proposed critical habitat**

We concur with your determination that the proposed action may affect, but will not likely adversely affect, the narrow-headed gartersnake and its proposed critical habitat. We base this concurrence on the following:

• There will be no direct effects to narrow-headed gartersnakes or proposed critical habitat as livestock do not have access to the Verde River, West Fork Oak Creek, or Oak Creek (or any perennial streams) and their associated riparian vegetation. [Page 22.]

**Northern Mexican gartersnake and proposed critical habitat**

We concur with your determination that the proposed action may affect, but will not likely adversely affect, the northern Mexican gartersnake and its proposed critical habitat. We base this concurrence on the following:

• There will be no direct effects to northern Mexican gartersnakes or proposed critical habitat as livestock do not have access to the Verde River or Oak Creek (or any perennial streams) and their associated riparian vegetation. [Page 22.]

**Razorback sucker and critical habitat, Colorado pikeminnow, loach minnow and critical habitat, spikedace and critical habitat, Gila topminnow**

We concur with your determination that the proposed action may affect, but will not likely adversely affect, the razorback sucker and designated critical habitat, the Colorado pikeminnow, the loach minnow and its critical habitat, the spikedace and its critical habitat, and the Gila topminnow. We base our concurrence on the following: ...

• There will be no direct effects to razorback sucker, Colorado pikeminnow, loach minnow, spikedace, and Gila topminnow or their habitat from implementation of the WWRA as livestock do not have access to the Verde River or Oak Creek (or any perennial streams) and their associated riparian vegetation. [Pages 22-23.]

**Roundtail chub**

We concur with your determination that the proposed action is not likely to contribute to a trend toward Federal listing, loss of viability, or jeopardize the continued existence of the candidate roundtail chub in the Verde River and Oak Creek. We base this concurrence on the following:
• There will be no direct effects roundtail chub or their habitat from implementation of the WWRA as livestock do not have access to the Verde River or Oak Creek (or any perennial streams) and their associated riparian vegetation." [Page 23.]

We add quotations from this August 14, 2014, Biological Opinion on Roundtail Chub because (1) we, as well as does every recognized, published desert fish expert, believe that the entire Roundtail Chub taxon qualifies for Endangered Species Act protection, and (2) USFWS "remains committed to working closely with partner agencies such as the Arizona Game and Fish Department and the New Mexico Department of Game and Fish and others to prevent declines of the newly recognized roundtail chub.66

Further, USFWS' October 2017, General Species Information for Roundtail chub says;

"REASON FOR DECLINE/VULNERABILITY: Roundtail chub populations have declined due to a combination of habitat loss and degradation related to dams, diversions, groundwater pumping, mining, development, recreation, improper livestock grazing, and competition and predation from non-native fishes. Global climate change is anticipated to worsen the effects of these threats. The lower Colorado River DPS of roundtail chub occupy only 18% of their historical range."67

USFWS' concurrences with the Forest Service assertion the Windmill West Allotment cattle grazing "will not likely adversely affect" for Southwestern Willow Flycatcher, Razorback Sucker, Loach Minnow and Spikedace and their Critical Habitat, for Narrow-headed Gartersnake and Northern Mexican Gartersnake and their proposed Critical Habitat, and for Yellow-billed Cuckoo, Colorado River Pikeminnow, and Gila Topminnow, are not true because of Forest Service transgressions.

We document adverse modification of Critical Habitat on the Windmill West Allotment/Antelope Hills Allotment border for Southwestern Willow Flycatcher, Loach Minnow, Spikedace and Razorback Sucker and for proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake and their proposed Critical Habitat, for Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow and Razorback Sucker. As we also stated above, for the Antelope Hills Allotment, consultation has not been undertaken for the Antelope Hills Allotment regarding Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Loach Minnow and Razorback Sucker. As we also stated above, for the Antelope Hills Allotment, adverse modification of Critical Habitat for Southwestern Willow Flycatcher, Loach Minnow, Spikedace and Razorback Sucker and adverse modification of proposed Critical Habitat for Yellow-billed Cuckoo, Narrow-headed Gartersnake, and Northern Mexican Gartersnake has not been addressed. For Windmill West Allotment, similarly on point for the


Windmill West Allotment/Antelope Hills Allotment, USFWS' August 14, 2014, Biological Opinion for the Windmill West Allotment is no longer accurate for Southwestern Willow Flycatcher, Razorback Sucker, Loach Minnow and Spikedace and their designated Critical Habitat, nor for Yellow-billed Cuckoo, Colorado River Pikeminnow, and Gila Topminnow, or nor for Narrow-headed Gartersnake and Northern Mexican Gartersnake and their proposed Critical Habitat.

In addition, since the August 14, 2014, Biological Opinion, on February 27, 2020, Critical Habitat has been proposed for Yellow-billed Cuckoo. Consequently, for the border of Windmill West Allotment/Antelope Hills Allotment, USFWS must address the adverse modification that we document in this Notice and in Center (2020).

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68 Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.
Along Red Tank Draw within the Apache Maid Allotment on the Coconino National Forest we observed and documented 1.66 miles of light cattle impacts. Affected species include Yellow-billed Cuckoo, Gila Chub, Loach Minnow and Spikedace. Red Tank Draw is designated Critical Habitat for Gila Chub. It is proposed Critical Habitat for Yellow-billed Cuckoo.

The following images document cattle presence and grazing damage along Red Tank Draw through the Apache Maid Allotment on the Tonto National Forest:

**Survey Date:** Oct 6, 2019  **Survey Time:** 16:22  **Stream:** Red Tank Draw
**Longitude:** N 111.70064  **Latitude:** W 34.71039  **Allotment:** Apache Maid
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water; **Grazing impacts observed at this location:** Livestock trails, Feces; **Estimated age of grazing impact:** Maybe a year or older:
Survey Date: Oct 6, 2019   Survey Time: 15:35   Stream: Red Tank Draw
Longitude: N 111.71079   Latitude: W 34.70155   Allotment: Apache Maid
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces, Livestock trails; Estimated age of grazing impact: More than a month old:
Survey Date: Oct 6, 2019    Survey Time: 15:29    Stream: Red Tank Draw
Longitude: N 111.71206    Latitude: W 34.70037    Allotment: Apache Maid
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces; Estimated age of grazing impact: Maybe a year or older:
Survey Date: Oct 6, 2019    Survey Time: 14:23    Stream: Red Tank Draw
Longitude: N 111.71856    Latitude: W 34.69201    Allotment: Apache Maid
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces; Estimated age of grazing impact: Maybe a year or older:
On May 6, 2016, USFWS evaluated the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona. Regarding the Apache Maid Allotment, the May 6, 2016, Biological Opinion says,

"The Forest Service has determined that the proposed action may affect, and is likely to adversely affect, the endangered Gila chub (Gila intermedia) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest). [Page 1] ...

Your letter also requested our concurrence that the proposed action may affect, but is not likely to adversely affect: ... the northern Mexican gartersnake, the narrow-headed gartersnake, the yellow-billed cuckoo, proposed critical habitat for the gartersnakes and cuckoo, and Gila chub designated critical habitat on the Apache Maid Allotment [Page 1] ...

You also determined that the action would have "no effect" for the following: ... the roundtail chub and Gila chub critical habitat on the Apache Maid Allotment [Page 2] ...

The eight livestock range allotments included in this consultation are the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West. Also included is the Beaverhead-Grief Hill Sheep Driveway. However, the only range allotments/driveway that will be discussed in this biological opinion are those that include the potential for adverse effects to listed species and/or critical habitat: the Apache Maid Range Allotment [Page 3] ...

Apache Maid Range Allotment ... The major drainages located within the allotment are the Verde River, Oak Creek, Wet Beaver Creek, Dry Beaver Creek, and Rarick Canyon. [Page 4] ...

... Most of Red Tank Draw (and where the majority of Gila chub occur, and upstream of the crossing location) is not grazed due to canyon confines, so the greatest potential effect to Gila chub results from the use of the crossing. ... [Page 20.]

Gila Chub

After reviewing the current status of the Gila chub, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is our

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69 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.
biological opinion that ongoing use of the Apache Maid and Beaver Creek Range allotments will not jeopardize the continued existence of the Gila chub. We base our conclusion on the following:

• The project area includes occupied Gila chub habitat. However, the proposed action will occur within a very small area that includes no chub habitat and is typically dry. [Page 27.] …

Apache Maid Range Allotment

Northern Mexican 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 threatened northern Mexican gartersnake and its proposed critical habitat.

We base this concurrence on the following: … livestock grazing does not occur in riparian habitat on the Apache Maid Allotment. … the livestock management on the Apache Maid Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon. …

Narrow-headed gartersnake and its proposed critical habitat

We base this concurrence on the following: … livestock grazing does not occur in riparian habitat on the Apache Maid Allotment. … the livestock management on the Apache Maid Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon.

Yellow-billed cuckoo and its proposed critical habitat

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the threatened yellow-billed cuckoo and its proposed critical habitat. We base this concurrence on the following:

• Ongoing livestock management on the Apache Maid Range Allotment will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat in Red Tank Draw or in the Winter North and Winter South Pastures. Livestock are present for only a few days as they are trailed through Red Tank Draw; known occupied cuckoo habitat in the Winter North Pasture is excluded (Stagestop Exclosure) from livestock use; and, the Winter South Pasture is only used in the winter and spring (outside the breeding season). … " [Pages 37-38.]

USFWS' concurrences with the Forest Service assertion that the Apache Maid Allotment cattle grazing (1) "is not likely to adversely affect" Yellow-billed Cuckoo and proposed Yellow-billed Cuckoo proposed Critical Habitat, (2) will have "no effect" on Roundtail Chub and designated Gila
Chub Critical Habitat, and (3) "most of Red Tank Draw...is not grazed" are not true because of Forest Service transgressions.

On the Apache Maid Allotment, we document adverse effects on Gila Chub, Roundtail Chub, and Yellow-billed Cuckoo. We also document adverse modification to designated Gila Chub Critical Habitat and to proposed Yellow-billed Cuckoo Critical Habitat.

**Beaver Creek Allotment**

Along Wet Beaver Creek, Walker Creek and Red Tank Draw within the Beaver Creek Allotment on the Coconino National Forest, we note 3.62 miles of light cattle impacts, 0.38 miles of moderate cattle impacts, and 1.11 miles of significant cattle impacts. Affected species include Yellow-billed Cuckoo, Gila Chub, Loach Minnow and Spikedace. Affected Critical Habitat includes designated Critical Habitat for Gila Chub on Walker Creek and Red Tank Draw, designated Critical Habitat for Loach Minnow and Spikedace on Wet Beaver Creek and proposed Yellow-billed Cuckoo Critical Habitat on Red Tank Draw, Wet Beaver Creek and Walker Creek.
The following images document cattle presence and grazing damage along Wet Beaver Creek, Walker Creek, and Red Tank Draw through the Beaver Creek Allotment on the Tonto National Forest:

**Survey Date:** Oct 7, 2019  **Survey Time:** 09:19  **Stream:** Wet Beaver Creek
**Longitude:** N 111.72106  **Latitude:** W 34.66151  **Allotment:** Beaver Creek

**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Feces in water or at water's edge, Streambank shearing/degradation, Livestock trails with chute to creek around downed fence;  
**Estimated age of grazing impact:** More than a month old:
Survey Date: Oct 7, 2019    Survey Time: 08:11    Stream: Walker Creek
Longitude: N 111.72913    Latitude: W 34.6505    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water;    Grazing impacts observed at this location: Feces in water or at water's edge; lots of cows have been here but not for a little while. Estimated age of grazing impact: More than a month old:
Survey Date: Oct 7, 2019    Survey Time: 08:03    Stream: Walker Creek
Longitude: N 111.72717    Latitude: W 34.65058    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Livestock trails, A large area of disturbed or exposed soils, Feces in water or at water's edge, Streambank shearing/degradation; Estimated age of grazing impact: More than a month old:
Survey Date: Oct 7, 2019    Survey Time: 07:47    Stream: Walker Creek
Longitude: N 111.72188    Latitude: W 34.64856    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Feces in water or at water's edge, Tracks, Livestock trails, Streambank shearing/degradation; Estimated age of grazing impact: More than a month old:
Longitude: N 111.73034    Latitude: W 34.67416    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water;   Grazing impacts observed at this location: Feces;   Estimated age of grazing impact: More than a month old:
Survey Date: Oct 6, 2019    Survey Time: 12:57    Stream: Red Tank Draw
Longitude: N 111.73277    Latitude: W 34.67052    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water;
Grazing impacts observed at this location: Feces;
Estimated age of grazing impact: More than a month old:
Survey Date: Oct 6, 2019    Survey Time: 12:53    Stream: Red Tank Draw
Longitude: N 111.73379    Latitude: W 34.66919    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces, Streambank shearing/degradation, Tracks, Livestock trails; Estimated age of grazing impact: More than a month old:
Survey Date: Oct 6, 2019    Survey Time: 11:43    Stream: Red Tank Draw
Longitude: N 111.73956    Latitude: W 34.66255    Allotment: Beaver Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Feces, including lots from horses; Estimated age of grazing impact: More than a month old:
On May 6, 2016, USFWS evaluated the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona.70 Regarding the Beaver Creek Allotment, the May 6, 2016, USFWS’ Biological Opinion says,

"The Forest Service has determined that the proposed action may affect, and is likely to adversely affect, the endangered Gila chub (Gila intermedia) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest) [Page 1] …

Your letter also requested our concurrence that the proposed action may affect, but is not likely to adversely affect: … the yellow-billed cuckoo and its proposed critical habitat, the roundtail chub, and Gila chub designated critical habitat on the Beaver Creek Allotment; … We concur with your determinations. The basis for our concurrences is found in Appendix A. [Pages 1-2.] …

The allotment has three distinct management zones: Winter Use Zone in the Verde Valley (3,300-ft elevation); the Transition Use Zone in the pinyon/juniper woodlands (5,500-ft elevation); and the Summer Use Zone in the ponderosa pine type (7,000-ft elevation).

Management in 1996 was modified to exclude certain portions of Wet Beaver Creek from livestock grazing with use of creek-side water gaps at hardened (bank protected) sites to facilitate livestock watering. … Upper Walker Creek, which forms the southern boundary of the Valley South (Bull) Pasture, is fenced to exclude livestock grazing except for a small (200 ft in stream length) water gap for livestock water during designated grazing periods. The major drainages located within the allotment are Wet Beaver Creek, Beaver Creek, Long Canyon, Walker Creek, Jacks Canyon, Brady Canyon, and Red Tank Draw. [Page 5.]

**APPENDIX A – CONCURRENCES …**

**Beaver Creek Range Allotment**

**Yellow-billed cuckoo and its proposed critical habitat**

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the threatened yellow-billed cuckoo and its proposed critical habitat. We base this concurrence on the following:

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70 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.
• Ongoing livestock management on the Beaver Creek Range Allotment will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat on Walker Creek, Red Tank Draw, or Wet Beaver Creek.

• Ongoing livestock grazing on the Beaver Creek Range Allotment is consistent with or is more conservative than the descriptions provided in Table 2, Appendix G of the 2002 USFWS Southwestern Willow Flycatcher Final Recovery Plan.71 The guidelines for the southwestern willow flycatcher are used as a surrogate for the western yellow-billed cuckoo until such guidelines are developed for this species.

Roundtail chub

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the proposed threatened roundtail chub. We base this concurrence on the following:

• Best management practices will be implemented to minimize potential sedimentation from project activities to aquatic habitats. Therefore, the potential increase in sedimentation as a result of implementing ongoing livestock grazing and management activities near Wet Beaver Creek are likely to be minor, and therefore, insignificant and discountable to the roundtail chub and its habitat.

Gila chub designated critical habitat

We concur with your determination that the proposed action may affect, but is not likely to adversely affect Gila chub critical habitat. We base this concurrence on the following:

• The effects of ongoing livestock grazing will result in insignificant and discountable effects to the PCEs of Gila chub critical habitat. There is no livestock access to critical habitat within the Valley South pasture. Best management practices will be implemented to ensure that livestock grazing will not result in measurable effects to the PCEs of Gila chub critical habitat (pool habitat, water temperature, water quality, food base, cover, the presence of non-native aquatic species, or the natural hydrograph) throughout the rest of the allotment." [Pages 39-40.]

We include quotations from this May 6, 2016, Biological Opinion on Roundtail Chub because (1) we, as well as does every recognized, published desert fish expert, believe that the entire Roundtail Chub taxon qualifies for Endangered Species Act protection, and (2) USFWS "remains committed to working closely with partner agencies such as the Arizona Game and Fish Department

The USFWS, however, concluded that Roundtail chub is not likely to be adversely affected by the proposed action because the project area is not regularly grazed by livestock. This statement, however, is inappropriate because: (1) observed and anticipated grazing intensity does not accurately reflect the potential impact of uncontrolled grazing on Roundtail chub; (2) Roundtail chub is dependent on riparian and non-riparian stream habitats; (3) Roundtail chub is dependent on riparian and non-riparian stream habitats; (4) the project area is not typically grazed by livestock; (5) the project area is not typically grazed by livestock; and (6) the project area is not typically grazed by livestock.

71 "No grazing until research in comparable unoccupied habitat demonstrates no adverse impact; if unoccupied habitat becomes occupied habitat, continue existing management (grazing should not exceed 35% of palatable, perennial grasses and grass-like plants in uplands and riparian habitats, and extent of alterable stream banks showing damage from livestock use not to exceed 10%)."; Southwestern Willow Flycatcher Recovery Plan, August 2002.
and the New Mexico Department of Game and Fish and others to prevent declines of the newly recognized roundtail chub.\textsuperscript{72}

Further, USFWS' October 2017, General Species Information for Roundtail chub says;

\textbf{"REASON FOR DECLINE/VULNERABILITY:} Roundtail chub populations have declined due to a combination of habitat loss and degradation related to dams, diversions, groundwater pumping, mining, development, recreation, improper livestock grazing, and competition and predation from non-native fishes. Global climate change is anticipated to worsen the effects of these threats. The lower Colorado River DPS of roundtail chub occupy only 18% of their historical range."\textsuperscript{73}

USFWS' concurrence with the Forest Service assertion that the Beaver Creek Allotment cattle grazing "will not likely adversely affect" Yellow-billed Cuckoo and its proposed Critical Habitat is based upon the assumption that cattle grazing on the Beaver Creek Allotment is (1) "...will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat on Walker Creek, Red Tank Draw, or Wet Beaver Creek" and that (2) Beaver Creek Allotment grazing is "consistent with or is more conservative than ... descriptions provided in ... the 2002 USFWS Southwestern Willow Flycatcher Recovery Plan." We present documentation here that this USFWS' assumptions are have proven to not be true.

USFWS assumption that "livestock grazing will not result in measurable effects" on Gila Chub Critical Habitat in the Beaver Creek Allotment is also wrong based on the Forest Service transgressions exposed by our surveys presented in this Notice.

Adverse effects by Beaver Creek cattle grazing on Loach Minnow and Spikedace and adverse modification of Loach Minnow and Spikedace Critical Habitat have not been evaluated.


\textsuperscript{73} General Species Information for Roundtail chub, Lower Colorado River Distinct Population Segment (DPS) (\textit{Gila robusta}), U.S. Fish and Wildlife Service, October 2017.
Along Walker Creek within the Walker Basin Allotment on the Coconino National Forest, we observed and documented 0.79 miles of moderate cattle impacts. Affected species include Gila Chub. Affected Critical Habitat includes designated Critical Habitat for Gila Chub on Walker Creek.

The following images document cattle presence and grazing damage along Walker Creek through and along the Walker Basin Allotment on the Tonto National Forest:

- **Survey Date:** Oct 21, 2019  
- **Survey Time:** 11:48  
- **Stream:** Walker Creek  
- **Longitude:** N 111.69155  
- **Latitude:** W 34.64541  
- **Allotment:** Walker Basin  
- **Data Category:** Evidence of livestock impacts to vegetation, soils, or water; **Grazing impacts observed at this location:** Feces;  
- **Estimated age of grazing impact:** More than a month old:
Survey Date: Oct 21, 2019    Survey Time: 11:45   Stream: Walker Creek
Longitude: N 111.69236    Latitude: W 34.64488    Allotment: Walker Basin
Data Category: Evidence of livestock impacts to vegetation, soils, or water;   Grazing impacts observed at this location: Feces;   Estimated age of grazing impact: More than a month old:
Survey Date: Oct 21, 2019    Survey Time: 11:34    Stream: Walker Creek
Longitude: N 111.69698    Latitude: W 34.64292    Allotment: Walker Basin
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Livestock trails, Feces; Estimated age of grazing impact: More than a month old:
Survey Date: Oct 21, 2019   Survey Time: 11:32   Stream: Walker Creek
Longitude: N 111.69764   Latitude: W 34.64304   Allotment: Walker Basin
Data Category: Evidence of livestock impacts to vegetation, soils, or water;   Grazing impacts observed at this location: Livestock trails, Tracks, Feces;   Estimated age of grazing impact: More than a month old:
Survey Date: Oct 21, 2019    Survey Time: 11:22    Stream: Walker Creek
Longitude: N 111.70151    Latitude: W 34.64268    Allotment: Walker Basin
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Feces; Estimated age of grazing impact: More than a month old:
**Survey Date:** Oct 21, 2019  **Survey Time:** 10:54  **Stream:** Walker Creek

**Longitude:** N 111.69474  **Latitude:** W 34.64372  **Allotment:** Walker Basin

**Data Category:** Evidence of livestock impacts to vegetation, soils, or water; **Grazing impacts observed at this location:** Tracks, Livestock trails, Feces; Trail leading to creek; **Estimated age of grazing impact:** More than a month old:
Survey Date: Oct 21, 2019  Survey Time: 10:56  Stream: Walker Creek
Longitude: N 111.69543  Latitude: W 34.64328  Allotment: Walker Basin
Data Category: Evidence of livestock impacts to vegetation, soils, or water;  Grazing impacts observed at this location: Tracks, Livestock trails, Feces;  Estimated age of grazing impact: More than a month old:
On May 6, 2016, USFWS evaluated the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona. Regarding the Walker Basin Allotment, the May 6, 2016, USFWS' Biological Opinion says only,

“You also determined that the action would have "no effect" for the following: ... the northern Mexican garter snake, the narrow-headed garter snake, the yellow-billed cuckoo, and proposed critical habitat for the garter snakes and cuckoo on the Walker Basin Allotment [Page 2.] ..."

The eight livestock range allotments included in this consultation are the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West. Also included is the Beaverhead-Grief Hill Sheep Driveway. However, the only range allotments/driveway that will be discussed in this biological opinion are those that include the potential for adverse effects to listed species and/or critical habitat: the Apache Maid Range Allotment, the Beaver Creek Range Allotment, and the Beaverhead-Grief Hill Sheep Driveway.” [Page 3.]

Because the May 6, 2016, USFWS Biological Opinion says essentially nothing about the Walker Basin Allotment, we refer to the previous Biological Opinion where USFWS previously evaluated the allotment. This previous September 30, 2002, USFWS evaluated "On-going Grazing on the Coconino National Forest," including the Walker Basin Allotment.

Regarding the Walker Basin Allotment, the September 30, 2002, USFWS Biological Opinion says,

"Upper Walker Creek forms the northern boundary of the Walker Basin Pasture. Upper Walker Creek is fenced to exclude livestock grazing, with the exception of a single small water gap for stock water. [Page 14.]

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74 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.

75 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Jim Golden, Forest Supervisor, Coconino National Forest; RE: Biological Opinion of On-going Grazing [including Thirteen Mile Creek, Apache Maid, Beaver Creek, Fossil Creek, Hackberry/Pivot Rock, and Walker Basin allotments] on the Coconino National Forest; September 30, 2002.
We recommend the following to protect riverine and riparian habitat from significant grazing effects within the eight livestock grazing allotments included in this consultation:

Closely monitor utilization and physical damage levels within the following allotments and pastures: ... Walker Basin Allotment – North Montezuma, West Russell, and South Montezuma Pastures." [Page 40.]

USFWS' concurrence in the May 6, 2016, Biological Opinion with the Forest Service assertion that Walker Basin Allotment cattle grazing will have "no effect" on "the potential for adverse effects to listed species and/or critical habitat" is not true. We can only assume that USFWS' rational is based on its earlier, September 30, 2002, Biological Opinion's assumption that Upper Walker Creek "is fenced to exclude livestock grazing."

We present documentation here that this USFWS' conclusion and assumptions regarding the Walker Basin Allotment are not be true. We present new information documenting adverse effects on Gila Chub, and adverse modification of Gila Chub designated Critical Habitat.

**Verde River at the border of Brown Springs and Hackberry/Pivot Rock Allotments**

Along the Verde River at the border of the Brown Springs and Hackberry/Pivot Rock Allotments, we observed and documented 4.24 miles of light cattle impacts, and 4.38 miles of significant cattle impacts. Affected species include Southwestern Willow Flycatcher, Yellow-billed Cuckoo, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Spikedace and Razorback Sucker on the 13-Mile Rock Allotment; Southwestern Willow Flycatcher, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Spikedace, Razorback Sucker and Yellow-billed Cuckoo on the Brown Springs Allotment; and Southwestern Willow Flycatcher, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Spikedace, Razorback Sucker and Yellow-billed Cuckoo on the Hackberry/Pivot Rock Allotment. The 13-Mile Rock and Hackberry/Pivot Rock allotments are on the Coconino National Forest. The Brown Springs Allotment is on the Prescott National Forest. Affected Critical Habitat on the 13-Mile Rock, Brown Springs and Hackberry/Pivot Rock Allotments includes proposed Critical Habitat for Narrow-headed Gartersnake, and Northern Mexican Gartersnake; and designated Critical Habitat for Southwestern Willow Flycatcher, Spikedace, and Razorback Sucker.
The following images document cattle presence and grazing damage along the border of Brown Springs and Hackberry/Pivot Rock Allotments:

Survey Date: Jun 6, 2019    Survey Time: 09:52    Stream: Verde River
Longitude: W 111.75303    Latitude: N 34.38109    Allotment: Brown Springs/Hackberry/Pivot Rock

Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 09:46    Stream: Verde River
Longitude: W 111.75508    Latitude: N 34.3818    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Browsing on streamside woody recruitment, Grazing on grasses and herbs, Tracks, Livestock trails, Streambank shearing/degradation, Seep willow browsed; Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 09:34    Stream: Verde River
Longitude: W 111.75673    Latitude: N 34.38186    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water; Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Browsing on Salix; Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019     Survey Time: 09:29     Stream: Verde River
Longitude: W 111.75724     Latitude: N 34.38039     Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water; **Grazing impacts observed at this location:** Feces in water or at water' edge, Tracks fresh by the water. **Estimated age of grazing impact:** Today:
Survey Date: Jun 6, 2019    Survey Time: 09:15    Stream: Verde River
Longitude: W 111.75881    Latitude: N 34.37819    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water;    Grazing impacts observed at this location: Tracks, Livestock trails, Grazing on grasses and herbs, Feces fresh.
Estimated age of grazing impact: Today:
Survey Date: Jun 6, 2019    Survey Time: 09:08    Stream: Verde River
Longitude: W 111.76069    Latitude: N 34.37771    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: A live or dead stock animal, Tracks, A large area of disturbed or exposed soils, Trampled vegetation, Livestock trails, Feces, Grazing on grasses and herbs, Three cows witnessed.

Estimated age of grazing impact: Today:
Survey Date: Jun 6, 2019  Survey Time: 08:53  Stream: Verde River
Longitude: W 111.76428  Latitude: N 34.37787  Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Feces in water or at water's edge, Grazing on grasses and herbs, Tracks, Livestock trails, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 19:08    Stream: Verde River
Longitude: W 111.76683    Latitude: N 34.37859    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts
observed at this location: Browsing on streamside woody recruitment, Browsing on seep willow
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 5, 2019      Survey Time: 18:52      Stream: Verde River
Longitude: W 111.76731        Latitude: N 34.3789        Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Livestock trails, Feces, At least one cow audible. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 18:45    Stream: Verde River
Longitude: W 111.76736    Latitude: N 34.38039    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Livestock trails, Feces.    Estimated age of grazing impact: Today:
Survey Date: Jun 5, 2019    Survey Time: 18:39    Stream: Verde River
Longitude: W 111.76658    Latitude: N 34.3824    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Wallowing in a dry, sandy area, Feces, Grazing on grasses and herbs, One cow just ran through here.
Estimated age of grazing impact: Today:
Survey Date: Jun 5, 2019   Survey Time: 18:36   Stream: Verde River
Longitude: W 111.76602   Latitude: N 34.3831   Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Livestock trails, Tracks, Feces, Grazing on grasses and herbs; One cow spotted. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 18:27    Stream: Verde River
Longitude: W 111.76541    Latitude: N 34.38389    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: A live or dead stock animal, Streambank shearing/degradation. Estimated age of grazing impact: Today:
Survey Date: Jun 5, 2019    Survey Time: 18:11    Stream: Verde River
Longitude: W 111.7646    Latitude: N 34.38428    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation.    Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 18:01    Stream: Verde River
Longitude: W 111.76458    Latitude: N 34.3857    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: A live or dead stock animal: Three cows; Impacts everywhere. Estimated age of grazing impact: Today:
Survey Date: Jun 5, 2019    Survey Time: 17:31    Stream: Verde River
Longitude: W 111.76769    Latitude: N 34.38791    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.   Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, browsing on streamside woody recruitment, Grazing on grasses and herbs, Streambank hearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 17:28    Stream: Verde River
Longitude: W 111.76857    Latitude: N 34.38816    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 17:26    Stream: Verde River
Longitude: W 111.76879    Latitude: N 34.38819    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Browsing on willow re-sprouting.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 16:53    Stream: Verde River
Longitude: W 111.77027    Latitude: N 34.391    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces, Tracks, Livestock trails, Feces on the river (exclusion) side of the really nice fence on Brown Springs Allotment.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 5, 2019    Survey Time: 16:50    Stream: Verde River
Longitude: W 111.76964    Latitude: N 34.39122    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs, Streambank shearing/degradation.    Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 5, 2019    Survey Time: 15:56    Stream: Verde River
Longitude: W 111.77169    Latitude: N 34.3969    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Streambank shearing/degradation, Trampled vegetation, Browsing on streamside woody recruitment, Grazing in sedge and track where cow slipped.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 15:44    Stream: Verde River
Longitude: W 111.77406    Latitude: N 34.39923    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 14:11    Stream: Verde River
Longitude: W 111.77584    Latitude: N 34.40018    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Trampled vegetation, Streambank shearing/degradation, Grazing on grasses and herbs, Browsing on streamside woody recruitment. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 5, 2019    Survey Time: 14:00    Stream: Verde River
Longitude: W 111.77751    Latitude: N 34.40084    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Streambank shearing/degradation, Grazed sedges. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 5, 2019    Survey Time: 13:33    Stream: Verde River
Longitude: W 111.78115    Latitude: N 34.40172    Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Browsing on streamside woody recruitment, Tracks, Grazing on grasses and herbs, Browsing on willows.    Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 5, 2019  Survey Time: 13:31  Stream: Verde River
Longitude: W 111.78156  Latitude: N 34.40176  Allotment: Brown Springs/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Track, Livestock trails, Feces in water or at water’s edge. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 5, 2019    Survey Time: 13:20    Stream: Verde River
Longitude: W 111.78309    Latitude: N 34.40239    Allotment: Brown Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Grazing on grasses and herbs, Trampled vegetation, Tracks, Grazing on sedges and cattail.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 4, 2019    Survey Time: 15:52    Stream: Verde River
Longitude: W 111.78859    Latitude: N 34.45066    Allotment: Brown Springs
Data Category: Condition of range infrastructure and developments: Gate missing, open, or non-functioning: lower gate left open. still functional. unclear why this fence/gate is here - other gate ten feet up slope does the job:
Survey Date: Jun 4, 2019    Survey Time: 13:26    Stream: Verde River
Longitude: W 111.78733    Latitude: N 34.46037    Allotment: Brown Springs
Data Category: Condition of range infrastructure and developments: Missing fence: Remains of fence. Seems to have been largely removed:
Survey Date: Jun 4, 2019    Survey Time: 17:29    Stream: Verde River/Sycamore Canyon
Longitude: W 111.78964    Latitude: N 34.44213    Allotment: Hackberry/Pivot Rock
Data Category: Condition of range infrastructure and developments: Broken or downed fence: The fence that crosses sycamore creek is down. The fence going up the hill to the north is also missing. It is just burnt looking fence posts.
Survey Date: Jun 4, 2019    Survey Time: 18:16    Stream: Verde River
Longitude: W 111.7842    Latitude: N 34.44029    Allotment: Boundary between Hackberry/Pivot Rock and Brown Springs.

Data Category: Condition of range infrastructure and developments:

Broken or downed fence: The whole fence is like this in this stretch, with wires lying on the ground:
Survey Date: Jun 6, 2019    Survey Time: 12:11    Stream: Verde River
Longitude: W 111.73763    Latitude: N 34.3749    Allotment: Boundary of Skeleton Ridge, Hackberry/Pivot Rock, and Fossil Creek Allotments. **Data Category:** Condition of range infrastructure and developments: 1. Broken or downed fence, 2. Gate missing, open, or non-functioning: Major trail connects here, through drainage, to river. Signs of heavy use. This is the closest fence - it hasn’t been functional for some time. Cow signs abundant up here:
On December 30, 2002, USFWS evaluated the impacts that may result from the proposed and ongoing livestock grazing activities on 16 allotments of the Verde River watershed, on the Chino Valley and Verde River districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona. The Brown Springs Allotment is included in this December 30, 2002, Biological Opinion. We cannot find any subsequent evaluation of the Brown Springs Allotment.

Regarding the Brown Springs Allotment, the December 30, 2002, Biological Opinion says,


The Brown Springs allotment...a 20% utilization standard is being applied to riparian areas. ... river monitoring is being conducted to assess percent utilization as cattle will be allowed to graze in unoccupied critical habitat with the allotment. ...

Three waterbodies, the Verde River, Gap Creek, and Coldwater Creek exist within the allotment boundaries. Specifically, 12 miles of designated critical habitat on the Verde River ... exist within the allotment. ...

There are two access points to the Verde River in the Coldwater and Rodeo pastures. Each pasture is grazed 5-6 months and rested for 12-14 months. The PNF monitors these areas for livestock effects which include vegetative utilization and impact to the river’s banks. The monitoring occurs approximately three months into the grazing period and again after cattle have been removed from these pastures. The PNF has noted that riparian species utilization has been slight to low and bank destabilization does not appear to be occurring at the points of access.

Conservation Measures/Management Objectives

There are no specific proposed improvements for the Brown Springs allotment.

[Page 23.] ...

ENVIRONMENTAL BASELINE [Page 32] ...

Brown Springs Allotment

... Three waterbodies, the Verde River, Gap Creek, and Coldwater Creek exist within the allotment boundaries. Specifically, 12 miles of the Verde River, 8 miles of Gap...
Creek and 4 miles of Coldwater Creek (totaling 24 perennial stream miles) exist within the allotment. Of these perennial stream miles, only the 12 miles of the Verde River are designated critical habitat for spikedace and loach minnow. However, neither spikedace or loach minnow are believed to be occupying the lower reach of the Verde River (USFS 2001a, USFS 2001b). A total of 256 riparian acres are accessible to grazing activity. Between the Verde River, Gap Creek and Coldwater Creek, 10 perennial stream miles are accessible to grazing, or 42% of the total perennial stream miles. [Page 44.]

Streambanks

Cattle will occur in limited areas of streambanks within four of the allotments (West Bear/Del Rio, Perkinsville, Brown Springs, and Sycamore). [Page 62.]

Livestock, if allowed access to riparian corridors designated as critical habitat (as proposed in the West Bear/Del Rio, Perkinsville, and Brown Springs allotments) during extended time periods especially during growth periods, are likely to directly alter streamside vegetation in several areas by trampling, rubbing, and feeding on herbaceous plants and shrubs. Use and removal of herbaceous vegetation leads to changes in species composition, species diversity, and biomass, while use and removal of woody vegetation can lead to changes in foliage cover, structural height diversity, and stand reproduction. [Page 64.]

Both the Brown Springs and Sycamore allotments provide access for livestock to the Verde River. Specifically, in the Brown Springs allotment, livestock are provided access to the Verde River for a duration approximately 5 to 6 months, occurring every 12 to 14 months." [Page 68.]

On May 6, 2016, USFWS evaluated the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona. The 13-Mile Allotment and the Hackberry/Pivot Rock Allotment are included in this May 6, 2016, Biological Opinion.

Regarding the 13-Mile Allotment, the May 6, 2016, Biological Opinion says,

"Your letter also requested our concurrence that the proposed action may affect, but is not likely to adversely affect: ... the northern Mexican gartersnake, the narrow-headed gartersnake, the yellow-billed cuckoo, proposed critical habitat for the

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77 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.
gartersnakes and cuckoo, and the roundtail chub on the 13 Mile Rock Allotment [Page 1] ...

The eight livestock range allotments included in this consultation are the 13 Mile Rock. Apache Maid. Beaver Creek. Fossil. Hackberry|Pivot Rock. Walker Basin. Windmill. and Windmill West. Also included is the Beaverhead-Grief Hill Sheep Driveway. However. the only range allotments/driveway that will be discussed in this biological opinion are those that include the potential for adverse effects to listed species and/or critical habitat: the Apache Maid Range Allotment. the Beaver Creek Range Allotment. and the Beaverhead-Grief Hill Sheep Driveway. [Page 3] ...

APPENDIX A – CONCURRENCES ...

13 Mile Rock Range Allotment

Northern Mexican 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 threatened northern Mexican gartersnake and its proposed critical habitat. We base this concurrence on the following:

• Indirect effects occurring within the action area, where suitable and critical habitats are present, are determined to be insignificant or discountable. There is no authorized access to the Verde River (the area is fenced). Livestock do have access to potential shedding and hibernating habitat in the Wingfield East and West Pastures. However, the livestock management on the 13 Mile Rock Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon.

• Proposed livestock management activities, within the action area, will not increase the likelihood that bullfrogs, non-native fish, or crayfish will colonize, be introduced, or improve their status as a result of activities occurring in such aquatic sites within northern Mexican gartersnake habitat or proposed critical habitat.

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 threatened narrow-headed gartersnake and its proposed critical habitat. We base this concurrence on the following:

• Indirect effects occurring within the action area, where suitable and critical habitats are present, are determined to be insignificant or discountable. There is no authorized access to the Verde River (the area is fenced). Livestock do have access to potential shedding and hibernating habitat in the Wingfield East and West Pastures. However, the livestock management on the 13 Mile Rock Range Allotment is designed to
protect both riparian and upland habitats that the narrow-headed gartersnake is dependent upon.

**Yellow-billed cuckoo and its proposed critical habitat**

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the threatened yellow-billed cuckoo and its proposed critical habitat. We base this concurrence on the following:

- Ongoing livestock management on the 13 Mile Rock Range Allotment will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat in the Wingfield West and Heifer Pastures as livestock do not have access to riparian habitat in these areas.

- Ongoing livestock grazing on the 13 Mile Rock Range Allotment is consistent with or is more conservative than the descriptions provided in Table 2, Appendix G of the 2002 USFWS Southwestern Willow Flycatcher Final Recovery Plan. The guidelines for the southwestern willow flycatcher are used as a surrogate for the western yellow-billed cuckoo until such guidelines are developed for this species.

**Roundtail chub**

We concur with your determination that the proposed action may affect, but is not likely to adversely affect the proposed threatened roundtail chub. We base this concurrence on the following:

- Best management practices will be implemented to minimize potential sedimentation from project activities to aquatic habitats. Therefore, the potential increase in sedimentation as a result of implementing ongoing livestock grazing and management activities on West Clear Creek and the Verde River are likely to be minor, and therefore, insignificant and discountable to the roundtail chub and its habitat.

- There is no authorized access to the Verde River by livestock on the 13 Mile Rock Range Allotment, so there should be no direct effects to roundtail chub.

- There are two water gaps that allow livestock access to drink water from West Clear Creek, one is located in the Heifer Pasture and one is located in the Winter Pasture. Livestock will only have access to these two water gaps for a limited time each year; therefore, direct effects to roundtail chub from the ongoing action will be insignificant and discountable." [Pages 36-37]

We include quotations from this May 6, 2016, Biological Opinion on Roundtail Chub because (1) we, as well as does every recognized, published desert fish expert, believe that the entire Roundtail Chub taxon qualifies for Endangered Species Act protection, and (2) USFWS "remains committed to working closely with partner agencies such as the Arizona Game and Fish Department
and the New Mexico Department of Game and Fish and others to prevent declines of the newly recognized roundtail chub.78

Further, USFWS' October 2017, General Species Information for Roundtail chub says;

"REASON FOR DECLINE/VULNERABILITY: Roundtail chub populations have declined due to a combination of habitat loss and degradation related to dams, diversions, groundwater pumping, mining, development, recreation, improper livestock grazing, and competition and predation from non-native fishes. Global climate change is anticipated to worsen the effects of these threats. The lower Colorado River DPS of roundtail chub occupy only 18% of their historical range."79

Regarding the Hackberry/Pivot Rock Allotment, the May 6, 2016, Biological Opinion says,

"Your letter also requested our concurrence that the proposed action may affect, but is not likely to adversely affect: ... the northern Mexican gartersnake, the narrow-headed gartersnake, and proposed critical habitat for both gartersnakes on the Hackberry Allotment [Pages 1-2] ...

You also determined that the action would have "no effect" for the following: ... the roundtail chub on the Hackberry Allotment [Page 2] ... The eight livestock range allotments included in this consultation are the 13 Mile Rock. Apache Maid. Beaver Creek. Fossil. Hackberry/Pivot Rock. Walker Basin. Windmill. and Windmill West. Also included is the Beaverhead-Grief Hill Sheep Driveway. However. the only range allotments/driveway that will be discussed in this biological opinion are those that include the potential for adverse effects to listed species and/or critical habitat: the Apache Maid Range Allotment. the Beaver Creek Range Allotment. and the Beaverhead-Grief Hill Sheep Driveway. [Page 3.] ...

APPENDIX A – CONCURRENCES ...

Hackberry Range Allotment

Northern Mexican 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 threatened northern Mexican gartersnake and its proposed critical habitat.

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We base this concurrence on the following:

• Indirect effects occurring within the action area, where critical habitat is present, are determined to be insignificant or discountable. Livestock grazing does not occur in riparian habitat on the Hackberry Allotment, but does occur in upland habitat where the species could occur and within proposed critical habitat. However, the livestock management on the Hackberry Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon. [Page 41]...

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 threatened narrow-headed gartersnake and its proposed critical habitat. We base this concurrence on the following:

• Indirect effects occurring within the action area, where critical habitat is present, are determined to be insignificant or discountable. Livestock grazing does not occur in riparian habitat on the Hackberry Allotment, but does occur in upland habitat where the species could occur and within proposed critical habitat. However, the livestock management on the Hackberry Range Allotment is designed to protect both riparian and upland habitats that the narrow-headed gartersnake is dependent upon. Efforts to reduce soil erosion and minimize impacts to gartersnake habitat in and adjacent to the Verde River will result in insignificant and discountable effects to the gartersnake and its habitat." [Page 42.]

For the Brown Springs Allotment, the December 30, 2002, Biological Opinion USFWS does not specifically concur or agree with USFS' effects determination for Loach Minnow and Spikedace and Spikedace Critical Habitat. However, since USFWS offers no conservation recommendations we can only conclude USFWS concurs with USFS' effects determination of "no effect" for Loach Minnow and "may affect, not likely to adversely affect" for Spikedace and Spikedace Critical Habitat. Such a concurrence for Spikedace and Spikedace Critical Habitat is inappropriate as we present new information in this Notice documenting adverse effects by Brown Springs Allotment grazing on Spikedace and adverse modification of Spikedace Critical Habitat.

In this Notice, for the Brown Springs Allotment, we also present documentation of adverse effects on Southwestern Willow Flycatcher, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Razorback Sucker; and adverse modification of proposed Critical Habitat for Narrow-headed Gartersnake, Northern Mexican Gartersnake, and designated Critical Habitat for Southwestern Willow Flycatcher, Spikedace and Razorback Sucker. In addition, we can find no USFWS consultation for the Brown Springs allotment for Southwestern Willow Flycatcher, Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Razorback Sucker; and adverse modification of proposed Critical Habitat for Narrow-headed Gartersnake, Northern Mexican Gartersnake, and designated Critical Habitat for Razorback Sucker.
USFWS' concurrence in the May 6, 2016, Biological Opinion that Hackberry/Pivot Rock Allotment grazing "is not likely to adversely affect: ... the northern Mexican gartersnake, the narrow-headed gartersnake, and proposed critical habitat for both gartersnakes" based on USFWS' assumption that "livestock grazing does not occur in riparian habitat on the Hackberry Allotment" is also inappropriate. USFWS concurrence is inappropriate because we present new information in this Notice documenting adverse effects by Hackberry/Pivot Rock livestock grazing on Narrow-headed Gartersnake and Northern Mexican Gartersnake and documenting adverse modification of proposed Narrow-headed Gartersnake and Northern Mexican Gartersnake Critical Habitat. In addition, we can find no USFWS consultation for the Hackberry/Pivot Rock Allotment for Southwestern Willow Flycatcher, Spikedace, and Razorback Sucker and their designated Critical Habitat in spite of new information documenting effects on Southwestern Willow Flycatcher, Spikedace, and Razorback Sucker and adverse modification of their designated Critical Habitat.

**Verde River at the border of Fossil Creek and Skeleton Ridge Allotments, Verde River within the Skeleton Ridge Allotment; Fossil Creek at the border Deadman Mesa and Skeleton Ridge Allotments; Fossil Creek at the border of Cedar Bench and Skeleton Ridge Allotments; Verde River at the border of Cedar Bench and Skeleton Ridge Allotments; and the Verde River and the East Verde River within the Cedar Bench Allotment.**

Along the Verde River at the border of the Fossil Creek and Skeleton Ridge Allotments, we observed and documented 0.47 miles of light cattle impacts, 0.59 miles of moderate cattle impacts, and 2.10 miles of significant cattle impacts. Along the Verde River at the border of the Cedar Bench and Skeleton Ridge Allotments, we observed and documented 1.03 miles of significant cattle impacts. Along the Verde River within the Skeleton Allotment, we observed and documented 0.53 miles of moderate cattle impacts and 10.56 miles of significant cattle impacts. Fossil Creek at the border of the border of Deadman Mesa and Skeleton Ridge, we observed and documented 0.35 miles of light cattle impacts, 0.34 miles of moderate cattle impacts, and 2.14 miles of significant cattle impacts. Along Fossil Creek at the border of the Cedar Bench and Skeleton Ridge Allotments, we observed and documented 0.67 miles of significant cattle impacts. Along the Verde River within the Cedar Bench Allotment, we observed and documented 3.74 miles of significant cattle impacts. Along the East Verde River within the Cedar Bench Allotment, we observed and documented 5.96 miles of significant cattle impacts.

Affected endangered species on the Fossil Creek Allotment include Gila Topminnow, Loach Minnow, Northern Mexican Gartersnake, Narrow-headed Gartersnake, Razorback Sucker and Spikedace. The Fossil Creek Allotment includes Loach Minnow, Razorback Sucker and Spikedace designated Critical Habitat and Northern Mexican Gartersnake, Narrow-headed Gartersnake proposed Critical Habitat.
Affected endangered species on the Skeleton Ridge Allotment include Northern Mexican Gartersnake, Narrow-headed Gartersnake, Razorback Sucker, Southwestern Willow Flycatcher, Spikedace and Yellow-billed Cuckoo. The Skeleton Ridge Allotment includes Razorback Sucker, Southwestern Willow Flycatcher and Spikedace designated Critical Habitat and Northern Mexican Gartersnake, Narrow-headed Gartersnake and Yellow-billed Cuckoo proposed Critical Habitat.

Affected endangered species on the Ike's Backbone Allotment include Loach Minnow, Northern Mexican Gartersnake, Narrow-headed Gartersnake, Razorback Sucker, and Spikedace. The Ike's Backbone Allotment includes Loach Minnow, Razorback Sucker, and Spikedace designated Critical Habitat and Northern Mexican Gartersnake and Narrow-headed Gartersnake proposed Critical Habitat.

Affected endangered species on the Deadman Mesa Allotment include Desert Pupfish, Gila Topminnow, Loach Minnow and Spikedace. The Deadman Mesa Allotment Loach Minnow and Spikedace designated Critical Habitat.

Affected endangered species on the Cedar Bench Allotment include Northern Mexican Gartersnake, Narrow-headed Gartersnake, Loach Minnow, Razorback Sucker, Southwestern Willow Flycatcher, Spikedace and Yellow-billed Cuckoo. The Cedar Bench Allotment includes Loach Minnow, Razorback Sucker, Southwestern Willow Flycatcher and Spikedace designated Critical Habitat and Northern Mexican Gartersnake, Narrow-headed Gartersnake and Yellow-billed Cuckoo proposed Critical Habitat.

The Fossil Creek Allotment is on the Coconino National Forest. The Skeleton Ridge/Ike's Backbone, Deadman Mesa and Cedar Bench Allotments are on the Tonto National Forest.

The following images document cattle presence and grazing damage along the Verde River along the border of the Fossil Creek and Skeletal Ridge Allotments:
Survey Date: Jun 6, 2019    Survey Time: 18:44    Stream: Verde River
Longitude: W 111.70215    Latitude: N 34.35118    Allotment: Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Streambank shearing/degradation, which extends upstream too.

Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 6, 2019   Survey Time: 17:00   Stream: Verde River
Longitude: W 111.71184   Latitude: N 34.35843   Allotment: Skeleton Ridge

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Feces in water or at water's edge, Grazing on grasses and herbs where old road fords the river.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019   Survey Time: 16:54   Stream: Verde River
Longitude: W 111.71165   Latitude: N 34.35969   Allotment: Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Feces, Tracks, Grazing on grasses and herbs. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 16:40    Stream: Verde River
Longitude: W 111.71222    Latitude: N 34.36005    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: A live or dead stock animal; Cow at river. Estimated age of grazing impact: Today:
Survey Date: Jun 6, 2019  
Survey Time: 16:35  
Stream: Verde River  
Longitude: W 111.7126  
Latitude: N 34.36068  
Allotment: Skeleton Ridge/Fossil Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Browsing on streamside woody recruitment.  
Feces, tracks, trail, and stream side degradation in photo.  
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 16:31    Stream: Verde River
Longitude: W 111.71296    Latitude: N 34.36121    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Browsing on woody plants, Browsing on streamside woody recruitment.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019   Survey Time: 16:23   Stream: Verde River
Longitude: W 111.71283   Latitude: N 34.363   Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Livestock trails, Feces.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 6, 2019      Survey Time: 15:32      Stream: Verde River
Longitude: W 111.71702      Latitude: N 34.36489      Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soil. Wallowing in a dry, sandy area, Feces, Grazing on grasses and herbs. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 15:17    Stream: Verde River
Longitude: W 111.71765    Latitude: N 34.36563    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing and degradation. Three cows observed across river.    Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 6, 2019    Survey Time: 15:10    Stream: Verde River
Longitude: W 111.71917    Latitude: N 34.36555    Allotment: Skeleton Ridge

Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Browsing on streamside woody recruitment, Streambank shearing/degredation, Grazing on grasses and herbs, Feces in water or at water's edge, Tracks.

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 14:58    Stream: Verde River
Longitude: W 111.72223    Latitude: N 34.36441    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: A live or dead stock animal. Cow crossing the river with two others. Estimated age of grazing impact: Today:
Survey Date: Jun 6, 2019    Survey Time: 14:52    Stream: Verde River
Longitude: W 111.72324    Latitude: N 34.36387    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water. **Grazing impacts observed at this location:** Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Browsing on streamside woody recruitment. **Estimated age of grazing impact:** Within the last week:
Survey Date: Jun 6, 2019       Survey Time: 13:32       Stream: Verde River
Longitude: W 111.72639       Latitude: N 34.36363       Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Trampled vegetation, Streambank shearing/degradation, Grazing on grasses and herbs. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 6, 2019    Survey Time: 13:22    Stream: Verde River
Longitude: W 111.72669    Latitude: N 34.36408    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Feces, Grazing on grasses and herbs.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 13:17    Stream: Verde River
Longitude: W 111.72791    Latitude: N 34.36481    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 12:56    Stream: Verde River
Longitude: W 111.73115    Latitude: N 34.36749    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Trampled vegetation, Livestock trails, Grazing on grasses and herbs, Streambank shearing/degradation.  Cow trail crossing river. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 12:50    Stream: Verde River
Longitude: W 111.73241    Latitude: N 34.36852    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation. Serious chiseling.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 12:47    Stream: Verde River
Longitude: W 111.73303    Latitude: N 34.36901    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.   Grazing impacts observed at this location: Wallowing in a dry, sandy area, Tracks, Livestock trails, Trampled vegetation, Feces, Grazing on grasses and herbs, Streambank shearing/degradation.   Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019  Survey Time: 12:44  Stream: Verde River
Longitude: W 111.73431  Latitude: N 34.36956  Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Browsing on streamside woody recruitment.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 12:39    Stream: Verde River
Longitude: W 111.73481    Latitude: N 34.36968    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment.    Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 12:28    Stream: Verde River
Longitude: W 111.73722    Latitude: N 34.37166    Allotment: Skeleton Ridge/Fossil Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Tracks, Feces, Browsing on streamside woody recruitment, Trampled vegetation. Frequent browsing on the young cottonwood cohort found here. Many branches broken too.

Estimated age of grazing impact: Sometime over the last month:
The following images document cattle presences and grazing damage along the Verde River within the Skeleton Ridge Allotment:

Survey Date: May 30, 2019    Survey Time: 17:08    Stream: Fossil Creek
Longitude: W 111.66742    Latitude: N 34.30877    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Streambank shearing/degradation.
Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019    Survey Time: 15:51    Stream: Verde River
Longitude: W 111.6759    Latitude: N 34.30778    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.   Grazing impacts observed at this location: Track, Livestock trails, Feces, A large area of disturbed or exposed soils, Trampled vegetation, Browsing on woody plants. Lots of grazed cottonwood regeneration.
Estimated age of grazing impact: Within the last week:
Longitude: W 111.67611   Latitude: N 34.30842   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.   Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs.   Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019  Survey Time: 15:45  Stream: Verde River  
Longitude: W 111.6764  Latitude: N 34.30872  Allotment: Skeleton Ridge  
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  
Grazing impacts observed at this location: Livestock trails, Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Streambank shearing/degradation.  
Estimated age of grazing impact: Within the last week:
Longitude: W 111.67636  Latitude: N 34.31001  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Grazing on grasses and herbs, Streambank shearing/degradation, Feces in water or at water's edge.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 30, 2019  Survey Time: 15:11  Stream: Verde River
Longitude: W 111.67789  Latitude: N 34.3115  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Trampled vegetation, Livestock trails.  Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019   Survey Time: 15:07   Stream: Verde River
Longitude: W 111.67834   Latitude: N 34.31251   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Streambank shearing/degradation.  Estimated age of grazing impact: Sometime over the last month:
Longitude: W 111.67937  Latitude: N 34.31752  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs. Smells terrible of cow urine and feces here. Estimated age of grazing impact: Within the last week:
Longitude: W 111.6796  Latitude: N 34.31769  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Livestock trails, Tracks, Streambank shearing/degradation, Feces in water or at water’s edge.  Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019   Survey Time: 11:29   Stream: Verde River
Longitude: W 111.68793   Latitude: N 34.32452   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.   Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, A large area of disturbed or exposed soils, Streambank. Shoed horsetracks. Found horseshoe. Tracks follow recent cattle tracks. Area is hammered with shearing and degradation.   Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019  Survey Time: 09:43  Stream: Verde River
Longitude: W 111.69628  Latitude: N 34.33018  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation.  Estimated age of grazing impact: Within the last week:
Grazing impacts observed at this location: Trampled vegetation, A large area of disturbed or exposed soils, Livestock trails, Wallowing in a dry, sandy area. Large area of disturbed soils.

Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 29, 2019   Survey Time: 19:05   Stream: Verde River
Longitude: W 111.69722   Latitude: N 34.33394   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Wallowing in a dry, sandy area, Feces, Grazing on grasses and herbs, Browsing on woody plants. Also see bad fence.   Estimated age of grazing impact: Within the last week:
Survey Date: May 29, 2019    Survey Time: 19:01    Stream: Verde River
Longitude: W 111.6969    Latitude: N 34.33407    Allotment: Skeleton Ridge

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, Streambank shearing/degradation, Grazing on grasses and herbs, Livestock trails, Browsing on streamside woody recruitment, Water quality degradation, Wallowing in a dry, sandy area. Estimated age of grazing impact: Within the last week:
Survey Date: May 29, 2019  Survey Time: 16:46  Stream: Verde River
Longitude: W 111.69632  Latitude: N 34.34344  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Trampled vegetation, Feces, Grazing on grasses and herbs, Livestock trails, Tracks.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 29, 2019   Survey Time: 16:41   Stream: Verde River
Longitude: W 111.69629   Latitude: N 34.34371   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Livestock trails, Tracks, Trampled vegetation.

Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 29, 2019    Survey Time: 16:29    Stream: Verde River
Longitude: W 111.69633    Latitude: N 34.34418    Allotment: Skeleton Ridge

Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Feces in water or at water's edge, Streambank shearing/degradation at water's edge in sedge patch. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019  Survey Time: 14:00  Stream: Verde River
Longitude: W 111.70378  Latitude: N 34.21068  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019   Survey Time: 13:34   Stream: Verde River
Longitude: W 111.70556   Latitude: N 34.21371   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Streambank shearing/degradation, Browsing on streamside woody recruitment, Grazing on grasses and herbs. Tracks in mud. Pushed over coyote willow.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 12, 2019    Survey Time: 12:36    Stream: Verde River
Longitude: W 111.70295    Latitude: N 34.2239    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation.    Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019  Survey Time: 12:06  Stream: Verde River
Longitude: W 111.70455  Latitude: N 34.2263  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Streambank shearing/degradation.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019    Survey Time: 11:56    Stream: Verde River
Longitude: W 111.7041    Latitude: N 34.22661    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Feces, Streambank shearing/degradation.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019    Survey Time: 11:39    Stream: Verde River
Longitude: W 111.70168    Latitude: N 34.2289    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, browsing on woody plants, Feces in water or at water’s edge, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019    Survey Time: 10:56    Stream: Verde River
Longitude: W 111.69945    Latitude: N 34.23008    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Feces in water or at water’s edge, Streambank shearing/degradation.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019   Survey Time: 10:30   Stream: Verde River
Longitude: W 111.69861   Latitude: N 34.23345   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Live cow.
Grazing impacts observed at this location: A live or dead stock animal. Estimated age of grazing impact: Today:
Survey Date: Jun 12, 2019  Survey Time: 10:24  Stream: Verde River
Longitude: W 111.69921  Latitude: N 34.23483  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Browsing on streamside woody recruitment, Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Feces in water or at water's edge. Heavy grazing on cottonwood regen along down trees along this cow path.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019    Survey Time: 09:47    Stream: Verde River
Longitude: W 111.70015    Latitude: N 34.23956    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 12, 2019  Survey Time: 09:42  Stream: Verde River
Longitude: W 111.69961  Latitude: N 34.23975  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Browsing on streamside woody recruitment, Tracks, Streambank shearing/degradation.  Browsed cottonwood. Streambank ripped up in process.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019    Survey Time: 18:55    Stream: Verde River
Longitude: W 111.69758    Latitude: N 34.2451    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  

Grazing impacts observed at this location: Browsing on streamside woody recruitment, Tracks, Trampled vegetation, Grazing on grasses and herbs. Salix browsing.  

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019  Survey Time: 18:41  Stream: Verde River
Longitude: W 111.69695  Latitude: N 34.24771  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Streambank shearing/degradation.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019  Survey Time: 18:23  Stream: Verde River
Longitude: W 111.69733  Latitude: N 34.24942  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Feces in water or at water’s edge, Grazing on grasses and herbs, Streambank shearing/degradation.  A live or dead stock animal. Two cows in picture. One’s head and one’s butt.  Estimated age of grazing impact: Today:
Survey Date: Jun 11, 2019  Survey Time: 18:15  Stream: Verde River
Longitude: W 111.69712  Latitude: N 34.24984  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Trampled vegetation, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation. Two tiers of chiseling. The lower seems to have been made inaccessible by flood debris, so cows started a new trail slightly higher. I can hear another cow across the river mooing.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019    Survey Time: 17:57    Stream: Verde River
Longitude: W 111.69601    Latitude: N 34.25158    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Browsing on woody plants, Feces, Tracks, Livestock trails. Just saw the cow. Did not see if it had tags. Estimated age of grazing impact: Today:
Survey Date: Jun 11, 2019   Survey Time: 17:54   Stream: Verde River
Longitude: W 111.6957   Latitude: N 34.25189   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.   Grazing impacts observed at this location: Feces, Tracks, Livestock trails. Fresh.   Estimated age of grazing impact: Today:
Survey Date: Jun 11, 2019  Survey Time: 17:51  Stream: Verde River
Longitude: W 111.69541  Latitude: N 34.25235  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.

Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Streambank shearing/degradation. Cows come down from the right. You can see how these two small tiers are being chiseled back. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019    Survey Time: 17:40    Stream: Verde River
Longitude: W 111.69459    Latitude: N 34.25294    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Streambank shearing/degradation, Grazing on grasses and herbs.
Estimated age of grazing impact: Today:
Survey Date: Jun 11, 2019    Survey Time: 17:38    Stream: Verde River
Longitude: W 111.69463    Latitude: N 34.25292    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Feces in water or at water's edge, Trampled vegetation, Tracks, Grazing on grasses and herbs. Fresh.    Estimated age of grazing impact: Today:
Survey Date: Jun 11, 2019    Survey Time: 17:31    Stream: Verde River
Longitude: W 111.69386    Latitude: N 34.25401    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Tracks.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019    Survey Time: 15:01    Stream: Verde River
Longitude: W 111.69041    Latitude: N 34.25899    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Streambank shearing/degradation. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019   Survey Time: 14:57   Stream: Verde River
Longitude: W 111.69046   Latitude: N 34.25934   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Streambank shearing/degradation. Tracks in water.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019    Survey Time: 14:48    Stream: Verde River
Longitude: W 111.6879    Latitude: N 34.26101    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Feces. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019    Survey Time: 13:51    Stream: Verde River
Longitude: W 111.68156    Latitude: N 34.26242    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Streambank shearing/degradation. Grazed cattail.    Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019    Survey Time: 12:39    Stream: Verde River
Longitude: W 111.6777    Latitude: N 34.26724    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Tracks, Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on woody plants, Streambank shearing/degradation.    Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019    Survey Time: 12:14    Stream: Verde River
Longitude: W 111.67983    Latitude: N 34.27118    Allotment: Skeleton Ridge

Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Grazing on grasses and herbs, Browsing on woody plants, Tracks.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019   Survey Time: 12:05   Stream: Verde River
Longitude: W 111.68175   Latitude: N 34.27322   Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation.  
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 11, 2019  Survey Time: 11:18  Stream: Verde River  
Longitude: W 111.68373  Latitude: N 34.27956  Allotment: Skeleton Ridge  
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019    Survey Time: 10:55    Stream: Verde River
Longitude: W 111.68484    Latitude: N 34.2812    Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Browsing on streamside woody recruitment, Streambank shearing/degredation, Tracks.
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 11, 2019  Survey Time: 10:30  Stream: Houston Creek
Longitude: W 111.69005  Latitude: N 34.28517  Allotment: Skeleton Ridge
Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Streambank shearing/degradation.  Estimated age of grazing impact: Sometime over the last month:
The following images document cattle presence and grazing damage along the Verde River along the borders of the Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock Allotments:

**Survey Date:** Jun 6, 2019    **Survey Time:** 11:15    **Stream:** Verde River  
**Longitude:** W 111.74311   **Latitude:** N 34.37593    **Allotment:** Hackberry/Pivot Rock  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water.  
**Grazing impacts observed at this location:** Tracks, Feces in water or at water’s edge, Grazing on grasses and herbs, Streambank shearing/degradation, Livestock trails, Trampled vegetation.  
**Estimated age of grazing impact:** Within the last week:
Survey Date: Jun 6, 2019  Survey Time: 11:11  Stream: Verde River
Longitude: W 111.7442  Latitude: N 34.37625 Allotment: Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock. Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Browsing on streamside woody recruitment, Feces in water or at water's edge, Streambank shearing/degradation, Grazing on grasses and herbs, Tracks. Browsing. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 11:06    Stream: Verde River
Longitude: W 111.74531    Latitude: N 34.377    Allotment: Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock

Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Feces. Cottonwood recruit browsed on the left side of photo.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 10:55    Stream: Verde River
Longitude: W 111.74696    Latitude: N 34.37813    Allotment: Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock
Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Livestock trails, Streambank shearing/degradation, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Feces. Serious stream bank chiseling. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 10:37    Stream: Verde River
Longitude: W 111.74998    Latitude: N 34.37917    Allotment: Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock

Data Category: Evidence of livestock impacts to vegetation, soils, or water. Grazing impacts observed at this location: Tracks, Livestock trails, Feces, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 6, 2019    Survey Time: 10:02    Stream: Verde River
Longitude: W 111.75236    Latitude: N 34.38054    Allotment: Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock/Brown Springs

Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: A live or dead stock animal, Browsing on woody plants. Watched it browse Salix. No tags. Estimated age of grazing impact: Today:
Survey Date: Jun 6, 2019    Survey Time: 09:54    Stream: Verde River
Longitude: W 111.75274    Latitude: N 34.38083    Allotment: Skeleton Ridge/Fossil Creek/Hackberry/Pivot Rock/Brown Springs

Data Category: Evidence of livestock impacts to vegetation, soils, or water.    Grazing impacts observed at this location: Browsing on streamside woody recruitment, Grazing on grasses and herbs. Browsed Salix re-sprouts.    Estimated age of grazing impact: Within the last week:
The following images document cattle presences and grazing damage along Fossil Creek at the border of Skeleton Ridge, and Deadman Mesa:

Survey Date: Jun 26, 2019    Survey Time: 09:24    Stream: Fossil Creek
Longitude: W 111.6683    Latitude: N 34.31132    Allotment: Skeleton Ridge/Deadman Mesa

Data Category: Evidence of livestock impacts to vegetation, soils, or water.  Grazing impacts observed at this location: Tracks, Livestock trails, Streambank shearing/degradation. Trail coming down to river Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019  
Survey Time: 09:04  
Stream: Fossil Creek  
Longitude: W 111.66618  
Latitude: N 34.31385  
Allotment: Skeleton Ridge/Deadman Mesa  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Streambank shearing/degradation, Feces  
Estimated age of grazing impact: Within the last week
Survey Date: Jun 25, 2019   Survey Time: 19:07   Stream: Fossil Creek
Longitude: W 111.6634   Latitude: N 34.31787   Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces, Tracks
Estimated age of grazing impact: Today
Survey Date: Jun 25, 2019    Survey Time: 18:58    Stream: Fossil Creek
Longitude: W 111.66419    Latitude: N 34.31956    Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week
Survey Date: Jun 25, 2019    Survey Time: 18:53    Stream: Fossil Creek
Longitude: W 111.66384    Latitude: N 34.32093    Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces, Grazing on grasses and herbs. Estimated age of grazing impact: Sometime over the last month
Survey Date: Jun 25, 2019       Survey Time: 18:37       Stream: Fossil Creek
Longitude: W 111.66463       Latitude: N 34.32293       Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 25, 2019   Survey Time: 18:22   Stream: Fossil Creek
Longitude: W 111.6631   Latitude: N 34.32527   Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, Streambank shearing/degradation
Note: severe bank chiseling

Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 25, 2019    Survey Time: 18:06    Stream: Fossil Creek
Longitude: W 111.66365    Latitude: N 34.32689    Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 25, 2019  Survey Time: 17:13  Stream: Fossil Creek
Longitude: W 111.66461  Latitude: N 34.33489  Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 25, 2019  Survey Time: 17:04  Stream: Fossil Creek
Longitude: W 111.66459  Latitude: N 34.33506  Allotment: Skeleton Ridge/Deadman Mesa
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Streambank shearing/degradation
Estimated age of grazing impact: Sometime over the last month:
The following images document cattle presences and grazing damage along Verde River within the Cedar Basin Allotment:

**Survey Date:** May 31, 2019  **Survey Time:** 13:04  **Stream:** Verde River  
**Longitude:** W 111.6644  **Latitude:** N 34.28937  **Allotment:** Cedar Bench  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Browsing on streamside woody recruitment, Streambank shearing/degradation, Water quality degradation  
**Estimated age of grazing impact:** Sometime over the last month:
Survey Date: May 31, 2019  Survey Time: 12:55  Stream: Verde River
Longitude: W 111.66385  Latitude: N 34.29165  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Browsing on streamside woody recruitment, Streambank shearing/degradation, Water quality degradation
Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 11:31  Stream: Verde River
Longitude: W 111.6679  Latitude: N 34.29704  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water

**Grazing impacts observed at this location:** Tracks, Livestock trails, Trampled vegetation, Feces in water or at water’s edge, Browsing on woody plants, Grazing on grasses and herbs, Streambank shearing/degradation, Browsing on streamside woody recruitment

**Estimated age of grazing impact:** Within the last week:
Survey Date: May 31, 2019  Survey Time: 10:28  Stream: Verde River
Longitude: W 111.67475  Latitude: N 34.29228  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on woody plants, Browsing on streamside woody recruitment, Streambank shearing/degradation, Water quality degradation
Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019    Survey Time: 18:24    Stream: Verde River
Longitude: W 111.6811    Latitude: N 34.30165    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Browsing on woody plants, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019   Survey Time: 18:03   Stream: Verde River
Longitude: W 111.67624   Latitude: N 34.30474   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Wallowing in a wet streamside area, Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Water quality degradation  Note: Cattails browsed.
   Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 16:31  Stream: Verde River
Longitude: W 111.68059  Latitude: N 34.28421  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces, Grazing on grasses and herbs
Note: Saw the herd. 6-8 cows. Fresh poop.
Estimated age of grazing impact: Today:
Survey Date: May 31, 2019    Survey Time: 16:26    Stream: Verde River
Longitude: W 111.6794    Latitude: N 34.28361    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Browsing on woody plants.  Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 31, 2019  Survey Time: 16:18  Stream: Verde River
Longitude: W 111.67696  Latitude: N 34.28346  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Streambank shearing/degradation, Grazing on grasses and herbs, Water quality degradation
Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 31, 2019  Survey Time: 15:52  Stream: Verde River
Longitude: W 111.67323  Latitude: N 34.28377  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Grazing on grasses and herbs, Feces in water or at water's edge, Browsing on streamside woody recruitment, Streambank shearing/degradation. Note: Area across river is blasted.  Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019   Survey Time: 15:36   Stream: Verde River
Longitude: W 111.67062   Latitude: N 34.28281   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water’s edge, Browsing on streamside woody recruitment, Streambank shearing/degradation, Livestock trails. Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 15:29  Stream: Verde River
Longitude: W 111.6694  Latitude: N 34.28196  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Feces in water or at water’s edge  Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 15:19  Stream: Verde River
Longitude: W 111.66818  Latitude: N 34.28201  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Grazing on grasses and herbs, Streambank shearing/degradation, Tracks, Trampled vegetation
Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 31, 2019   Survey Time: 15:05   Stream: Verde River
Longitude: W 111.66679   Latitude: N 34.28346   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Browsing on woody plants, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 13:02  Stream: Verde River
Longitude: W 111.66343  Latitude: N 34.28896  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, A large area of disturbed or exposed soils, Trampled vegetation, Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation  Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 11:28  Stream: Verde River
Longitude: W 111.6688  Latitude: N 34.29688  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation  Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 10:30  Stream: Verde River
Longitude: W 111.67487  Latitude: N 34.29289  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Streambank shearing/degradation
Note: Continuous stream bank degradation.
Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019  Survey Time: 10:20  Stream: Verde River
Longitude: W 111.67501  Latitude: N 34.29144  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces (yeah, that's poop), Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: May 31, 2019    Survey Time: 10:04    Stream: Verde River
Longitude: W 111.67652    Latitude: N 34.29116    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation    Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019  Survey Time: 19:15  Stream: Verde River
Longitude: W 111.68207  Latitude: N 34.29615  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019  Survey Time: 18:44  Stream: Verde River
Longitude: W 111.68215  Latitude: N 34.29843  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation
Estimated age of grazing impact: Sometime over the last month:
Longitude: W 111.67843    Latitude: N 34.30318    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation, Feces
Estimated age of grazing impact: Sometime over the last month:
Survey Date: May 30, 2019  Survey Time: 18:05  Stream: Verde River
Longitude: W 111.67631  Latitude: N 34.30461  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Streambank shearing/degradation Note: Huge area of disturbed soil and degraded streambank. Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019  Survey Time: 18:00  Stream: Verde River
Longitude: W 111.67611  Latitude: N 34.30505  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/ degradation
Estimated age of grazing impact: Sometime over the last month:
The following images document cattle presences and grazing damage along the East Verde River within the Cedar Bench Allotment:

**Survey Date:** Jun 27, 2019  **Survey Time:** 10:48  **Stream:** East Verde River  
**Longitude:** W 111.6051  **Latitude:** N 34.26357  **Allotment:** Cedar Bench  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Tracks, Livestock trails, Water quality degradation.  
**Note:** Cow track clearly visible along this gravel bar to the other bank.  
**Estimated age of grazing impact:** Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 10:43    Stream: East Verde River
Longitude: W 111.60527    Latitude: N 34.26365    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Grazing on grasses and herbs, Streambank shearing/degradation

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 10:06    Stream: East Verde/The Gorge
Longitude: W 111.60469    Latitude: N 34.26588    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Browsing on streamside woody recruitment, Grazing on grasses and herbs, Streambank shearing/degradation, Trampled vegetation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 09:02    Stream: East Verde River
Longitude: W 111.60831    Latitude: N 34.2635    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Browsing on streamside woody recruitment, Grazing on grasses and herbs
Note: Cows are chiseling away this little outcrop of soils as they cross through this bedrock canyon
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019  Survey Time: 08:13  Stream: East Verde River
Longitude: W 111.61667  Latitude: N 34.26021  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 19:06    Stream: East Verde River
Longitude: W 111.61856    Latitude: N 34.26094    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019   Survey Time: 18:55   Stream: East Verde River
Longitude: W 111.61973   Latitude: N 34.26299   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs, Feces in water or at water's edge, Streambank shearing/degradation.   Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019  Survey Time: 18:43  Stream: East Verde River
Longitude: W 111.62107  Latitude: N 34.26361  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Streambank shearing/degradation, Grazing on grasses and herbs
Note: just saw cow cross river. have video.  Estimated age of grazing impact: Today:
Survey Date: Jun 26, 2019    Survey Time: 18:33    Stream: East Verde River
Longitude: W 111.62257    Latitude: N 34.26208    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal Note: 6 cows on ridge above river. No fencing. Estimated age of grazing impact: Today:
Survey Date: Jun 26, 2019    Survey Time: 18:27    Stream: East Verde River
Longitude: W 111.62293    Latitude: N 34.26197    Allotment: Cedar Bench

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Feces

Note: Extreme bank chiseling  

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 17:51    Stream: East Verde River
Longitude: W 111.62414    Latitude: N 34.2648    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Wallowing in a wet streamside area, Feces in water or at water's edge, Browsing on woody plants
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 26, 2019  Survey Time: 17:38  Stream: East Verde River
Longitude: W 111.62516  Latitude: N 34.26643  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 26, 2019    Survey Time: 17:19    Stream: East Verde River
Longitude: W 111.62511    Latitude: N 34.267    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019  Survey Time: 17:08  Stream: East Verde River
Longitude: W 111.6276  Latitude: N 34.268  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Note: grass is severely grazed.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 16:38    Stream: East Verde River
Longitude: W 111.63333    Latitude: N 34.27044    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation
Note: Huge compacted area. On trail leading straight from Verde.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019   Survey Time: 16:21   Stream: East Verde River
Longitude: W 111.63302   Latitude: N 34.27391   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Tracks
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 16:12    Stream: East Verde River
Longitude: W 111.63396    Latitude: N 34.27501    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation Note: grass grazed    Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 15:36    Stream: East Verde River
Longitude: W 111.63878    Latitude: N 34.27661    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Browsing on woody plants, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 15:26    Stream: East Verde River
Longitude: W 111.64096    Latitude: N 34.27777    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019   Survey Time: 14:42   Stream: East Verde River
Longitude: W 111.64582   Latitude: N 34.28038   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal, Browsing on woody plants, Tracks, Trampled vegetation, Wallowing in a dry, sandy area, Livestock trails, Feces, Grazing on grasses and herbs Note: 2 cows 2 calves   Estimated age of grazing impact: Today:
Survey Date: Jun 26, 2019  Survey Time: 14:01  Stream: East Verde River
Longitude: W 111.65486  Latitude: N 34.28427  Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Note: cat tail grazed in water  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 12:19    Stream: East Verde River
Longitude: W 111.65925    Latitude: N 34.28551    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 26, 2019    Survey Time: 12:12    Stream: East Verde River
Longitude: W 111.6594    Latitude: N 34.28599    Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
The following images document cattle presences and grazing damage along the Verde River within the Cedar Bench Allotment:

**Survey Date:** May 30, 2019  **Survey Time:** 18:14  **Stream:** Verde River  
**Longitude:** W 111.67843  
**Latitude:** N 34.30318  
**Allotment:** Cedar Bench  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation, Feces  
**Estimated age of grazing impact:** Sometime over the last month:
Survey Date: May 30, 2019   Survey Time: 18:05   Stream: Verde River
Longitude: W 111.67631   Latitude: N 34.30461   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Streambank shearing/degradation
Note: Huge area of disturbed soil and degraded streambank. Estimated age of grazing impact: Within the last week:
Survey Date: May 30, 2019   Survey Time: 18:00   Stream: Verde River
Longitude: W 111.67611   Latitude: N 34.30505   Allotment: Cedar Bench
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation

Estimated age of grazing impact: Sometime over the last month:

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: A live or dead stock animal. Note: No fence observed in these uplands above Fossil, East Verde, and Verde. Estimated age of grazing impact: Today:
Survey Date: May 31, 2019    Survey Time: 11:15    Stream: Verde River
Longitude: W 111.67072    Latitude: N 34.29717    Allotment: Cedar Bench
Data Category: Condition of range infrastructure and developments. Broken or downed fence
Note: Extensive downed fence:
Survey Date: Jun 1, 2019   Survey Time: 08:00   Stream: Verde River
Longitude: W 111.70171   Latitude: N 34.33578   Allotment: Skeleton Ridge
Data Category: Condition of range infrastructure and developments. Broken or downed fence. Gate missing, open, or non-functioning. Note: Open gate 100 feet east. Open for a long time:
Survey Date: May 31, 2019  Survey Time: 17:51  Stream: 
Longitude: W 111.69085  Latitude: N 34.28496  Allotment: Cedar Bench 
Data Category: Condition of range infrastructure and developments. Broken or downed fence. 
Note: Cow trail leads over fence:
Survey Date: May 31, 2019  Survey Time: 12:58  Stream: Verde River
Longitude: W 111.66329  Latitude: N 34.29029  Allotment: Cedar Bench
Data Category: Condition of range infrastructure and developments. Broken or downed fence. Missing fence. Note: Trail on both sides of fence:
Survey Date: May 31, 2019    Survey Time: 11:21    Stream: Verde River
Longitude: W 111.67092    Latitude: N 34.29687    Allotment: Cedar Bench
Data Category: Condition of range infrastructure and developments. Gate missing, open, or non-functioning. Note: No gate. Entire fence is dysfunctional.
Survey Date: May 31, 2019   Survey Time: 11:19   Stream: Verde River
Longitude: W 111.67094   Latitude: N 34.29683   Allotment: Cedar Bench
Data Category: Condition of range infrastructure and developments. Note: Fence down. Active trail leading over it.:
Survey Date: May 31, 2019  Survey Time: 09:35  Stream: Verde River
Longitude: W 111.6801  Latitude: N 34.29429  Allotment: Cedar Bench
Data Category: Condition of range infrastructure and developments. Missing fence. Broken or downed fence. Gate missing, open, or non-functioning.  Note: Heavy use livestock trail to river.
Survey Date: May 30, 2019  Survey Time: 17:52  Stream: Verde River  
Longitude: W 111.67588  Latitude: N 34.30484  Allotment: Cedar Bench  
Data Category: Condition of range infrastructure and developments. Broken or downed fence.  
Note: Major livestock trail crosses the downed fence, connecting uplands to the riparian.
On May 6, 2016, USFWS evaluated the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona. USFWS’ May 6, 2016, Biological Opinion includes “[t]he eight livestock range allotments included in this consultation are the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West.”

Specifically, for the Fossil Creek Allotment, the May 6, 2016, Biological Opinion says,

"Your letter also requested our concurrence that the proposed action may affect, but is not likely to adversely affect: ... the northern Mexican gartersnake, the narrow-headed gartersnake, proposed critical habitat for both gartersnakes, the roundtail chub and the proposed threatened headwater chub (Gila ligra) on the Fossil Creek Allotment [Pages 1-2] ...

APPENDIX A – CONCURRENCES ...

Fossil Creek Range Allotment

Northern Mexican gartersnake and its proposed critical habitat

We concur with your determination that the proposed action may affect, but will not likely adversely affect, the northern Mexican gartersnake in Fossil Creek. We base this concurrence on the following:

• ... Livestock grazing does not occur in riparian habitat on the Fossil Creek Allotment ...

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 threatened narrow-headed gartersnake and its proposed critical habitat. We base this concurrence on the following:

• ... Livestock grazing does not occur in riparian habitat on the Fossil Creek Allotment ...

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80 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.

81 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.
Roundtail and headwater chubs

We concur with your determination that the proposed action may affect, but will not likely adversely affect, the proposed threatened roundtail or headwater chub in Fossil Creek. We base this concurrence on the following:

• ... Livestock will have only one access point to Fossil Creek (Boulder Water Gap) for a limited time each year; therefore, direct effects to roundtail and headwater chub from the proposed action will be insignificant and discountable. ..." [Pages 40-41]

We include quotations from this May 6, 2016, Biological Opinion on Roundtail Chub because (1) we, as well as does every recognized, published desert fish expert, believe that the entire Roundtail Chub taxon qualifies for Endangered Species Act protection, and (2) USFWS "remains committed to working closely with partner agencies such as the Arizona Game and Fish Department and the New Mexico Department of Game and Fish and others to prevent declines of the newly recognized roundtail chub.82

Further, USFWS' October 2017, General Species Information for Roundtail chub says;

"REASON FOR DECLINE/VULNERABILITY: Roundtail chub populations have declined due to a combination of habitat loss and degradation related to dams, diversions, groundwater pumping, mining, development, recreation, improper livestock grazing, and competition and predation from non-native fishes. Global climate change is anticipated to worsen the effects of these threats. The lower Colorado River DPS of roundtail chub occupy only 18% of their historical range."83

On February 28, 2002, USFWS Biological Opinion evaluated "On-going and Long-term Grazing on the Tonto National Forest."84 Cedar Bench and Skeleton Ridge are mentioned in passing:

"In 2000, two lawsuits were filed (Center for Biological Diversity vs. United States Forest Service CIV00-594TUC-JC, CIV00-679TUC-JCC) alleging that the US Forest Service had violated section 7(d) of the Act by authorizing, implementing, managing, and directing certain grazing allotments before completing the required consultations. Specifically on the Tonto National Forest, the lawsuits named 14 allotments lacking current section 7 consultation for loach minnow and/or spikedace critical habitat (Cedar Bench, Deadman, Del Shay, Diamond Butte, Gisela, Greenback, Hardt Creek, Indian Gardens, Seventy-six, Skeleton Ridge, Soldier Camp, Star Valley, Tonto Basin, and Walnut

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84 Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Mr. Karl Siderits, USDA Tonto National Forest Supervisor; RE: Biological Opinion for ongoing grazing management on 20 allotments on the Tonto National Forest; February 28, 2002.
grazing allotments). Among other requests, the plaintiffs requested the agency take the necessary actions to initiate and complete consultation with the Service on the individual allotments to insure that such grazing allotments do not destroy or adversely modify designated critical habitat for the two fishes. In response to this litigation, you [Forest Service] produced biological assessments (USDA Forest Service 2001a, USDA Forest Service 2001b) of the effects of the Forest’s ongoing grazing on critical habitat of loach minnow (Tiaroga cobitis) and spikedace (Meda fulgida) on March 12, 2001, and April 2, 2001. For those allotments which were already a part of this consultation (Buzzard Roost, Christopher Mountain/Ellinwood, Deadman Mesa, Devil’s Canyon, H-4, Payson/Cross V, Seventy Six, and Star Valley), we incorporated your analysis and address critical habitat on those allotments herein. " [Page 7]

On the Tonto National Forest during the winter of 1999/2000, cattle caused significant damage. Along the upper Verde River, foraging and trampling of cottonwood and willow caused severe damage to riparian areas of the Skeleton Ridge and Cedar Bench allotments because of reduced herbaceous winter time forage and mild temperatures (M. Ross, Tonto National Forest, pers. comm., 2000). ... In the Forest’s June 21, 2000 project amendment, they estimated that use of herbaceous grasses in the riparian areas was 80 to 100 percent. With continued drought expected and infrequent rain and flooding occurring in the arid Southwest, this event may have set back riparian development toward flycatcher nesting habitat for a number of years. [Pages 113-114.]

Table 24. Agency actions that have undergone formal section 7 consultation and levels of incidental take permitted for the southwestern willow flycatcher rangewide. ... Cedar Bench allotment (Yavapai) 1995 Tonto NF [Indeterminable [Incidental Take Anticipated] .... Skeleton Ridge (Yavapai) 1997 Tonto NF Indeterminable [Incidental Take Anticipated]. [Page 184.]

The February 28, 2002, USFWS Biological Opinion says of the Deadman Mesa Allotment,

APPENDIX B – CONCURRENCES ...

COLORADO PIKEMINNOW (Ptychocheilus lucius) ...

Operation of Deadman Mesa allotment for livestock will have effects on the uplands that translate to effects on streams and streamflow. Riparian and upland conditions on this allotment are good, with only some areas of unsatisfactory soils. Livestock do not have access to Fossil Creek from this allotment. [Page 194.]

RAZORBACK SUCKER (Xyrauchen texanus) ...

Grazing in the Deadman Mesa allotment may affect the razorback sucker population and its critical habitat. As there is a complete discussion of the effects of
livestock grazing on aquatic habitats elsewhere in this biological opinion and in the supporting materials from the Forest Service, that information will not be repeated here. Operation of Deadman Mesa allotment for livestock will have effects on the uplands that translate to effects on streams and streamflow. Riparian and upland conditions on this allotment are good, with only some areas of unsatisfactory soils; and this may translate to a lower level of such effects than in areas of unsatisfactory conditions. Livestock do not have access to Fossil Creek from this allotment. [Page 195.]

SPIKEDACE

The biological assessment identified Deadman Mesa and H-4 as allotments where grazing may affect, but was not likely to adversely affect, spikedace. Deadman Mesa is along Fossil Creek in the Verde River drainage and H-4 is in the Tonto Creek drainage. The Forest reached this determination for the Deadman Mesa allotment because livestock are excluded from Fossil Creek, watershed condition is satisfactory, and livestock grazing is not altering potential habitat. ...

The Forest used guidance criteria which were concurred with by the Service to evaluate effects of grazing on spikedace critical habitat. According to the criteria, several factors must be met to conclude grazing is not likely to adversely affect spikedace critical habitat. These are:

1. Livestock are permitted on the allotment within the watershed that contains critical habitat, and;

2. livestock do not have direct access to critical habitat, perennial streams, or perennial interrupted streams within the allotment, and; ...

4. based on recent data using accepted Forest Service evaluation methods, aquatic and riparian conditions, including constituent elements of critical habitat, in the watershed are in satisfactory condition and improving, and;

5. appropriate monitoring of aquatic and riparian conditions, including constituent elements of critical habitat, is in place. [Page 196-197.]

GILA TOPMINNOW

The status of the species and much of the environmental baseline for the Gila topminnow was discussed in the formal section of this biological opinion. Deadman Mesa is along Fossil Creek in the Verde River drainage. The Forest reached this determination because livestock are excluded from Fossil Springs, watershed condition is satisfactory, and livestock grazing is not altering potential habitat. ...
Conclusion

After reviewing the status of the Gila topminnow, the environmental baseline for the action area, and the effects of the proposed action, the Service concurs with your finding that the operation of the Deadman Mesa and Cross V livestock allotments may affect, but is not likely to adversely affect, Gila topminnow. [Page 198.]

DESSERT PUPFISH

The status of the species and much of the environmental baseline for the desert pupfish was discussed in the formal section of this biological opinion. As previously stated, the pupfish does not occur on the Forest. However, one allotment, Deadman Mesa, may have potential unoccupied habitat. Deadman Mesa allotment has the greatest potential for supporting desert pupfish in Fossil Creek, as it supports deep pools with abundant submergent and emergent vegetation. Streambanks are stable and vegetation consists of abundant woody species and herbaceous vegetation. Although desert pupfish does not exist there now, there are many native fish in Fossil Creek such as speckled dace (Rhinichthys osculus), longfin dace (Agosia chrysogaster), roundtail chub (Gila robusta), and desert and Sonoran suckers (Pantosteus clarki and Catostomus insignis). The area south of Fossil Creek (and its spring) is fenced off and access by livestock is restricted; livestock grazing is excluded year-long from this habitat. Fossil Creek and its spring on the Deadman Mesa allotment have been recommended for restocking with desert pupfish. The constant discharge and water temperature of 43 cfs 73o F should be suitable habitat. Desert pupfish reproduce year round in the constant temperatures of springs.

Conclusion

After reviewing the status of the desert pupfish, the environmental baseline for the action area, and the effects of the proposed action, the Service concurs with your finding that the operation of the Deadman Mesa allotment may affect, but is not likely to adversely affect, desert pupfish, due to the uniqueness of both of these habitats, and their exclusion from grazing, [Pages 198-199.]


85 Correspondence, from Sam F. Spiller, USFWS Arizona Field Supervisor, to: Mr. Charles Bazan, USDA Tonto National Forest Supervisor; RE: Biological Opinion "on the effects of livestock grazing on the subject allotments on the endangered razorback sucker (Xyrauchen texanu) and southwestern willow flycatcher (Empidonax traillii extimus), and the experimental non-essential population of Colorado squawfish (Ptychocheilus lucius) in the Verde River. Designated critical habitat for the razorback sucker in the Verde River is found within the action area as is proposed critical habitat for the southwestern willow flycatcher."; June 25, 1997.
The June 25, 1997, USFWS Biological Opinion concluded,

"SUMMARY...Terms and conditions: For livestock use of riparian areas, monitoring will occur at least three times while livestock are in the pasture and, once livestock leave the pasture, utilization of riparian forage and conditions of streambanks will be measured. For overuse of riparian areas by livestock, the Forest Service should implement suitable management strategies to reduce livestock use of the riparian areas.86 ...

Razorback Sucker Critical Habitat...Although the historic conditions in the Verde River have been altered by water and land uses in the watershed, the river continues to have flows and physical habitat conditions that are suitable for the development of a razorback sucker population. Suitable habitat for all life stages appears to be present. Normal flooding in the Verde River occurs during the spawning period of the razorback sucker, thereby providing flooded bottomlands that have been shown to be important to young fish.87 ...

CONCLUSION

After reviewing the status of the razorback sucker and its designated critical habitat in the action area, the environmental baseline, effects of proposed implementation of the livestock grazing strategy, and the cumulative effects, it is the Service's biological opinion that the actions described in the assessment and this opinion, are not likely to jeopardize the continued existence of the razorback sucker or adversely modify its designated critical habitat in the Verde River.

After reviewing the status of the southwestern willow flycatcher and its proposed critical habitat in the action area, the environmental baseline, effects of proposed implementation of the livestock grazing strategy, and the cumulative effects, it is the Service's biological opinion that the actions described in the assessment and this opinion are not likely to jeopardize the continued existence of the southwestern willow flycatcher nor adversely modify proposed critical habitat.88 ...

The Service concludes that incidental take from the proposed action will be considered to be exceeded if either of the following two conditions are met:

1. That riparian recovery is halted or significantly slowed within the reach of the river containing the proposed action by the action of livestock in the riparian areas.

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86 Id., Cover page.
87 Id., page 21.
88 Id., page 29.
Riparian recovery can be defined through: (1) no more than light (less than 40 percent use of apical stems) use of riparian woody species by livestock, (2) utilization of herbaceous species in the riparian zone at less than 40 percent, and (3) minimal bank instability (in this case, by impact by livestock), defined as 20 percent or less of the total.

2. That watershed conditions do not continue to improve to a satisfactory condition under the proposed livestock management. Improving watershed conditions can be defined through improvements shown in trend and/or condition of rangelands on the allotments.\(^8\)...

The June 25, 1997, USFWS Biological Opinion requires on the Skeleton Ridge and Ike's Backbone Allotments,

"Reasonable and Prudent Measures for the Razorback Sucker

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the take of the razorback sucker:

1. Measures will be taken to monitor livestock use of the riparian areas of pastures to which livestock have access.

2. If livestock use in the riparian areas is excessive, measures will be taken to reduce or eliminate livestock use of these areas.

3. Measures will be taken to improve watershed conditions.

Terms and conditions for the Razorback Sucker

In order to be exempt from the prohibitions of section 9 of the ESA, the Forest Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

The following terms and conditions are necessary to implement reasonable and prudent measure 1:

1. In all pastures with river access, monitoring of riparian conditions, including livestock use, will be accomplished at least two times while livestock are in the pasture, once during the mid-point of the grazing period and once at the end of the grazing period.

2. After livestock leave pastures with river access, the degree of use by livestock and condition of streambanks that are attributable to livestock will be measured using standard practices for such measurements.

\(^8\) Id., page 30.
The following terms and conditions are necessary to implement reasonable and prudent measure 2:

1. If monitoring under reasonable and prudent measure 1 indicates that livestock are having a significant adverse effect to riparian restoration, then the Forest Service must determine and implement suitable management strategies to reduce the effects to riparian areas.

The following terms and conditions are necessary to implement reasonable and prudent measure 3:

1. If watershed conditions do not improve under the proposed grazing management, the Forest Service will review the management and develop new management that does result in improvement to watershed conditions. ..."90

Terms and Conditions for the Southwestern Willow Flycatcher

In order to be exempt from the prohibition of section 9 of the ESA, the Forest Service needs to comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

The following terms and conditions are necessary to implement reasonable and prudent measure 1:

1. In all pastures with river access, standardized monitoring of riparian conditions, including livestock use, shall be accomplished at least two times during the grazing period; once at the mid-point of the grazing period and once at the end of the grazing period.

The following terms and conditions are necessary to implement reasonable and prudent measure 2:

2. If standardized monitoring under reasonable and prudent measure 1 indicates that use of the apical stems of woody riparian vegetation exceeds 40% (frequency of occurrence), then the Forest Service must remove livestock from the riparian area in the affected pasture immediately and shall defer use of the riparian area in the affected pasture in the following year.

90 Id., pages 30-31.
The following terms and conditions are necessary to implement reasonable and prudent measure 3:

1. In all pastures adjacent to the river for which river access is supposed to be precluded, sweeps of the river corridor shall be made monthly during the period each pasture is being grazed to monitor for livestock.

2. In all pastures adjacent to the river and abutting allotments managed by adjacent Prescott and Coconino National Forests, sweeps of the river corridor shall be made twice a month to monitor for livestock.

The following terms and conditions are necessary to implement reasonable and prudent measure 4:

1. If livestock are found during monitoring or during observations incidental to other activities, the Forest Service shall be responsible for removing livestock immediately.

The following terms and conditions are necessary to implement reasonable and prudent measure 5:

1. To establish a baseline from which to monitor take for the southwestern willow flycatcher, the Forest Service shall complete a standardized mapping study within three years of the date of this biological opinion to determine the distribution, sizes, extent, and types of riparian habitats (including non-vegetated areas that, absent other limiting factors, would support riparian vegetation) on the river corridor through the allotment.

The mapping study should be completed using aerial photography taken during the growing season. Followup mapping and monitoring shall be conducted once every 5 years from the completion of the baseline mapping study to evaluate levels of take.

Thus, the baseline study should be completed by 2000, and the first followup study completed by 2005, etc., for the life of the management plan. To remove the potential effects of scouring floods from analyses of take, the threshold for take will not be considered exceeded if a scouring flood event occurs during the two years preceding any of the followup mapping studies. Such scouring will be shown to have occurred by recording on-site observations made during monitoring, correlated with data from Tangle Creek gauging station, and documentation with photographs from permanent photo points, taken before and after the scouring.

Review requirements
The Forest Service will provide the Service with a yearly report on the livestock management and monitoring done for this proposed action. ...”  

On September 8, 1995, USFWS evaluated the effects of the Cedar Bench Allotment Management on Razorback Sucker. The September 8, 1995, Biological Opinion says, "SUMMARY ... Not likely to destroy or adversely modify its designated critical habitat. 

INCIDENTAL TAKE STATEMENT: ... 

The Service concludes that the level of incidental take from the proposed action will be considered to be exceeded if riparian recovery is halted or significantly retarded by livestock use of the riparian zone. 

REASONABLE AND PRUDENT MEASURES: Reasonable and prudent measures were provided requiring that livestock use of the riparian areas of the River Pasture be monitored and that, should monitoring demonstrate that livestock are congregating in the riparian areas of the River Pasture, measures will be taken to reduce or eliminate livestock use of these areas. 

TERMS AND CONDITIONS: Non-discretionary terms and conditions were provided for each of the two reasonable and prudent measures and included for reasonable and prudent measure #1 periodic inspection of riparian areas and an end of the grazing season inspection. To implement reasonable and prudent measure #2, the term and condition provided requires the restriction of grazing in riparian areas by fencing, herding or other means if monitoring should determine such action is necessary. 

While range conditions are generally considered to be in satisfactory condition, a Payson Ranger District wildlife biologist noted degraded aquatic and riparian habitat along the East Verde River and at its confluence with the Verde River in April 1995. 

Past use of the allotment by livestock resulted in unsatisfactory conditions on the watershed and in the riparian areas. 

The topography of the River Pasture results in livestock being able to access the banks of the Verde River, Fossil Creek, and the East Verde River. [Page 13.] ...
The Service concludes that the level of incidental take from the proposed action will be considered to be exceeded if riparian recovery is halted or significantly retarded by livestock use of the riparian zone. Recovery can be achieved through: (1) light browsing on woody species, where browsing on apical stems of riparian seedlings does not exceed 40 percent; (2) low utilization of herbaceous vegetation where utilization of key herbaceous species in the riparian zone does not exceed 40 percent, and (3) minimal bank instability, where up to or less than 20 percent of the streambank is in unstable condition. [Pages 16 - 17] ...

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Forest must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

The following terms and conditions are necessary to implement reasonable and prudent measure 1:

a. During the time the livestock are in the River Pasture, a periodic inspection of the riparian areas will be conducted to determine if livestock are in these areas. This inspection must be completed at least three times during the season of use.

b. At the end of the season of use for the River Pasture, the riparian areas will be inspected for signs of livestock use of the vegetation and for mechanical/physical damage to streambanks caused by livestock use using standard methods.

The following term and condition is necessary to implement reasonable and prudent measure 2:

a. If the monitoring shows excessive use of the riparian areas by livestock, access to these areas will be further restricted." [Pages 17 – 18]

This section of the Verde River watershed is suffering from widespread significant cattle grazing damage. A common theme of the Biological Opinions for USFWS’ concurrences and conclusions that adverse modification of Critical Habitat would not be occurring is the much-repeated statement, "livestock grazing does not occur in riparian habitat" and, "livestock are excluded." Our observations and documentation presented here with our Notice and Center

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96 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona; May 6, 2016.

97 Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Mr. Karl Siderits, USDA Tonto National Forest Supervisor; RE: Biological Opinion for ongoing grazing management on 20 allotments on the Tonto National Forest; February 28, 2002.
(2020) prove USFWS wrong. Livestock grazing is devastating this area. Denial that adverse modification of Critical Habitat is occurring is laughable.

For the Fossil Creek Allotment, we can find not Biological Opinion addressing the effects of livestock grazing on Loach Minnow, Razorback Sucker, and Spikedace.

For the Skeleton Ridge Allotment, we can find no Biological Opinion addressing the effects of livestock grazing on Northern Mexican Gartersnake, Narrow-headed Gartersnake and Yellow-billed Cuckoo and their proposed Critical Habitat, and the effects of livestock grazing on Spikedace and its designated Critical Habitat.

For the Ike’s Backbone Allotment, we can find no Biological Opinion addressing the effects of livestock grazing on Northern Mexican Gartersnake and Narrow-headed Gartersnake and their proposed Critical Habitat, and the effects of livestock grazing on Loach Minnow and Spikedace and their designated Critical Habitat.

For the Cedar Bench Allotment, we can find no Biological Opinion addressing the effects of livestock grazing on Northern Mexican Gartersnake, Narrow-headed Gartersnake and Yellow-billed Cuckoo their proposed Critical Habitat, and the effects of livestock grazing on Loach Minnow, Spikedace and Southwestern Willow Flycatcher and their designated Critical Habitat.

For the Deadman Mesa Allotment, we can find no Biological Opinion addressing the effects of livestock grazing on Loach Minnow and its designated Critical Habitat.
Bull Springs Allotment

Along the East Verde River within the Bull Springs Allotment, we observed and documented 7.90 miles of significant cattle impacts. The affected endangered species and Critical Habitat on the Bull Springs Allotment includes Narrow-headed Gartersnake and its proposed Critical Habitat. The Bull Springs Allotment is on the Tonto National Forest.

The following images document cattle presences and grazing damage along the East Verde River within the Bull Springs Allotment:

Survey Date: Jun 28, 2019    Survey Time: 14:02    Stream: East Verde River
Longitude: W 111.50854    Latitude: N 34.22161    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:

![Image of cattle impact along the East Verde River.](image-url)
Survey Date: Jun 28, 2019  Survey Time: 13:50  Stream: East Verde River
Longitude: W 111.5088  Latitude: N 34.22156  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces, Grazing on grasses and herbs, Trampled vegetation  Note: trail on wrong side of fence.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 13:36    Stream: East Verde River
Longitude: W 111.5114    Latitude: N 34.22504    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces, Grazing on grasses and herbs, Browsing on streamside woody recruitment    Note: fraxinus browse    Estimated age of grazing impact: Within the last week:
Longitude: W 111.51101    Latitude: N 34.22584    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on
grasses and herbs, Streambank shearing/degradation

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 13:11    Stream: East Verde River
Longitude: W 111.51312    Latitude: N 34.22934    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: A live or dead stock animal. Grazing on grasses and herbs. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019   Survey Time: 12:22   Stream: East Verde River
Longitude: W 111.51421   Latitude: N 34.22928   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Streambank shearing/degradation  Note: Directly below LF Ranch; I can see the path up to the property.  Estimated age of grazing impact: Within the last week:
**Survey Date:** Jun 28, 2019  **Survey Time:** 12:11  **Stream:** East Verde River  
**Longitude:** W 111.51781  **Latitude:** N 34.22763  **Allotment:** Bull Springs  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Grazing on grasses and herbs  
**Estimated age of grazing impact:** Within the last week:
Survey Date: Jun 28, 2019   Survey Time: 12:07   Stream: East Verde River
Longitude: W 111.51863   Latitude: N 34.22823   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 12:03    Stream: East Verde River
Longitude: W 111.51998    Latitude: N 34.22867    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 11:44    Stream: East Verde River
Longitude: W 111.52346    Latitude: N 34.23118    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Streambank shearing/degradation, Grazing on grasses and herbs
Note: Aggressive cows caused surveyor to have to stick to high ground, very disturbed below.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 11:40    Stream: East Verde River
Longitude: W 111.52349    Latitude: N 34.2312    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal    Note: At least 10 cows here. Note windmill in background. Cannot see tags or brands in my monocular.
Estimated age of grazing impact: Today:
Survey Date: Jun 28, 2019    Survey Time: 11:24    Stream: East Verde River
Longitude: W 111.52393    Latitude: N 34.23185    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal
Estimated age of grazing impact: Today:
Survey Date: Jun 28, 2019    Survey Time: 10:42    Stream: east verde river
Longitude: W 111.5292    Latitude: N 34.2344    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degadation    Note: just saw two cows run up river
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019  Survey Time: 10:22  Stream: East Verde River
Longitude: W 111.53092  Latitude: N 34.23354  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Note: extreme impacts  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 10:16    Stream: East Verde River
Longitude: W 111.53301    Latitude: N 34.23176    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 09:54    Stream: East Verde River
Longitude: W 111.53669    Latitude: N 34.22897    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, A large area of disturbed or exposed soils, Grazing on grasses and herbs, Feces in water or at water's edge, Streambank shearing/degradation, Browsing on woody plants
Estimated age of grazing impact: Within the last week
Survey Date: Jun 28, 2019  Survey Time: 09:39  Stream: East Verde River
Longitude: W 111.53899  Latitude: N 34.22967  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 09:30    Stream: East Verde River
Longitude: W 111.54079    Latitude: N 34.23211    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Streambank shearing/degradation

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019     Survey Time: 09:16     Stream: East Verde River
Longitude: W 111.54266     Latitude: N 34.23415     Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019   Survey Time: 09:14   Stream: East Verde River
 Longitude: W 111.54311   Latitude: N 34.23453   Allotment: Bull Springs
 Data Category: Evidence of livestock impacts to vegetation, soils, or water
 Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Wallowing in a dry, sandy area, Feces, Grazing on grasses and herbs
 Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019  Survey Time: 09:10  Stream: East Verde River
Longitude: W 111.54423  Latitude: N 34.2351  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, Feces, Grazing on grasses and herbs  Note: major trail coming down from the upland.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019  Survey Time: 08:59  Stream: East Verde River
Longitude: W 111.54622  Latitude: N 34.23513  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation Note: hammered.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 08:16    Stream: East Verde River
Longitude: W 111.5511    Latitude: N 34.23609    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019   Survey Time: 07:54   Stream: East Verde River
Longitude: W 111.55359   Latitude: N 34.2385   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces, Browsing on woody plants, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 28, 2019    Survey Time: 07:49    Stream: East Verde River
Longitude: W 111.55505    Latitude: N 34.23827    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Browsing on streamside woody recruitment, Streambank shearing/degradation    Note: salix browsed
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019   Survey Time: 17:43   Stream: East Verde River
Longitude: W 111.55844   Latitude: N 34.24219   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal, Trampled vegetation, Tracks, Livestock trails, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation   Note: two cows in shade.
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 17:27    Stream: East Verde River
Longitude: W 111.56103    Latitude: N 34.24186    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019   Survey Time: 17:18   Stream: East Verde River
Longitude: W 111.56232   Latitude: N 34.24148   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Water quality degradation   Note: feces in the river   Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019  
Survey Time: 17:16  
Stream: East Verde River

Longitude: W 111.5629  
Latitude: N 34.24165  
Allotment: Bull Springs

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, A large area of disturbed or exposed soils, Feces in water or at water's edge, Browsing on streamside woody recruitment, Streambank shearing/degradation

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019  Survey Time: 17:11  Stream: East Verde River
Longitude: W 111.56387  Latitude: N 4.24253  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Trampled vegetation, Streambank shearing/degradation
Note: tracks visible in and out of water
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 16:56    Stream: East Verde River
Longitude: W 111.56865    Latitude: N 4.24415    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Wallowing in a dry, sandy area, Feces, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation    Estimated age of grazing impact: Today:
Survey Date: Jun 27, 2019    Survey Time: 16:54    Stream: East Verde River
Longitude: W 111.56893    Latitude: N 34.24397    Allotment: Bull Springs

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: A live or dead stock animal, Water quality degradation

Note: cow running through river    Estimated age of grazing impact: Today:
Survey Date: Jun 27, 2019    Survey Time: 16:47    Stream: East Verde River
Longitude: W 111.5713    Latitude: N 34.24354    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water’s edge, Feces, Grazing on grasses and herbs, Browsing on woody plants, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 16:16    Stream:
Longitude: W 111.57404    Latitude: N 34.24422    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, A large area of disturbed or exposed soils, Grazing on grasses and herbs Note: aggressive cows below, surveyor had to stay high
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 15:45    Stream: East Verde River
Longitude: W 111.57831   Latitude: N 34.24524   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water    Grazing impacts observed at this location: A live or dead stock animal, Feces in water or at water's edge, Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Wallowing in a dry, sandy area, Browsing on streamside woody recruitment, Streambank shearing/degradation Note: cows that charged surveyor
Estimated age of grazing impact: Today:
Survey Date: Jun 27, 2019    Survey Time: 15:08    Stream: East Verde River
Longitude: W 111.58005    Latitude: N 34.2448    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Tracks, Livestock trails, Grazing on grasses and herbs, Streambank shearing/degradation
Note: poop in water
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 14:58    Stream: East Verde River
Longitude: W 111.58164    Latitude: N 34.24445    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Note: I can hear cow
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 14:32    Stream: East Verde River
Longitude: W 111.58585    Latitude: N 34.24814    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal Note: 3 cows
Estimated age of grazing impact: Today:
Survey Date: Jun 27, 2019   Survey Time: 14:22   Stream: East Verde River
Longitude: W 111.58719   Latitude: N 34.25048   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Trampled vegetation, Tracks, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation Note: browse to left
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 12:57    Stream: East Verde River
Longitude: W 111.59743    Latitude: N 34.25222    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019  
Survey Time: 12:45  
Stream: East Verde River  
Longitude: W 111.59955  
Latitude: N 34.25383  
Allotment: Bull Springs  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  

Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation  

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 12:35    Stream: East Verde River
Longitude: W 111.60091    Latitude: N 34.25546    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Livestock trails, Tracks, A large area of disturbed or exposed soils, Trampled vegetation, Feces in water or at water’s edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019   Survey Time: 12:24   Stream: East Verde River
Longitude: W 111.60217   Latitude: N 34.25796   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Water quality degradation

Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019  Survey Time: 12:11  Stream: East Verde River
Longitude: W 111.60172  Latitude: N 34.25771  Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019   Survey Time: 11:10   Stream: East Verde River
Longitude: W 111.60124   Latitude: N 34.26138   Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Streambank shearing/degradation, Grazing on grasses and herbs
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 27, 2019    Survey Time: 11:03    Stream: East Verde River
Longitude: W 111.60319    Latitude: N 34.26214    Allotment: Bull Springs
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Browsing on streamside woody recruitment, Grazing on grasses and herbs, Tracks, Livestock trails, Streambank shearing/degradation Note: browsed willow
Estimated age of grazing impact: Within the last week:
In spite of multiple requests to USFWS and the Forest Service, we have been able to secure any Biological Opinion regarding the Bull Springs Allotment. Consequently, we cannot document the broken promises and laws by the Forest Service here. With observed and documented cattle impacts included in the Notice and Center (2020); however, adverse modification of the proposed Narrow-headed Gartersnake Critical Habitat is obviously chronic and severe. No effort to is evident here that the Tonto National Forest is respecting the promises in its Forest Plan\textsuperscript{98} and the Regional Riparian and Aquatic Ecosystem Strategy.\textsuperscript{99} No effort is evident that the Forest Service is obeying its duty to conserve in violation of 16 U.S.C. § 1536(a)(1). We do know that the permittee is trying to


sell the allotment another rancher in spite of the fact that is will take decades at best to recover after the cows there now are finally removed.\[100\]

**Red Creek Allotment**

Along Red Creek within the Red Creek Allotment, we observed and documented 1.43 miles of light cattle impacts, 0.81 miles of moderate cattle impacts, and 5.07 miles of significant cattle impacts. Along Tangle Creek within the Red Creek Allotment, we observed and documented 0.26 miles of light cattle impacts and 1.20 miles of significant cattle impacts. Domestic horses are being grazed Zig Zag Spring and long the stream to Red Creek.

Along the Verde River within the Red Creek Allotment, we observed and documented 0.80 miles of light cattle impacts. Affected endangered species in Red Creek within the Red Creek Allotment include Gila Topminnow. Affected endangered species along the Verde River within the Red Creek Allotment include Narrow-headed Gartersnake, Northern Mexican Gartersnake, Razorback Sucker, Southwestern Willow Flycatcher and Yellow-billed Cuckoo. Along the Verde River, Razorback Sucker and Southwestern Willow Flycatcher designated Critical Habitat and Narrow-headed Gartersnake, Northern Mexican Gartersnake, and Yellow-billed Cuckoo proposed Critical Habitat are affected. The Red Creek Allotment is on the Tonto National Forest.

\[100\] https://www.gofundme.com/f/help-maryann-save-her-If-ranch-in-the-wilderness
The following images document cattle and ORV damage to Red Creek affecting Gila Topminnow, cattle damage to Tangle Creek and the Verde River:

**Survey Date:** Jun 14, 2019  **Survey Time:** 12:40  **Stream:** Red Creek
**Longitude:** W 111.76357  **Latitude:** N 34.16995  **Allotment:** Red Creek
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water

**Grazing impacts observed at this location:** Tracks, Trampled vegetation, Livestock trails, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation  **Note:** Fraxinus browsed in photo.  **Estimated age of grazing impact:** Within the last week:
Survey Date: Jun 14, 2019   Survey Time: 12:36   Stream: Red Creek
Longitude: W 111.76247   Latitude: N 34.16857   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on streamside woody recruitment
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 12:28  Stream: Red Creek
Longitude: W 111.76118  Latitude: N 34.16978  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degredation, Feces in water or at water's edge
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019    Survey Time: 12:20    Stream: Red Creek
Longitude: W 111.75983    Latitude: N 34.1706    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Browsing on streamside woody recruitment, Livestock trails
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019    Survey Time: 11:58    Stream: Red Creek
Longitude: W 111.75509    Latitude: N 34.1707    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Livestock trails, Streambank shearing/degradation
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019  
Survey Time: 11:21  
Stream: Red Creek  
Longitude: W 111.7528  
Latitude: N 34.16793  
Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Streambank shearing/degradation. Note: Grazing horsetail. Tracks lead to it.  
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019  Survey Time: 11:17  Stream: Red Creek
Longitude: W 111.75094  Latitude: N 34.16697  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Tracks, Streambank shearing/degradation, Grazing on grasses and herbs
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019   Survey Time: 11:13   Stream: Red Creek
Longitude: W 111.75149   Latitude: N 34.16638   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Streambank shearing/degradation. Note: Trail leaving creek
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019  Survey Time: 11:05  Stream: Red Creek
Longitude: W 111.75013  Latitude: N 34.16357  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation. Note: Truck tracks seen too.
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019    Survey Time: 11:00    Stream: Red Creek
Longitude: W 111.7498    Latitude: N 34.16343    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Trampled vegetation, Tracks.   Note: Trampled cottonwood regeneration.   Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019    Survey Time: 10:58    Stream: Red Creek
Longitude: W 111.74954    Latitude: N 34.1633    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces, Grazing on grasses and herbs, Streambank shearing/degradation
Note: Tracks leading up trail up bank.
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019    Survey Time: 10:55    Stream: Red Creek
Longitude: W 111.74906    Latitude: N 34.163    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Grazing on grasses and herbs, Feces in water or at water's edge, Tracks, Trampled vegetation, Livestock trails, Streambank shearing/degradation.
Note: Grazing on sedges in photo.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 10:10  Stream: Red Creek
Longitude: W 111.74378  Latitude: N 34.16174  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Streambank shearing/degradation.  Note: Water quality very degraded.  Estimated age of grazing impact:
Sometime over the last month:
Survey Date: Jun 14, 2019    Survey Time: 10:07    Stream: Red Creek
Longitude: W 111.74354  Latitude: N 34.16189   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Streambank shearing/degradation, Tracks, Livestock trails. Note: Tracks on other side in the sand.
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 13, 2019    Survey Time: 18:22    Stream: Red Creek
Longitude: W 111.73899    Latitude: N 34.16123    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge. Note: Trucks travel down creek too. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 13, 2019   Survey Time: 18:20   Stream: Red Creek
Longitude: W 111.73922   Latitude: N 34.16102   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Tracks. Note: Truck tracks. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jun 14, 2019  
Survey Time: 11:34  
Stream: Red Creek  
Longitude: W 111.79752  
Latitude: N 34.19251  
Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Livestock trails, Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Wallowing in a dry, sandy area, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Browsing on streamside woody recruitment, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 11:29  Stream: Red Creek
Longitude: W 111.79523  Latitude: N 34.19087  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019   Survey Time: 11:20   Stream: Red Creek
Longitude: W 111.7924   Latitude: N 34.18986   Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Browsing on streamside woody recruitment, Grazing on grasses and herbs, Streambank shearing/degradation. Note: Absolutely hammered. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019    Survey Time: 10:49    Stream: Red Creek
Longitude: W 111.78576    Latitude: N 34.18499    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 09:40  Stream: Red Creek
Longitude: W 111.77721  Latitude: N 34.17697  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Browsing on woody plants, Water quality degradation
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 09:42  Stream: Red Creek
Longitude: W 111.77699  Latitude: N 34.17707  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Livestock trails, Tracks, Feces in water or at water's edge, Grazing on grasses and herbs.  Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 09:00  Stream: Red Creek
Longitude: W 111.77242  Latitude: N 34.17334  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs. Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019   Survey Time: 08:33   Stream: Red Creek
Longitude: W 111.76977   Latitude: N 34.16985   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water’s edge, Tracks, Grazing on grasses and herbs, Browsing on streamside woody recruitment, Streambank shearing/degradation, Water quality degradation.   Estimated age of grazing impact: Within the last week:
Survey Date: Jun 14, 2019  Survey Time: 08:38  Stream: Red Creek
Longitude: W 111.76785  Latitude: N 34.16952  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces, Grazing on grasses and herbs, Browsing on streamside woody recruitment. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020       Survey Time: 13:04       Stream: Red Creek  
Latitude: N 34.18406       Longitude: W -111.78541       Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Streambank shearing/degradation.  
Note:  Cow tracks in the sand in Red Creek.  Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020   Survey Time: 12:56   Stream: Red Creek
Latitude: N 34.18568   Longitude: W -111.78701   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Streambank shearing/degradation. Note: Cow and dirt bike tracks along the edge of Red Creek. Denuded vegetation. Estimated age of grazing impact: Within the last week:
Survey Date: Jan 21, 2019    Survey Time: 12:56    Stream: Red Creek
Latitude: Not recorded, see notes for location    Longitude: Not recorded, see notes for location
Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Streambank shearing/degradation.

Note: Cow and dirt bike tracks along the edge of Red Creek. Denuded vegetation and exposed banks eroding away. This photo just downstream of campsite off of FR 16 where OHVs and cows enter the stream. This photo, taken Jan 21, 2019, shows that cows are in Red Creek consistently over the past several winter weeks. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 12:48    Stream: Red Creek
Latitude: N 34.18771    Longitude: W -111.7886    Allotment: Red Creek
Data Category: Impacts from livestock-related sources. Note: Downcutting in Red Creek, showing extreme soil loss and root damage:
Survey Date: Feb 2, 2020   Survey Time: 12:36   Stream: Red Creek
Latitude: N 34.18993   Longitude: W -111.79221   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water, and destroyed exclosure fencing. Grazing impacts observed at this location: Tracks. Note: Photo shows dirt bike tracks and cow tracks crossing up into exclosure through failed fencing. This fencing was in this condition on the previous visit on January 21, 2019. It appears that no efforts have been made to repair it. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020      Survey Time: 12:36      Stream: Red Creek
Latitude: N 34°11’ 23.29”      Longitude: W -111° 47’ 32.29”      Allotment: Red Creek
Data Category: Failed range infrastructure
Grazing impacts observed at this location: Tracks, trampled banks, feces in the water.
Note: Photo shows failed exclosure fencing where FR 16a crosses Red Creek. This fencing was in this condition on the previous visit on January 21, 2019. It appears that no efforts have been made to repair it. Cattle easily pass through this. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge. Note: No limit to cows accessing this section of Red Creek where Thicket Spring enters the Creek. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge.  Note: Severe bank shearing and trampling where Thicket Spring enters Red Creek.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge. Note: Fresh cow tracks leading to the pond at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge. Note: Slightly older cow poop at edge of pond at Thicket Spring, showing that combined with fresh sign that cattle are routinely allowed to access the spring. Estimated age of grazing impact: Grazing within the last week and older poop:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge. Note: Heavily used cow trail along the berm on the north edge of the pond at Thicket Spring. Fresh poop and tracks seen at bottom left. Estimated age of grazing impact: within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge. Note: Fresh tracks, trampling, and cow poop at the waters edge at the pond at Thicket Spring. Estimated age of grazing impact: within the last week:
Survey Date: Feb 2, 2020   Survey Time: 15:12   Stream: Red Creek/Thicket Spring
Latitude: N 34.19536   Longitude: W -111.80591   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge. Note: Fresh tracks, trampling, and cow poop at the waters edge at the pond at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, failed fencing. Note: Failed and unmaintained fencing at the western edge of the exclosure around Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Looking from inside the exclosure around Thicket Spring to the gate which has been left open for a long time, showing a cow trail. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. **Note:** Looking from outside the exclosure around Thicket Spring to the gate which has been left open for a long time, showing 2 cow trails entering the gate.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring  
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Looking from outside the exclosure around Thicket Spring to the gate which has been left open for a long time, showing 2 cow trails entering the gate.  
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled banks at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled banks and feces at the water's edge at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring  
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Fresh grazing at the water's edge at Thicket Spring.  
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020   Survey Time: 15:12   Stream: Red Creek/Thicket Spring
Latitude: N 34.19536   Longitude: W -111.80591   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled banks at Thicket Spring, looking from southeast corner to the northwest corner. The open gate is beyond the juniper right of photo center. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled banks and cow tracks at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020       Survey Time: 15:12       Stream: Red Creek/Thicket Spring
Latitude: N 34.19536       Longitude: W -111.80591       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled banks, tracks, and cow trail along the water's edge at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020       Survey Time: 15:12       Stream: Red Creek/Thicket Spring
Latitude: N 34.19536        Longitude: W -111.80591       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Failed fencing at the southeast corner of the exclosure at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020   Survey Time: 15:12   Stream: Red Creek/Thicket Spring
Latitude: N 34.19536   Longitude: W -111.80591   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water’s edge, grazing, browsing, trampling. Note: Looking across grazed grasses at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020       Survey Time: 15:12       Stream: Red Creek/Thicket Spring
Latitude: N 34.19536       Longitude: W -111.80591       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Grazed aquatic plants in the outlet of Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled outlet of Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled banks where Thicket Spring meets Red Creek.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Trampled banks, tracks, and feces in the water where Thicket Spring meets Red Creek. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at waters edge, grazing, browsing, trampling. Note: Heavily used cow trail leading from Red Creek into the bench where Thicket Spring emerges. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020       Survey Time: 15:08       Stream: Red Creek/Thicket Spring
Latitude: N 34.19453       Longitude: W -111.80567       Allotment: Red Creek
Data Category: Condition of range infrastructure and developments
Note: The Gate that should keep vehicles and cows out of the section of Red Creek below Thicket Spring was left open when we found it. Many fresh jeep and cow tracks were observed:
Survey Date: Feb 2, 2020       Survey Time: 15:06       Stream: Red Creek
Latitude: N 34.19439       Longitude: W -111.80589       Allotment: Red Creek
Data Category: Condition of range infrastructure and developments
Note: The exclosure fence across Red Creek below Thicket Spring was completely blown out and allows cows and ATVs to pass right under:
Survey Date: Feb 2, 2020  Survey Time: 14:19  Stream: Zigzag Spring  
Latitude: N 34.18139  Longitude: W -111.78423  Allotment: Red Creek  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Tracks, Trampled vegetation, Streambank shearing/degradation. **Note:** A fresh distinct cow track in the sand along the stream flowing from ZigZag Spring to Red Creek. Broken and useless fence remnants were observed a short distance upstream from here. **Estimated age of grazing impact:** Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 14:00  Stream: Zigzag Spring
Latitude: N 34.18085  Longitude: W -111.78925  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation. Note: See accompanying photos. At this location, the Red Creek rancher opens gate from corral to let horses graze in Zigzag Spring. This photo shows a trail coming from the corral down to the stream flowing from ZigZag Spring to Red Creek. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  
Survey Time: 14:00  
Stream: Zigzag Spring  
Latitude: N 34.18085  
Longitude: W -111.78925  
Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation.  
Note: At this location, the Red Creek rancher opens gate from corral to let horses graze in Zigzag Spring. This photo shows the downcutting caused by floods coming off of the private land, and a tire which has washed into the stream. The horse corral is just out of view at the top of the photo.  
Estimated age of grazing impact: Within the last week horses have been in this portion:
Survey Date: Feb 2, 2020    Survey Time: 14:00    Stream: Zigzag Spring
Latitude: N 34.18085    Longitude: W -111.78925    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation. Note: At this location, the Red Creek rancher opens gate from corral to let horses graze in Zigzag Spring. This photo shows a fresh pile of horse poop in the woodlands above the stream along the trail that comes down form the corral. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020   Survey Time: 14:00   Stream: Zigzag Spring
Latitude: N 34.18085   Longitude: W -111.78925   Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation.  Note: At this location, the Red Creek rancher opens gate from corral to let horses graze in Zigzag Spring.  This fenceline is the boundary between private and USFS land.  This photo shows a gate in the corral where the rancher allows the horses to walk down a trail from the corral to the stream flowing from ZigZag Spring to Red Creek.  Ten horses were in the corral.

Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 14:00    Stream: Zigzag Spring
Latitude: N 34.18085    Longitude: W -111.78925    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water.
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation. Note: At this location, the Red Creek rancher opens gate from corral to let horses graze in Zigzag Spring. This photo shows a trail crossing from the horse corral down to the woodlands above the stream flowing from ZigZag Spring to Red Creek. Anything palatable by horses was consumed and exposed soil dominated this area. This photo is taken on USFS land a few yards from the fenceline. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 14:00    Stream: Zigzag Spring
Latitude: N 34.18085    Longitude: W -111.78925    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation. Note: At
this location, the Red Creek rancher opens gate from corral to let horses graze in Zigzag Spring.
This photo shows a trail dropping from the horse corral down to the woodlands above the stream
flowing from ZigZag Spring to Red Creek. Fresh horse poop is in the trail. This photo is taken on USFS
land just yards from the fenceline. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 13:40    Stream: Zigzag Spring
Latitude: N 34.18246    Longitude: W -111.78691    Allotment: Red Creek
Data Category: Impacts from non-livestock sources (overland sheet flow flooding impacts)
Note: Overgrazed uplands are driving major scouring of the stream below ZigZag Spring. This photo shows where massive floods have choked the stream with debris. For a location so high in a watershed there should not be flooding of such magnitude:
Latitude: N 34.18162    Longitude: W -111.78469    Allotment: Red Creek
Data Category: Impacts from livestock related sources
Note: Head cutting, scouring, and entrenchment on the stream below ZigZag Spring:
Latitude: N 34.18162  Longitude: W -111.78469  Allotment: Red Creek
Data Category: Impacts from livestock related sources
Note: Head cutting, scouring, and entrenchment on the stream below Zigzag Spring. Suitable topminnow habitat is limited to a narrow channel:
Latitude: N 34.18162   Longitude: W -111.78469   Allotment: Red Creek
Data Category: Impacts from livestock related sources.  Note:  Head cutting, scouring, and entrenchment on the stream below ZigZag Spring. Massive erosion has worn down to bedrock:
Latitude: N 34.18158     Longitude: W -111.78463     Allotment: Red Creek
Data Category: Condition of range infrastructure and developments
Note: The fence across the stream below ZigZag Spring appears to have been blown out for a long time. Fence remnants are seen on the willow tree at right and the ash tree at left. Cows pass through this passage, exposing roots of the trees and eroding soils:
Survey Date: Feb 2, 2020   Survey Time: 13:26   Stream: Zigzag Spring
Latitude: N 34.18165   Longitude: W -111.78457   Allotment: Red Creek
Data Category: Impacts from non-livestock sources. Note: Two dead lowland leopard frogs a just below where the exclosure fence has failed:
Survey Date: Feb 2, 2020    Survey Time: 13:26    Stream: Zigzag Spring
Latitude: N 34.18165    Longitude: W -111.78457    Allotment: Red Creek
Data Category: Impacts from non-livestock sources
Note: A dead lowland leopard frog found in a pool where the stream below ZigZag Spring meets Red Creek. Dirtbike tracks and cow tracks are seen in the sand. Enough dead frogs were observed in the stream below the private land to create a suspicious situation.
Latitude: N 34.18139    Longitude: W -111.78424    Allotment: Red Creek
Data Category: Impacts from livestock related sources
Note: Extreme downcutting in the stream below ZigZag Spring, showing 10 feet of soil loss over the past few decades. Overgrazed uplands lead to extreme flooding:
Latitude: N 34.18134    Longitude: W -111.78404    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at waters edge, Grazing on grasses and herbs, Browsing on woody plants, Streambank shearing/degradation.
Note: A fresh cow pie at the edge of the stream which flows from ZigZag Spring to Red Creek.
Estimated age of grazing impact: Today:
**Survey Date:** Feb 2, 2020  **Survey Time:** 14:21  **Stream:** Zigzag Spring  
**Latitude:** N 34.18137  **Longitude:** W -111.78419  **Allotment:** Red Creek  
**Data Category:** Evidence of livestock impacts to vegetation, soils, or water  
**Grazing impacts observed at this location:** Tracks. **Note:** Fresh cow tracks in the stream flowing to Red Creek from ZigZag Spring. **Estimated age of grazing impact:** Within the last week:
Survey Date: Jul 10, 2019       Survey Time: 13:10       Stream: Tangle Creek
Longitude: W 111.79617       Latitude: N 34.14651       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal: Note: two cows with yellow tags. numbers 177 on the black one and 105 on the white face. no fence stopping them from the creek. Estimated age of grazing impact: Today:
Survey Date: Jul 9, 2019  
Survey Time: 16:27  
Stream: Tangle Creek  
Longitude: W 111.80569  
Latitude: N 34.15199  
Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Trampled vegetation, Livestock trails, Tracks, Feces, Grazing on grasses and herbs.  
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 9, 2019  
Survey Time: 16:24  
Stream: Tangle Creek  
Longitude: W 111.80499  
Latitude: N 34.15149  
Allotment: Red Creek  
Data Category: Evidence of livestock impacts to vegetation, soils, or water  
Grazing impacts observed at this location: Tracks, Livestock trails, Grazing on grasses and herbs, Feces in water or at waters edge, Streambank shearing/degradation. Note: hammered bank.  
Estimated age of grazing impact: Within the last week:
Survey Date: Jul 9, 2019       Survey Time: 16:21       Stream: Tangle Creek
Longitude: W 111.80414       Latitude: N 34.15069       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at waters edge, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jul 9, 2019    Survey Time: 16:17    Stream: Tangle Creek
Longitude: W 111.80266    Latitude: N 34.14994    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degredation. **Note:** heavy grazing here. **Estimated age of grazing impact:** Within the last week:
Survey Date: Jul 9, 2019    Survey Time: 16:04    Stream: Tangle Creek
Longitude: W 111.80156    Latitude: N 34.14963    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at waters edge, Grazing on grasses and herbs, Streambank shearing/degredation
Estimated age of grazing impact: Within the last week:
Grazing impacts observed at this location: Tracks, Trampled vegetation, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 9, 2019    Survey Time: 15:47    Stream: Tangle Creek
Longitude: W 111.80066    Latitude: N 34.14845    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces. Note: recent poop on trail.
Estimated age of grazing impact: Within the last week:
Survey Date: Jul 9, 2019     Survey Time: 15:44     Stream: Tangle Creek
Longitude: W 111.80002     Latitude: N 34.14838     Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at waters edge, Grazing on grasses and herbs, Streambank shearing/degradation.  Note: cow made bench chisel trail. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 9, 2019    Survey Time: 15:39    Stream: Tangle Creek
Longitude: W 111.79881    Latitude: N 34.14738    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, A large area of disturbed or exposed soils, Trampled vegetation, Feces, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jul 9, 2019      Survey Time: 15:35      Stream: Tangle Creek
Longitude: W 111.79767      Latitude: N 34.14649      Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water's edge, Streambank shearing/degradation. Estimated age of grazing impact: Within the last week:
Survey Date: Jul 9, 2019    Survey Time: 15:33    Stream: Tangle Creek
Longitude: W 111.79722    Latitude: N 34.14648    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Feces in water or at water's edge, Streambank shearing/degradation. **Estimated age of grazing impact:** Within the last week:
Survey Date: Jul 9, 2019    Survey Time: 15:26    Stream: Tangle Creek
Longitude: W 111.79548    Latitude: N 34.14561    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, A large area of disturbed or exposed soils, Grazing on grasses and herbs, Streambank shearing/degradation. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 9, 2019      Survey Time: 15:15      Stream: Tangle Creek
Longitude: W 111.79502  Latitude: N 34.14451      Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation, Trampled vegetation. Note: poop in bottom left. tracks on creek. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 9, 2019       Survey Time: 15:06       Stream: Tangle Creek
Longitude: W 111.79307       Latitude: N 34.1428       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, A large area of disturbed or exposed soils, Feces.
Note: multiple eras of poops.   Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 9, 2019   Survey Time: 15:03   Stream: Tangle Creek
Longitude: W 111.79264   Latitude: N 34.14236   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, Streambank shearing/degradation. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge; Note: No limit to cows accessing this section of Red Creek where Thicket Spring enters the Creek. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge.  Note:  Severe bank shearing and trampling where Thicket Spring enters Red Creek.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge.  Note:  Fresh cow tracks leading to the pond at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge;

Note: Slightly older cow poop at edge of pond at Thicket Spring, showing that combined with fresh sign that cattle are routinely allowed to access the spring.

Estimated age of grazing impact: Grazing within the last week and older poop:
Survey Date: Feb 2, 2020     Survey Time: 15:12     Stream: Red Creek/Thicket Spring
Latitude: N 34.19536     Longitude: W -111.80591     Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge; Note: Heavily used cow trail along the berm on the north edge of the pond at Thicket Spring. Fresh poop and tracks seen at bottom left.

Estimated age of grazing impact: within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge; Note: Fresh tracks, trampling, and cow poop at the water's edge at the pond at Thicket Spring. Estimated age of grazing impact: within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge; Note: Fresh tracks, trampling, and cow poop at the water's edge at the pond at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, failed fencing;
Note: Failed and unmaintained fencing at the western edge of the enclosure around Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020     Survey Time: 15:12     Stream: Red Creek/Thicket Spring
Latitude: N 34.19536     Longitude: W -111.80591     Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Looking from inside the exclosure around Thicket Spring to the gate which has been left open for a long time, showing a cow trail.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  Note:  Looking from outside the exclosure around Thicket Spring to the gate which has been left open for a long time, showing 2 cow trails entering the gate.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020      Survey Time: 15:12      Stream: Red Creek/Thicket Spring
Latitude: N 34.19536      Longitude: W -111.80591      Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  Note:  Looking from outside the exclosure around Thicket Spring to the gate which has been left open for a long time, showing 2 cow trails entering the gate.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  Note: Trampled banks at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled banks and feces at the water's edge at Thicket Spring. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  Note: Fresh grazing at the water's edge at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled banks at Thicket Spring, looking from southeast corner to the northwest corner. The open gate is beyond the juniper right of photo center. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  Survey Time: 15:12  Stream: Red Creek/Thicket Spring
Latitude: N 34.19536  Longitude: W -111.80591  Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  Note:  Trampled banks and cow tracks at Thicket Spring.

Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020      Survey Time: 15:12      Stream: Red Creek/Thicket Spring
Latitude: N 34.19536      Longitude: W -111.80591      Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled banks, tracks, and cow trail along the water's edge at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020       Survey Time: 15:12       Stream: Red Creek/Thicket Spring
Latitude: N 34.19536       Longitude: W -111.80591       Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Failed fencing at the southeast corner of the exclosure at Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  
Note:  Looking across grazed grasses at Thicket Spring.

Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020   Survey Time: 15:12   Stream: Red Creek/Thicket Spring
Latitude: N 34.19536   Longitude: W -111.80591   Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Grazed aquatic plants in the outlet of Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled outlet of Thicket Spring.
Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled banks where Thicket Spring meets Red Creek.

Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:12    Stream: Red Creek/Thicket Spring
Latitude: N 34.19536    Longitude: W -111.80591    Allotment: Red Creek

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling. Note: Trampled banks, tracks, and feces in the water where Thicket Spring meets Red Creek. Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020  
Survey Time: 15:12  
Stream: Red Creek/Thicket Spring  
Latitude: N 34.19536  
Longitude: W -111.80591  
Allotment: Red Creek  

Data Category: Evidence of livestock impacts to vegetation, soils, or water  

Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water and at water's edge, grazing, browsing, trampling.  

Note: Heavily used cow trail leading form Red Creek into the bench where Thicket Spring emerges.  

Estimated age of grazing impact: Within the last week:
Survey Date: Feb 2, 2020    Survey Time: 15:08    Stream: Red Creek/Thicket Spring
Latitude: N 34.19453    Longitude: W -111.80567    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments. Note: The Gate that should keep vehicles and cows out of the section of Red Creek below Thicket Spring was left open when we found it. Many fresh jeep and cow tracks were observed:
Survey Date: Feb 2, 2020    Survey Time: 15:06    Stream: Red Creek
Latitude: N 34.19439    Longitude: W -111.80589    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments
Note: The exclosure fence across Red Creek below Thicket Spring was completely blown out and allows cows and ATVs to pass right under.:
Survey Date: Jun 13, 2019    Survey Time: 13:17    Stream: Verde River
Longitude: W 111.70789    Latitude: N 34.1742    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks.    Note: Cow track.
Estimated age of grazing impact: Within the last week, since recent flooding:
Survey Date: Jun 13, 2019    Survey Time: 13:11    Stream: Verde River
Longitude: W 111.70748    Latitude: N 34.17521    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks
Estimated age of grazing impact: Within the last week:
Survey Date: Jun 13, 2019    Survey Time: 12:56    Stream: Verde River
Longitude: W 111.70573    Latitude: N 34.17574    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Grazing on grasses and herbs
Estimated age of grazing impact: More than a month old:
Survey Date: Jun 19, 2019    Survey Time: 17:28    Stream: Verde River
Longitude: W 111.71339    Latitude: N 34.1526    Allotment: Red Creek
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces. Note: Strange color but full of grass
Estimated age of grazing impact: More than a month old:
Survey Date: Jun 14, 2019       Survey Time: 11:54       Stream: Red Creek
Longitude: W 111.75434       Latitude: N 34.16962       Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Broken or downed fence.
Note: Trail running across downed fence. Red ribbons in tree and the wire itself doesn’t look very old.:
Survey Date: Jun 14, 2019    Survey Time: 10:55    Stream: Red Creek
Longitude: W 111.78649    Latitude: N 34.18642    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Broken or downed fence.
Note: Blown out in flooding. Well established Cow Trails from uplands converge here.:
Survey Date: Jun 14, 2019    Survey Time: 10:25    Stream: Red Creek
Longitude: W 111.78321    Latitude: N 34.18124    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments. Broken or downed fence.
Survey Date: Jun 14, 2019   Survey Time: 09:56   Stream: Red Creek
Longitude: W 111.78032   Latitude: N 34.17923   Allotment: Red Creek
Data Category: Condition of range infrastructure and developments. Missing fence.
Note: Fence dead ends at ash tree along creek side. Approximately 8 feet of downcutting since fence built. Fence is useless.
Survey Date: Jun 19, 2019    Survey Time: 17:05    Stream: Verde River
Longitude: W 111.71866    Latitude: N 34.15717    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments. Broken or downed fence
Note: Fence is down in wash. It is also missing in many places upslope. There is an old spring development near here. The spring seems to have been fenced off, but the old tub is laden with sediment and unfunctional.
Survey Date: Jun 19, 2019   Survey Time: 14:35   Stream: Red Creek
Longitude: W 111.75485   Latitude: N 34.16937   Allotment: Red Creek
Data Category: Condition of range infrastructure and developments. Broken or downed fence.
Note: Fence to left of gate is down. This fencing does not exclude the creek on either side. Plus, there are cattle impacts on both sides of the gate.
Survey Date: Jul 9, 2019    Survey Time: 16:22    Stream: Tangle Creek
Longitude: W 111.80443    Latitude: N 34.15089    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Broken or downed fence
Note: Crushed/fallen fence. Cows go under:
Survey Date: Jul 9, 2019    Survey Time: 15:29    Stream: Tangle Creek
Longitude: W 111.79591    Latitude: N 34.14622    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Broken or downed fence.
Note: seems like an old exclosure boundary. here is a trail crossing it.:
Survey Date: Jul 9, 2019    Survey Time: 15:17    Stream: Tangle Creek
Longitude: W 111.79494    Latitude: N 34.14463    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Gate missing, open, or non-functioning. Note: Makes me sad. no gate, on this otherwise immaculate fencing.:
Survey Date: Jul 9, 2019    Survey Time: 15:00    Stream: Tangle Creek
Longitude: W 111.79225    Latitude: N 34.14198    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Other
Note: Nice exclosure. too bad the cows are in here. see poop at base of fence pass-thru:
Survey Date: Jul 9, 2019    Survey Time: 14:12    Stream: Tangle Creek
Longitude: W 111.80683    Latitude: N 34.15297    Allotment: Red Creek
Data Category: Condition of range infrastructure and developments: Gate missing, open, or non-functioning; Salt block.  Note: Cows pass freely through here. 10 feet down the fence line from a fully functional cattle guard.
The rarity and value of desert riparian areas\textsuperscript{101} like Red and Tangle Creeks and their critical importance to the survival and Recovery especially for fish survival and Recovery should be obvious. To the Forest Service and the Tonto National Forest it is obviously not important.

The Gila Topminnow Recovery Plan says,

"Table 3. List of known habitats available for reestablishment of Gila topminnow. ... Red Creek ... Tonto NF ... Thicket Spring ... Tonto NF ... Zig Zag Spring ... Tonto NF\textsuperscript{102} ... Appendix E. Summary of all known introductions of Gila topminnow (\textit{Poeciliopsis occidentalis occidentalis}) in the U.S., as of April, 1994 (updated and modified from Bagley et al. 1991). ... RED CREEK ... THICKET SPRING\textsuperscript{103} ... ZIG ZAG SPRING"\textsuperscript{104}

The Biological Opinion for the Red Creek Allotment says,

"On October 23, 1997, the Southwest Center for Biological Diversity and Forest Guardians filed a Complaint for Declaratory and Injunctive Relief, challenging the legality of livestock grazing on allotments on the Apache-Sitgreaves, Coconino, Coronado, Gila, Prescott, and Tonto National Forests. The complaint contended that the Forest had violated the Act by failing to formally consult with the Service on the effects of authorizing grazing on specific grazing allotments. In response, the Forest Service established a team composed of a leader, representative biologists and rangeland specialists from the Forest Service, and advisors from the Service. To facilitate the work of the team, the Forest Service developed guidance criteria for reauthorizing livestock term grazing permits (USFS 1998a).

Based on the guidance criteria, the Forest Service made adverse effects determinations to Gila topminnow (topminnow) and southwestern willow flycatcher (flycatchers) within the BAE for the Red Creek Allotment. The Forest Service then modified the Annual Operating Plans to avoid these adverse effects, and the Cave Creek Ranger District made a “no effect” determination after committing to deferring grazing on the Red Creek drainage or in the Red Hills Pasture until after formal consultation had been completed.


\textsuperscript{103} Id., page 77.

\textsuperscript{104} Id., page 83.
... At the recommendation of the team, formal consultation was subsequently requested by the Forest Service for loach minnow, topminnow, flycatcher, and cactus ferruginous pygmy-owl (pygmyowl).¹⁰⁵

DESCRIPTION OF THE PROPOSED ACTION ... The BAE indicates that the proposed action is needed to address management concerns as they relate to the Forest’s LMP, including: 1) whether or not the impact of current grazing activities is consistent with the Forest Plan’s direction for management of threatened or endangered species, and/or designated critical habitat; and 2) whether the impact of current grazing activities is consistent with the Forest Plan’s direction for management of riparian and/or upland species. ...

The Forest Service also proposes a fence at Thicket Spring tank that would discourage concentration of cattle in Red Creek. No grazing would occur along the Verde River, as the Red Hills Pasture would no longer be used. The Tangle Creek and Red Creek pastures would be used as winter pastures, with use alternating every other year between the two pastures. For each pasture, four months of use (November through February) would occur, followed by 1.75 years of rest while the alternating pasture is used from November through February.”¹⁰⁶ ...

The Forest Service proposes making the following improvements in order to utilize the above schedule:

1. Construct two trick tanks in the Tangle Pasture and one in the Red Creek pasture to try to improve livestock distribution and draw livestock away from riparian areas.

2. Develop horizontal wells to replace water sources in the Tangle Pasture lost when a portion of Red Creek was fenced to exclude cattle. The wells may also help to draw livestock out of the riparian area in Tangle Creek.

3. Reconstruct a portion of fencing at Thicket Spring Tank to allow for a Gila topminnow exclusion. ... Again, fence reconstruction may encourage livestock to feed in the uplands and reduce concentrations in Red Creek.¹⁰⁷ ...

DESCRIPTION OF THE PROPOSED ACTION ... Initially, the proposed action included closure of FR 18, which enters Red Creek from the Tangle Creek pasture, and continues for four miles downstream to its confluence with the Verde River.

¹⁰⁵ Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Delvin Lopez, Tonto National Forest Cave Creek Ranger District Ranger; RE: Biological Opinion based on review proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (Empidonax traillii extimus), cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum), Gila topminnow (Poeciliopsis occidentalis occidentalis), and loach minnow (Rhinichthys cobitis); December 19, 2000.; page 2.

¹⁰⁶ Id., pages 2-3.

¹⁰⁷ Id., page 4.
The EA notes that FR 18 will be closed, as does the fish BAE. However, the BAE does not address this issue, and verbal clarification from the Forest Service determined that there are currently no plans to close this road.108 ... 

The Forest Service also proposes a fence at Thicket Spring tank that would discourage concentration of cattle in Red Creek. 

No grazing would occur along the Verde River, as the Red Hills Pasture would no longer be used. The Tangle Creek and Red Creek pastures would be used as winter pastures, with use alternating every other year between the two pastures.109 ... 

FR 18, which is a four-wheel-drive track, crosses Red Creek repeatedly in the lower four miles and, according to the fish BAE, 57 percent of the total length of the channel is directly affected by the road bed.110 ... 

Red Creek is additionally affected by vehicular use of FR 18. FR 18 enters Red Creek from the Tangle Creek, approximately four miles above the Verde River/Red Creek confluence. The fish BAE notes that the first reach within this four miles (approximately 0.7 miles) is perennial, and confined to a valley bottom, leaving no room for the road to avoid impacting the stream. The road crosses Red Creek frequently in this portion, often traversing long lengths of the channel. 

The fish BAE concludes that, as a result of the road and cattle grazing, the streambanks are indistinct. The next 1.8 mile reach also has perennial flows. ... Overland runoff from the uplands crosses the road, funnelling fine sediment from the roadbed into the stream. For the remaining 1.5 miles of Red Creek, the valley is broader, and the road continues along the stream channel. The fish BAE notes that vehicular use destabilizes the road surface, likely contributing to erosion and sediment movement during flood events. At the Verde River confluence, there is a large area of bare ground and disturbed soil and vegetation due to continual impact of vehicle use.111 ... 

Zig Zag Spring is a tributary to Red Creek, and consists of approximately one mile of perennial-interrupted and ephemeral water. Zig Zag Spring originates on the Red Creek ranch private property, and flows northwesterly for one mile to enter Red Creek. A dam is used to divert water from the springhead to an irrigated pasture. The fish BAE indicates that habitat for approximately 0.25 miles below the dam is shallow pools and runs scoured to bedrock. Aquatic habitat conditions are considered good.112 ...

108 Id., page 5. 
109 Ibid. 
110 Id., page 28. 
111 Id., page 28-29. 
112 Id., page 29.
The fish BAE notes that waters on the allotment either currently possess the necessary constituent elements for listed fish species, or could provide them under improved conditions.\textsuperscript{113} ...

**Status of the Gila Topminnow (within the Action Area)**

Topminnow are native to the Verde River. ... The Service considers Red Creek, Thicket Springs, and Zig Zag Spring as currently occupied and/or likely to be restocked by topminnow. Surveys of Red Creek in 1987 and 1989 located topminnow, although no formal stocking of Red Creek had taken place. Subsequent surveys have not located topminnow within Red Creek, however, both the Service and the Forest Service agree that the site is considered failed, not extirpated, and should be considered for restocking, as noted in the fish BAE. Similar conditions apply at Zig Zag and Thicket springs.

The fish BAE also notes that, in its current condition, Red Creek is not particularly conducive for survival of topminnow due to a lack of floodplain development that lead to the creation of meanders and backwaters that are needed by topminnow for year-long occupancy. However, the fish BAE notes that Red Creek, from FR 18 crossing downstream to the Verde River has the potential to provide this type of habitat relatively rapidly if riparian conditions improve to a properly functioning condition, and notes that topminnow has a wide tolerance to habitat types.\textsuperscript{114} ...

Aquatic and Riparian Habitats ... The effects of the continued use of FR 18 within the allotment on the stream channel are direct and indirect. Vehicular use of the road at crossings of the active channel precludes the recruitment or encroachment of herbaceous vegetation. The location of the road on terraces adjacent to the stream results in acceleration of erosion and transport of sediment to the stream during overland flow events. Indirect effects of road use on fisheries habitat include a reduction in the amount of pool and riffle habitat due to increased sedimentation and embeddedness which may result in a reduction of macroinvertebrate production, increased diurnal water temperature patterns due to an increased exposure of surface water, a decrease in feeding success due to higher turbidity, and a decrease in water quality due to dust and pollutants washed from the underside of vehicles in the active stream channel. Direct effects from road use can include displacement and crushing of individual fish (primarily eggs and larvae) by vehicles in the stream.

The Red Hills pasture, including the Verde River, the lower 2.9 miles of Red Creek, and Dutchman Grave Spring would not be grazed as fencing would exclude livestock grazing from 2.2 miles of Red Creek from Thicket Spring downstream to Zig Zag Creek in Red Creek pasture, 0.5 miles of Zig Zag Creek, and 0.5 miles of Red Creek in the Tangle

\textsuperscript{113} Ibid.
\textsuperscript{114} Id., page 31.
Creek pasture. Winter grazing would occur every other year on approximately 2.1 miles of Red Creek in the Red Creek Pasture. Tangle Creek would be winter grazed every other year in rotation with the Red Creek Pasture. Thicket Spring would be partially protected, and grazed between 2.5 to 3 or 6.5 to 7 months, depending on the year.

The fish BAE notes that those areas excluded from grazing (the Verde River, Zig Zag Spring, and Dutchman Grave Spring) can be expected to experience aquatic habitat recovery, hampered somewhat by upland conditions. Similarly, the upper and lower reaches of Red Creek that would be excluded from grazing should experience recovery of aquatic habitats\(^\text{115}\) ...

**Effects to Gila Topminnow**

The seriously impaired status of topminnow, together with the degraded environmental baseline for the Tonto National Forest, makes even small adverse effects to the species and their habitat of serious concern.

As the draft revision of the topminnow recovery plan points out, the status of the species is such, and past habitat losses so severe, that recovery (downlisting) is only a long-term vision, and the short-term goal is simply to prevent the extinction of the species within the Gila basin (Weedman 1998).

For topminnow, occupied habitat is present at Dutchman Grave Spring, suitable habitat is present in Red Creek, Zig Zag Spring, and Thicket Spring, and potential habitat is present in Tangle Creek. ...

It is also possible that the reconstruction of a fence at Thicket Spring tank, which would create an enclosure for topminnow, may in the long-term have a beneficial effect on topminnow. As noted in the Provisional Extirpation Report (Weedman et al. 1997), management, but not elimination, of *Typha* spp. is likely needed to provide habitat at this Spring. The Forest Service’s proposal would attempt to manage Thicket Spring tank for topminnow. As previously noted, the Service considers Thicket Spring tank occupied. ...

As previously noted, the Service considers Red Creek as occupied by topminnow. Continued grazing along 2.1 miles of Red Creek can expect to result in adverse, direct effects of mortality due to trampling of stream channels by livestock, and incidental consumption of small topminnow during livestock watering. Additionally, the effects of the continued use of FR 18 are noted above, and can include a reduction in the amount of pool and riffle habitat due to increased sedimentation and embeddedness, reduced macroinvertebrate production, increased diurnal water temperature patterns, decreased

\(^\text{115}\) Id., page 36.
feeding success, decreased water quality, and increased mortality due to crushing of individual fish.\textsuperscript{116} ... 

Currently, regional guidance criteria (USFWS 1998) state that a no effect determination cannot be made for topminnow because grazing occurs within the watershed on an allotment which supports occupied, suitable, and potential unoccupied habitat for topminnow, and grazing activities within the watershed on the allotment could limit the recovery of the species. The fish BAE concludes that the action, as proposed, may affect, and is likely to adversely affect topminnow because: 1) livestock are not excluded from accessing 2.1 miles of Red Creek in the Red Creek Pasture, or from Tangle Creek in the Tangle Creek Pasture; 2) the subwatershed is not in satisfactory condition, and soils will probably remain unsatisfactory or recover slowly on slopes less than 15 percent due to increased stocking rates; and 3) 1998 site inspections indicate that, while exclusion of livestock from Red Creek and Zig Zag Spring would allow recovery of topminnow habitat in these areas, streambank alteration and over utilization of riparian vegetation in Tangle Creek and the middle 2.1 miles of Red Creek would likely continue to restrict riparian and aquatic habitat recovery.\textsuperscript{117} ... 

Effects to the Status of Southwestern Willow Flycatcher ... 

The status of the species and the effects of the proposed grazing action can be summarized in the following points:

1. The flycatcher is extremely endangered, and loss of riparian habitat is the primary cause;

2. Potential habitat exists within the action area, on portions of Red and Tangle creeks.

   The proposed action would permit cattle to graze within potential habitat;

3. The environmental baseline throughout the action area is degraded, with grazing being a significant contributor to poor riparian conditions;

4. Riparian habitat is unsatisfactory within the action area;

5. Upland range conditions are, at least in part, in unsatisfactory condition;

6. Poor range conditions can lead to larger, unnatural flooding, which in turn leads to erosion of streambanks and loss of riparian habitat.\textsuperscript{118} ...

Portions of the Verde River have been designated as critical habitat for flycatcher. While grazing would occur along tributaries of the Verde River (i.e., Red and Tangle ...
creeks), as well as in upland areas adjacent to the Verde River, the Service does not believe they will result in adverse modification of critical habitat. As noted previously, the proposed action would exclude from grazing all portions of the Verde River within the Red Creek Allotment. The exclusion of the Verde River from grazing activities, as well as the change in use for grazing of riparian areas on tributaries of the Verde River within the allotment, lead the Service to conclude that critical habitat will not be adversely modified.119 ...

**Gila Topminnow**

The Service anticipates that livestock grazing and management under the proposed action would result in incidental take of topminnow through habitat alteration. It is anticipated that take will occur as a result of direct mortality of individual topminnow and as indirect losses resulting from habitat modification of Red and Tangle creeks, as well as Zig Zag and Thicket springs. Direct mortality may occur during reconstruction of allotment boundary fences at Dutchman Grave’s Spring and construction of the enclosure at Thicket Spring. Direct mortality may also result from grazing along 2.1 miles of the middle portion of Red Creek, during which time trampling of the stream channel and incidental consumption of small topminnow by livestock may occur. Harm, or indirect take, may occur through habitat alteration and loss due to grazing in suitable, occupied topminnow habitat along Red Creek; grazing along the Verde River within the Red Hills Pasture when fences are periodically washed out, cut, or damaged; reduction in surface flows due to watershed degradation; alterations in the hydrograph that result in flashier streamflows; and watershed conditions that result in unstable stream channels in Red Creek, and the Verde River.

The anticipated level of take cannot be quantified as numbers of individual fish for all portions of the proposed action. Topminnow are short-lived, highly fecund species whose natural cycle includes large, rapid fluctuations that make population estimates difficult to obtain and that mask changes due to take from human actions. In addition, dead fish are seldom found due to their small size and rapid consumption by scavengers. Therefore, the level of take will be quantified differently depending upon the action; i.e., 1) for construction and development actions; 2) for road use of FR 18); and 3) for general ongoing livestock grazing and allotment management.

...2. For continued use of FR18, the Service anticipates that direct take will be considered to have been exceeded if any one of the following conditions occur:

a. Vehicular use of the road not necessary for Forest Service or grazing management purposes continues;
b. Vehicular use, associated with grazing management, occurs outside of the season of use for the Tangle Creek Pasture.

3. For general ongoing livestock grazing and allotment management, take will be considered to have been exceeded if any one of the following conditions occur: ...

c. The proposed grazing management does not result in improved conditions of those portions of the Horseshoe Reservoir Watershed found with the Red Creek Allotment within five years, unless the failure to achieve static or upward trends is due to causes unrelated to, and not cumulative to, livestock grazing and its management, and changes in the grazing and its management would not reverse or ameliorate the downward trend;

d. The proposed 40 percent utilization levels for riparian areas and 35 percent utilization levels for upland areas are exceeded by more than five percent at any time or streambank alteration exceeds 20 percent by length due to trampling, chiseling, or other physical impacts by livestock.

If during the course of the action, the amount or extent of the incidental take anticipated is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Forest Service must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.\textsuperscript{120} ...

**REASONABLE AND PRUDENT MEASURES**

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take authorized by this biological opinion.

1. Conduct all proposed actions in a way that will minimize direct mortality of topminnow.

2. Conduct all proposed actions in a way that will minimize loss and alteration of topminnow habitat.

3. Monitor the allotment to document allotment conditions in such a way as to ensure that take, as defined above for topminnow, will not be exceeded, and take additional measures to ensure improvement of conditions, as described below.

4. Maintain a complete and accurate record of actions which may result in take of topminnow and their habitat.

\textsuperscript{120} Id., paged 45-47.
5. Ensure that any actions taken as part of the proposed action will not preclude the restocking of topminnow in the future.

**TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, the Forest Service is responsible for compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. Implementation of terms and conditions is nondiscretionary.

1. The following terms and conditions will implement reasonable and prudent measure 1. ...
   d. A gate shall be installed by the Forest Service on FR 18 to prevent off-road vehicle and recreational traffic to ensure that no direct mortality of topminnow occurs as a result of vehicles in the active channel of Red Creek. ...

2. The following terms and conditions will implement reasonable and prudent measures 2, 3, and 5.
   a. The Forest Service shall inspect and maintain all topminnow site exclosures (Red Hills Pasture, Thicket Springs Tank, Dutchman Grave Spring) a minimum of three times per year. One of the inspections must be within one month of livestock being put into pastures next to the exclosures. Inspection reports from the permittees may be used to accomplish this term and condition. The permittees shall report their inspection and maintenance work to the District annually.

   Livestock shall be removed from any exclosure within 24 hours upon learning that they have intruded into the exclosure. Notification shall be provided to the Service of any exclosure fence damage and any livestock intrusion into the exclosures in the annual report required by this biological opinion (Recovery Plan Task 1.4, Weedman 1998).

   b. The Forest Service shall apply established and replicable methods to measure utilization on the Red Creek Allotment. Monitoring and measurements shall include, at a minimum: establishment of key areas; identification of species to monitor; development of closed reference areas; evaluation of the current season’s forage production before cattle are placed on pastures to establish stocking rates; and examination of pastures during and after use to establish level of use, condition of land, and the need to move cattle.

   1. Stocking rates shall be based on the results from determining the available current forage production each year.

   2. Annuals shall be excluded from the forage base because reliance on annuals indicates overuse of perennial grasses and grass-like plants and woody vegetation.
3. Monitoring during use of a pasture shall be completed, at a minimum, at the midpoint of that pasture’s use. If utilization is already exceeded, cattle shall be removed from the pasture. If utilization is within 10 percent of the utilization maximum, plans for early removal of cattle shall be developed. These plans shall include: ...

1. The Forest Service shall monitor streambank alteration during pasture use for those pastures with access to Red Creek. If alteration has already exceeded 20 percent, cattle shall be removed from the pasture. If utilization is within 5 percent of the utilization maximum, plans for early removal of cattle shall be developed.

These plans shall include: ...

d. The Forest Service shall implement closure of FR 18, as described above.

e. The Forest Service shall complete within one year of permit issuance those actions itemized within the BAE designed to draw livestock out of riparian areas including trick tanks, horizontal wells, fence construction or reconstruction, and redesign of the allotment boundary. ... "121 [Pages 48 & 49.]

3. The following term and condition will implement reasonable and prudent measure 4. The Forest Service shall ensure that records of exclosure and gap fence monitoring and maintenance are maintained. Exclosure maintenance, repair, livestock intrusion, and other relevant information shall be furnished to the Service as part of the annual report for this biological opinion (Recovery Plan Task 1.4, Weedman 1998). 122

Gila Topminnow has been reintroduced into the Red Creek drainage.123 USFWS "considers Red Creek as occupied by topminnow."124

Red Creek runs through the middle of the Red Creek pasture. To protect Gila Topminnow on the Red Creek Allotment, the Forest Service told USFWS that [t]he Tangle Creek and Red Creek pastures would be used as winter pastures, with use alternating every other year between the two pastures."125 Obviously, if the Red Creek pasture is only being used for winter grazing, the habitat destruction along Red Creek documented in this Notice would not be happening.

To protect Gila Topminnow on the Red Creek Allotment, the Forest Service promised that "the lower 2.9 miles of Red Creek...would not be grazed as fencing would exclude livestock grazing...

121 Id., page 48-49.
122 Id., pages 47-50.
124 Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Delvin Lopez, Tonto National Forest Cave Creek Ranger District Ranger; RE: Biological Opinion based on review proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (Empidonax trailli extimus), cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum), Gila topminnow (Poeciliopsis occidentalis occidentalis), and loach minnow (Rhinichthys cebitis); December 19, 2000; page 38.
125 Ibid., page 3.
from 2.2 miles of Red Creek from Thicket Spring downstream to Zig Zag Creek in Red Creek Pasture...\textsuperscript{126} As we observed and as we document here, the Forest Service has clearly lied that "the lower 2.9 miles of Red Creek...would not be grazed."

In the December 18, 2000, Biological Opinion, USFWS established that "direct take will be considered to have been exceeded" if there is "[v]ehicular use of the road [FR18] not necessary for Forest Service or grazing management purposes continues."\textsuperscript{127} FR18 is heavily used. Taking is occurring. Here is a map showing the exact location of the FR18:

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{map.png}
\caption{Wilderness and Recreation Map}
\end{figure}

In the December 18, 2000, Biological Opinion, USFWS put forth nondiscretionary terms and conditions including, that the Forest Service "shall monitor streambank alteration pasture use for those pastures with access to Red Creek...[i]f alteration has already exceeded 20 percent, cattle shall be removed from the pasture." Obviously, the Forest Service is not monitoring the damage to Red Creek. This term and condition is being violated. The Forest Service is failing to obey its legal "duty to conserve" violating 16 U.S.C. § 1536(a)(1).

\textsuperscript{126} Ibid., page 36.
\textsuperscript{127} Ibid., page 46.
Bartlett Allotment

Along the Verde River with the Bartlett Allotment, we observed and documented 0.81 miles of light cattle impacts, 1.59 miles of moderate cattle impacts, and 2.67 miles of significant cattle impacts. This area is also impacted by stray horses and feral burros. These cows, horses and burros will move into other areas if not removed now. The Bartlett Allotment is on the Tonto National Forest.

The following images document cattle, stray horse and feral burro damage to the Verde River affecting Yellow-billed Cuckoo and the lack of intact fencing to protect riparian habitat:

Survey Date: Jul 2, 2019    Survey Time: 18:24    Stream: Verde River
Longitude: W 111.66631    Latitude: N 33.75286    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Feces in water or at water's edge, Tracks, Livestock trails
Estimated age of grazing impact: within the last week:
Survey Date: Jul 2, 2019    Survey Time: 15:59    Stream: Verde River
Longitude: W 111.6666    Latitude: N 33.76921    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge.
Note: still soft cow pie.    Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 2, 2019       Survey Time: 10:52       Stream: Verde River
Longitude: W 111.65394       Latitude: N 33.71748       Allotment: Bartlett

Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Livestock trails, Streambank shearing/degradation, Browsing on woody plants, Grazing on grasses and herbs

Estimated age of grazing impact: Within the last week:
Survey Date: Jul 2, 2019  
Survey Time: 10:18  
Stream: Verde River
Longitude: W 111.65378  
Latitude: N 33.72291  
Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water

Grazing impacts observed at this location: Tracks, Trampled vegetation, A large area of disturbed or exposed soils, Feces.  
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 2, 2019    Survey Time: 10:14    Stream: Verde River
Longitude: W 111.6538    Latitude: N 33.72354    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Streambank shearing/degradation, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water's edge.    Estimated age of grazing impact: Within the last week:
Survey Date: Jul 2, 2019    Survey Time: 09:42    Stream: Verde River
Longitude: W 111.65881    Latitude: N 33.73205    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces. Note: horse and cow impacts. Horse territorial feces marking pile. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 1, 2019    Survey Time: 19:42    Stream: Verde River
Longitude: W 111.65312    Latitude: N 33.72764    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Trampled vegetation, A large area of disturbed or exposed soils, Feces in water or at water's edge, Grazing on grasses and herbs, Streambank shearing/degradation.  Estimated age of grazing impact: Within the last week:
Survey Date: Jul 1, 2019    Survey Time: 19:35    Stream: Verde River
Longitude: W 111.65265    Latitude: N 33.72826    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: A live or dead stock animal, Tracks, Livestock trails, Feces in water or at water's edge, Feces. Note: 4 burros. Estimated age of grazing impact: Today:
Survey Date: Jul 1, 2019    Survey Time: 19:17    Stream: Verde River
Longitude: W 111.65266    Latitude: N 33.73193    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Trampled vegetation, Feces in water or at water’s edge, Streambank shearing/degradation. Note: cow-tracked up riverside mud.
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 1, 2019    Survey Time: 19:15    Stream: Verde River
Longitude: W 111.65267    Latitude: N 33.73191    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Feces in water or at water's edge, Trampled vegetation, Livestock trails. Note: numerous cow tracks and pies in muddy riverside forest.
Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 1, 2019    Survey Time: 19:32    Stream: Verde River
Longitude: W 111.65261    Latitude: N 33.72895    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Browsing on woody plants. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 1, 2019    Survey Time: 19:30    Stream: Verde River
Longitude: W 111.65264    Latitude: N 33.72932    Allotment: Bartlett
Data Category: Evidence of livestock impacts to vegetation, soils, or water
Grazing impacts observed at this location: Tracks, Livestock trails, Feces in water or at water's edge, Streambank shearing/degradation. Estimated age of grazing impact: Sometime over the last month:
Survey Date: Jul 2, 2019   Survey Time: 16:59   Stream: Verde River
Longitude: W 111.67086   Latitude: N 33.76572   Allotment: Bartlett
Data Category: Condition of range infrastructure and developments: 1. Other; 2. Broken or downed fence. Note: this fence is worthless:
Survey Date: Jul 2, 2019    Survey Time: 11:01    Stream: Verde River
Longitude: W 111.6543    Latitude: N 33.71506    Allotment: Bartlett
Data Category: Condition of range infrastructure and developments. 1. Broken or downed fence; 2. Missing fence; 3. Gate missing, open, or non-functioning. Note: useless and in disrepair:
Survey Date: Jul 2, 2019     Survey Time: 10:50     Stream: Verde River
Longitude: W 111.6541     Latitude: N 33.71765     Allotment: Bartlett
Data Category: Condition of range infrastructure and developments.  1. Broken or downed fence; Note: well used trail to river too.
Survey Date: Jul 2, 2019     Survey Time: 10:36     Stream: Verde River
Longitude: W 111.65409     Latitude: N 33.72062     Allotment: Bartlett
Data Category: Condition of range infrastructure and developments: 1. Broken or downed fence;
Note: down on both sides of tree:
Survey Date: Jul 1, 2019    Survey Time: 18:39    Stream: Verde River
Longitude: W 111.65893    Latitude: N 33.73617    Allotment: Bartlett
Data Category: Condition of range infrastructure and developments. 1. Broken or downed fence:
Note: Trail going down through downed fence.
Survey Date: Jul 1, 2019    Survey Time: 18:30    Stream: Verde River
Longitude: W 111.65953    Latitude: N 33.7371    Allotment: Bartlett
Data Category: Condition of range infrastructure and developments:  1. Broken or downed fence:
Note:  Fence destroyed in wash.
In spite of multiple requests to USFWS and the Forest Service, we have been able to secure any Biological Opinion regarding the Bartlett Allotment. While we understand that the Bartlett allotment permitted grazing has been suspended, the chronic and ongoing damage to this riparian area by cows, horses and burros is obvious.
SUMMARY

Riparian cottonwood/willow forest is the rarest forest type in North America. Surviving riparian vegetation associated with a perennial stream comprises only approximately 0.4% of the total land area in the State of Arizona.

Regarding the rarity and the value of riparian habitat, the Southwestern Forest Service Region has produced a Regional "Strategy" and Forest Plans Regarding the Forest Service commitment generally and specifically.

As a reminder, please note again the following quotations from the Region 3 Forest Service's August 24, 2018, Southwestern Region Riparian and Aquatic Ecosystem Strategy,

"Rivers and streambeds are conduits for life. In no other ecosystem can we as an agency have a greater impact in "Caring for the land and serving people." Protection and enhancement of riparian and enhancement of riparian and aquatic areas is paramount in providing habitat and sustainable water for dependent fish, wildlife, plant species, and human communities alike. ..."

The overarching goal of this strategy is to ensure that the ecological integrity of riparian and aquatic habitats is maintained and/or restored.

Similarly, the Coconino, Prescott and Tonto NFs Forest Plans all contain language that the Forest Service will "ensure sustainable ecosystems [and] will support ecological sustainability." The Coconino NF Forest Plan "aims to promote responsible land management...guides the Forest Service in fulfilling its responsibilities for the stewardship of the Forest ... provides strategic guidance ... [and] is a framework for sustaining native ecological systems." The Prescott NF Forest Plan "is intended to produce responsible land management ... while ecosystem processes and biological characteristics continue to fulfill their natural rhythm." The Tonto NF Forest Plan "defines the long-term direction to provide for multiple use...in an environmentally sound manner."

129 Arizona Riparian Inventory and Mapping Project, Arizona Game and Fish Department, December 1, 1993.
132 Id., page 2.
Specifically, as we have learned recently, even when the Forest Service escapes a "jeopardy" finding from USFWS based on multiple Forest Plan promises, when the Forest Service predictably fails to keep it promises, and when failure to keep its promises jeopardizes the continued existence of the species that it promises to protect, the Forest Service refuses to do anything. On June 27, 2019, when we confronted the Regional Forester and the Apache-Sitgreaves NF Supervisor regarding their facilitation, accommodation and promotion of the Forest's extirpation and the Region's global extinction of the New Mexico Meadow Jumping Mouse, the Forest Service responded that its Apache-Sitgreaves NF Forest Plan is just "a framework programmatic action...[that only] when viewed holistically, will contribute to conservation."138

Obviously, when the Forest Service spends so much time and resources producing Forest Plans; and when we, as interested and committed Public, spend so much time reviewing and participating in the Forest Plan preparation process, we don't take the Forest Service's supreme insult lightly that a Forest Plan is just "a framework programmatic action ... [that only] when viewed holistically, will contribute to conservation."139

The Verde River watershed riparian areas are a mess. It is worth, taking some time here to examine what it is like as Public view applicable plans "holistically" to see how they "contribute to conservation."

Regarding protection of riparian habitat, the currently applicable, March 2018, Coconino National Forest Land and Resource Management Plan, says,

"Where the potential exists, vegetation, root masses, and woody debris stabilize and protect banks, edges, and shorelines of riparian areas from disturbances. Plant distribution and occurrence are resilient to natural disturbances. ... Riparian areas should be managed to promote natural movement of water and sediment, to maintain ecological functions, and to maintain habitat and corridors for species."141 ... Perennial and intermittent riparian streamcourses maintain their natural sinuosity and have access to their floodplains so that when floods do occur, energy can be dissipated

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137 Correspondence, from Robin Silver, M.D., Center for Biological Diversity; to Secretary of the Interior David Bernhardt, USFWS Principal Deputy Director Margaret Everson, USFWS Regional Director Amy Lueders, USFS Acting Chief Vicki Christiansen, Regional Forester Cal Joyner, and Apache-Sitgreaves National Forest Supervisor Steve Best; RE: Sixty-Day Notice of Endangered Species Act Violations, Apache-Sitgreaves National Forest; June 27, 2019.
138 Correspondence, from: USDA Forest Service Region 3 Regional Forester Calvin N. Joyner, Albuquerque, to: Dr. Robin Silver, Center for Biological Diversity Co-Founder and Board Member; RE: Response to your Sixty-day Notice of Intent to Sue because the Forest Service is authorizing and allowing the destruction and adverse modification of critical habitat for the New Mexico meadow jumping mouse ("NMMJM") and jeopardizing the species in violation of the ESA; September 5, 2019.
139 Ibid.
140 Ibid.
141 Ibid.
without causing damage to the streambanks of the channel. Stream channel stability is maintained or restored.\textsuperscript{142} ... 

In perennial and intermittent riparian streamcourses, projects and management activities should be designed and implemented to retain or restore natural streambank stability, native vegetation, and riparian and soil function. ... An aquatic management zone for non-riparian, intermittent streamcourses should be identified and maintained to reduce sedimentation, maintain functioning of the channel within its floodplain, and maintain downstream water quality and riparian habitat and function. \textsuperscript{143} ...
Projects and activities should be designed and implemented to maintain or improve soil and riparian function; maintain or improve native vegetation\textsuperscript{144} ... 
Riparian forests are functioning or in good condition and contribute to healthy watersheds\textsuperscript{145} ...
Riparian forests provide habitat and help maintain temperatures necessary for maintaining populations of native aquatic and riparian-dependent species and for their dispersal.\textsuperscript{146} ...
In riparian forests, recreation activities, permitted uses, and management activities should occur at levels that maintain or allow improvement of soil function, riparian vegetation, and water quality at the stream reach scale.\textsuperscript{147} ...
Habitat conditions contribute to the survival and recovery of listed species, allow for repatriation of extirpated species, contribute to the delisting of species under the Endangered Species Act, preclude the need for listing new species, improve conditions for Southwestern Region sensitive species, and keep common native species common.\textsuperscript{148} ...
Terrestrial ERUs and riparian areas provide the necessary physical and biological habitat components for carrying out growth, reproduction, survival, dispersal, and other key life cycle needs of associated native species.\textsuperscript{149} ...
Stream ecosystem conditions within perennial and intermittent riparian streamcourses support habitat for self-sustaining populations of native aquatic and riparian species. Woody and herbaceous overstory and understory (where the natural potential exists) and

\begin{footnotesize}
\begin{itemize}
\item[] 142 Id., page 35.
\item[] 143 Id., page 36.
\item[] 144 Id., page 40.
\item[] 145 Id., page 42.
\item[] 146 Ibid.
\item[] 147 Id., page 43.
\item[] 148 Id., page 78.
\item[] 149 Ibid.
\end{itemize}
\end{footnotesize}
overhanging banks provide fish habitat, regulate stream temperatures, and maintain soil moisture in the aquatic management zone.\textsuperscript{150} ... 

Habitat management objectives and species protection measures from approved recovery plans should be applied to activities occurring within federally listed species habitat to promote recovery of the species.\textsuperscript{151} 

Structural range improvements (such as fences, troughs, earthen stock ponds, pipelines) should be located, constructed, reconstructed, maintained, and used in a manner consistent with the desired conditions for riparian areas, wet meadows, aspen, formally identified archaeological sites, known locations of Southwestern Region sensitive species, and other sensitive resources.\textsuperscript{152} ... 

Where permitted livestock have access to riparian areas, the use of riparian species should provide for maintenance of those species, allow for regeneration of new individuals, protect bank and soil stability, and reduce the effects of flooding. Maintenance of woody riparian species should lead to diverse age classes of woody riparian species where potential for native woody vegetation exists.\textsuperscript{153} ... 

Designated and eligible wild and scenic river segments retain their free-flowing condition and their outstandingly remarkable values (that is, archaeological, scenic, fishery, wildlife, recreational, and botanical).\textsuperscript{154} ... 

Table 12. Areas unsuitable for grazing on Coconino NF ... Riparian Habitat within the Verde Wild and Scenic River.\textsuperscript{155} ... 

Implement actions to benefit federally listed and sensitive species by contributing to its recovery or supporting trends that avoid listing.\textsuperscript{156} ... 

Maintain and reconstruct fencing, waters, and other structural range improvements when necessary\textsuperscript{157} ... 

Implement comprehensive river management plans for the Verde River and Fossil Creek Wild and Scenic Rivers.\textsuperscript{158} ... 

\textsuperscript{150} Ibid. 
\textsuperscript{151} Id., page 80. 
\textsuperscript{152} Id., page 86. 
\textsuperscript{153} Id., page 86. 
\textsuperscript{154} Id., page 181. 
\textsuperscript{155} Id., page 196. 
\textsuperscript{156} Id., page 270. 
\textsuperscript{157} Id., page 272. 
\textsuperscript{158} Id., page 276.
Regarding protection of riparian habitat from grazing, the currently applicable, June 2015, Prescott National Forest Land and Resource Plan, says,

"The following conditions are desired to assist with the restoration and maintenance of watershed integrity to increase the resilience and adaptive capacity of watersheds and riparian corridors to accommodate expected changes imposed by future climate trends for the Southwest. ...

Desired Conditions for Watersheds ... Riparian corridors are intact and are trending toward properly functioning condition [Riparian areas are functioning properly when adequate vegetation, landform, or woody debris is present to: dissipate stream energy associated with high flows...develop root masses that stabilize streambanks; develop diverse ponding and channel characteristics to provide habitat for fish, waterfowl, and other uses; and support greater biodiversity] across the landscape. 159 ...

Riparian corridors are intact and are trending toward properly functioning condition across the landscape.

Wetlands, seeps, springs, wet meadows, and associated wetlands or riparian systems develop and support stable herbaceous and woody vegetative communities with root masses that stabilize streambanks, flood plains, shoreline, and soil surfaces. 160 ...

Desired Conditions for Riparian Gallery Forests ... Vegetation consists of native species that support a range of invertebrate and vertebrate species and are free of invasive plant and animal species. Herbaceous vegetation and other ground covers are present to filter sediments, stabilize streambanks, mitigate effects of flooding, and contribute to infiltration and groundwater recharge. Woody riparian species such as cottonwood, willow, ash, and alder are reproducing with all age classes present. A diverse vegetation structure, including mature trees, snags, logs, and coarse woody debris, is present to provide habitat for riparian-dependent species. 161 ...

Desired Conditions for Aquatic Wildlife ... Ecological conditions provide habitat for associated federally listed species. Habitat conditions generally contribute to survival and recovery, and contribute to the delisting of species under the Endangered Species Act... 162 ...

For the portion of the Verde River that is eligible for wild and scenic rivers designation: outstandingly remarkable values (i.e., archaeological, scenic, fishery, wildlife, recreational, and botanical) and recommended classifications remain intact... 163 ...

160 Id., page 23.
161 Id., page 42.
162 Id., page 45.
163 Id., page 50.
Watersheds standards and guidelines ... Riparian-dependent resources should be managed to maintain and improve productivity and diversity of riparian-dependent species. Riparian communities should provide for the sustainability of aquatic and riparian species.164

Adverse impacts to stream channel features (e.g., streambanks, obligate riparian vegetation) should be minimized by modifying management actions.165 ...

Wild and scenic rivers are managed to maintain their outstandingly remarkable values.166 ...

Habitat management objectives and aquatic/riparian species protection measures from approved recovery plans should be applied to activities and special uses occurring within federally listed species habitat.167 ...

Livestock use of woody riparian species (e.g., cottonwood, willow, ash, alder) should provide for maintenance of those species and allow regeneration of new individuals leading to diverse age classes of woody riparian species where potential for native woody vegetation exists.168 "

Regarding protection of riparian habitat from grazing, the currently applicable, October 1985, Tonto National Forest Plan says,

" Competition between livestock and wildlife will be reduced as range forage conditions improve. Threatened and Endangered species habitat management and enhancement will be increased over current levels and recovery of listed species will be accomplished at a high rate.169 ...

The mission of the Tonto National Forest is to meet recurring stewardship responsibilities for National Forest lands and resources by: ... promoting quality wildlife and fish habitat, including preserving habitat for known Threatened and Endangered species... 170

Wildlife and fish habitat elements will be recognized in all resource planning and management activities to assure coordination that provides for species diversity and greater wildlife and fish populations through improvement of habitat. Ensure that fish and wildlife habitats are managed to maintain viable populations of existing native vertebrate species. Improve habitat for selected species. Cooperate with appropriate

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164 Id., pages 72-73.
165 Id., page 79.
166 Id., page 84.
167 Id., page 93.
168 Ibid.
169 Tonto National Forest Plan, October 1985.; Pages 11-12.
170 Id., page 19.
State Fish and Wildlife agencies. Prevent destruction or adverse modification of critical habitats for Threatened and Endangered species and manage for a goal of increasing population levels that will remove them from the lists.171 ...

Riparian Areas: Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines ... Coordinate with range to achieve at least 80% of the potential riparian overstory crown coverage ... Coordinate with range to achieve at least 50% of the cottonwood-willow and mixed broadleaf acres in structural Type 1 by 2030. ... Rehabilitate at least 80% of the potential shrub cover in riparian areas through the use of appropriate grazing systems and methods.172 ...

Grazing Management ... Forage use by grazing ungulates will be maintained at or above a condition which assures recovery and continued existence of threatened and endangered species.173 ...

Habitat requirements for threatened, endangered, and sensitive species will take precedence over requirements for other species.174 ...

Incorporates the Verde River Wild and Scenic Comprehensive River Management Plan into the Forest Plan ... 175 ...

The Verde Wild and Scenic River Comprehensive River Management Plan (CRMP) provides detailed direction for the entire Verde Wild and Scenic River. Standards from the CRMP applicable to the Scenic portion of the Verde River are hereby incorporated into this Forest Plan.176 ...

In 1984, Congress designated 40.5 miles of the Verde (between Camp Verde and Horseshoe Reservoir) as a Wild and Scenic River in 1984. In 2009, 16.8 miles of Fossil Creek was given that designation. The allotments that involve the Verde designated as Wild and Scenic include, Brown Springs on the Prescott NF; 13-Mile Rock, Hackberry/Pivot Rock, and Ike's Backbone on the Coconino NF; and Skeleton Ridge, Cedar Bench, and Red Creek on the Tonto NF. The allotments that involve Fossil Creek include Fossil Creek and Ike's Backbone on the Coconino and Deadman Mesa on the Tonto NF.

171 Id., page Amendment No. 25, 8/2006; Replacement Page 20-1.
172 Id., page 41.
173 Id., Amendment No. 22, 6/5/1996; Replacement Page – 42.
175 Revised 12/2017
176 Amendment 25, 8/2006; Replacement Pages – 59 and 76, 122.
Regarding the protection of the Verde River from grazing, the Verde Wild and Scenic River Comprehensive River Management Plan says,

"Livestock Grazing

- Livestock grazing shall be excluded from Verde River riparian habitat, unless a site-specific NEPA analysis approved by the forest supervisor authorizes future grazing use. The river corridor should be inspected regularly when livestock are in adjacent pastures to ensure livestock are not in riparian areas.

- Livestock water sources shall be developed outside the VWSR corridor except at three locations on the Brown Springs Allotment. These water access points shall be located at selected sites where riparian vegetation will not be degraded and where livestock can be prevented from accessing other riparian areas.\(^{177}\) ...

Livestock Grazing Management Actions

Grazing

- Exclude grazing from the riparian areas along the Verde River.

Primary Responsibility: Cave Creek and Verde District Rangers

Project Initiation: 2005

Range Improvements

- Identify locations and install fences to facilitate livestock grazing exclusion from the riparian areas along the Verde River.

Primary Responsibility: Cave Creek District Ranger and Prescott Forest Supervisor

Project Initiation: 2005\(^{178}\) ...

River-Related Value ... High Quality Fish and Wildlife Habitat ... Streambanks are covered by vegetation at potential/capability levels. Streambanks are stable with no alteration due to livestock grazing, except at restricted, designated livestock water access points. ... Streambanks are stable with no alteration due to livestock grazing, except at restricted, designated livestock water access points. ... Inspections for general presence of unauthorized livestock at key areas in conjunction with general habitat and species surveys. ... Inspect the river for unauthorized livestock monthly when cattle are in a pasture adjacent to the river. ... Identify sources of unauthorized livestock use in riparian areas, have livestock removed promptly, and make necessary repairs to prevent future unauthorized use."\(^{179}\) ...


\(^{178}\) Id., page 35.

\(^{179}\) Id., page 38.
The Fossil Creek Wild and Scenic River Management Plan has not yet been finalized. Only a draft Environmental Impact Statement for the Comprehensive River Management Plan has been released for public review.\(^{180}\)

Regarding protection of the Fossil Creek riparian area, the draft Environmental Impact Statement for the Fossil Creek Wild and Scenic River Comprehensive River Management Plan says,

"Livestock Grazing\(^{181}\) is authorized on the Coconino and Tonto national forests as an existing use within the Fossil Creek area. Although grazing allotments overlap with the Fossil Creek WSR corridor, grazing within the WSR corridor itself is limited.

- **Coconino National Forest:** The Ike’s Backbone and Fossil Creek allotments overlap with portions of the WSR corridor. In June 2017, the Ike’s Backbone Allotment was closed to grazing; this allotment had not been grazed for more than 15 years prior to its closure. Portions of the Fossil Creek Allotment are grazed. Within the Fossil Creek Allotment, the Boulder Pasture, which overlaps a portion of the recreational segment, is grazed; the Upper Wilderness and Lower Wilderness pastures have not been grazed for approximately eight years due to removal of water sources associated with the power plants; and the Stehr Lake Pasture only functions as a trail-through pasture in the late winter or early spring. Three additional allotments are present within the larger Fossil Creek watershed but are distant from the WSR corridor: 13 Mile Rock, Hackberry/Pivot Rock, Baker Lake/Calf Pen.\(^{181}\) ...

Grazing has occurred on allotments within the Fossil Creek drainage in the past and will continue to occur in the future. The Ike’s Backbone Allotment has recently been closed within the Fossil Creek drainage area. In addition, the Deadman Mesa Allotment on the Tonto National Forest, which occurs along the majority of the perennial section of Fossil Creek on the Tonto side, has been vacant for 19 years and there are no foreseeable plans to reauthorize livestock grazing at this time. Five other allotments occur in the Fossil Creek drainage area. Livestock grazing on these allotments is managed and monitored to ensure livestock use levels stay within allowable intensities and utilizations so there are no adverse effects to vegetative ground cover. The establishment of use levels protective of vegetative ground cover insures that grazing would not alter the hydrologic response of the drainage area. Because there are no riparian pastures along Fossil Creek, grazing will not have direct effects on water quality and riparian function.\(^{182}\) ...

The Ike’s Backbone Allotment has recently been closed within the Fossil Creek analysis area resulting in beneficial effects to wildlife and their habitat over the coming decades. In addition, the Deadman Mesa Allotment on the Tonto National Forest, which occurs

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\(^{181}\) Id., page 68.

\(^{182}\) Id., page 102.
along the majority of the perennial section of Fossil Creek on the Tonto side, has been vacant for 19 years and there are no foreseeable plans to reauthorize livestock grazing at this time. Five other allotments occur in the cumulative effects boundary. Standard structural range maintenance has occurred within the past, present and will continue into the future, including cleaning tanks to their original depth, cleaning out sediment traps, repairing berms, fixing fences, and converting electric fences to more reliable wire fences. Livestock grazing is managed and monitored to ensure livestock use levels stay within allowable intensities and utilizations so there are no adverse effects to vegetative communities and the wildlife species that depend on them. Livestock may have access to habitat occupied by the sensitive Arizona phlox (Phlox amabilis) and Mt. Dellenbaugh sandwort (Arenaria aberrans), which only occur within Arizona, resulting in possible grazing and trampling. Because there are no riparian pastures along Fossil Creek, grazing will not have direct effects to riparian and aquatic plants and animals. Great effort has been made to ensure riparian areas are protected, for example livestock on the Fossil Creek allotment are trailed through the Stehr Lake pasture because livestock fencing, to keep livestock out of the riparian, would hinder recreational access.\footnote{183} ...

\textbf{Grazing}

The Ike’s Backbone Allotment has recently been closed within the Fossil Creek analysis area resulting in beneficial effects to wildlife and their habitat (Magilligan and McDowell 1997). In addition, the Deadman Mesa Allotment on the Tonto National Forest, which occurs along the majority of the perennial section of Fossil Creek on the Tonto side, has been vacant for 19 years and there are no foreseeable plans to for reauthorizing livestock grazing at this time. Five other allotments occur in the cumulative effects boundary. Standard structural range maintenance has occurred within the past, present and will continue into the future, including cleaning tanks to their original depth, cleaning out sediment traps, repairing berms, fixing fences, and converting electric fences to allowable intensities and utilizations so there are no adverse effects to vegetative communities and the wildlife species that depend on them. Because there are no riparian pastures along Fossil Creek, grazing will not have direct effects to riparian and aquatic plants and animals. Great effort has been made to ensure riparian areas are protected, for example livestock on the Fossil Creek allotment are trailed through the Stehr Lake pasture because livestock fencing, to keep livestock out of the riparian, would hinder recreational access.\footnote{184}

Livestock grazing is authorized on allotments within and adjacent to the Fossil Creek WSR corridor. However, most pastures that overlap with the WSR corridor are not currently grazed.\footnote{185} ...
With the rarity of surviving and functional riparian habitat, and the fact that Recovery Plans for Southwestern Willow Flycatcher, Razorback Sucker, Gila Topminnow, Spikedace, Desert Pupfish and Woundfin look to the Verde Watershed for critical recovery habitat, it is important that we review the Recovery Plans here also.

The Southwestern Willow Flycatcher Recovery Plan says,

"Table 10. Specific river reaches, within Management Units, where recovery efforts should be focused. Substantial recovery value exists in these areas of currently or potentially suitable habitat. Additional reaches may also contribute toward recovery goals. ... Verde Verde River from Sycamore Canyon to confluence with Salt River (AZ)" 186 ...

The Razorback Sucker Recovery Plan says,

"On the basis of critical habitat information, promising areas in the lower basin may include the Salt River (RZ14) and the Verde River (RZ15). 187 ... In the lower basin, such sites in the Gila, Verde, Salt, and lower Colorado rivers are being considered. 188 ... Riverine areas such as the upper Colorado, Gunnison, San Juan, Verde, Salt, and Gila rivers should be re-evaluated for recovery potential using these criteria." 189

The Gila Topminnow Recovery Plan says,

"Table 3. List of known habitats available for reestablishment of Gila topminnow. ... East Verde River, Fossil Creek, Red Creek, Verde River at Perkinsville..." 190

The Spikedace Recovery Plan says,

"EXECUTIVE SUMMARY

Current Species Status: The spikedace is a threatened fish which has been extirpated from most of its historic range in the Gila River Basin. It is presently found only in the upper Gila River in New Mexico, and in Aravaipa and Eagle creeks and the upper Verde River in Arizona. All existing populations are under threat. 191 ...

186 Final Recovery Plan Southwestern Willow Flycatcher (Empidonax trailli extimus); prepared by Southwestern Willow Flycatcher Recovery Team Technical Subgroup; Region 2 U.S. Fish and Wildlife Service, Albuquerque; August 30, 2002.; page 91.
188 Id., page 47.
189 Id., page 48.
... The spikedace occurs in Arizona only in Aravaipa Creek, tributary to the San Pedro River in Graham and Pinal Counties; Eagle Creek, tributary to Gila River in Graham and Greenlee Counties; and upper Verde River in Yavapai County (Figure 1). All three streams support at least moderate sized, sustaining populations in relatively undisturbed reaches.\textsuperscript{192} ... 

Both distribution and abundance of spikedace have become dramatically reduced in the past century, with major changes occurring in recent decades (Minckley 1973, Propst et al. 1986). Major rivers and streams, such as lower reaches of the mainstem Gila, Salt, and Verde rivers that once supported substantial populations in several places have been recently depleted.\textsuperscript{193} ... 

In the upper Verde River, limited data indicate that the two species (Red Shiner (\textit{Cyprinella lutrensisi}) and Spikedace) are maintaining a relatively stable region of sympathy and appear to be coexisting.\textsuperscript{194} ... 

Remaining populations of spikedace in Verde River, Aravaipa Creek, and Eagle Creek, Arizona, and upper Gila River and its major tributaries in New Mexico, plus other potential locations, continue to be threatened by habitat modification or destruction, predation by introduced fishes, inadequacy of existing regulations, and continued introduction and dispersal of non-native fishes. Recovery of the species cannot be accomplished without first identifying and protecting remaining populations.\textsuperscript{195} ... 

The Desert Pupfish Recovery Plan says,

"Re-established populations in Arizona will be located in the lower and middle Gila...San Pedro, Santa Cruz, and Salt (including Verde) river drainages"\textsuperscript{196} ... 

The Woundfin Recovery Plan says,

"Potential sites for woundfin will include but will not be limited to the reach of the Verde River between Perkinsville and Sycamore Creek ..."\textsuperscript{197} 

\textsuperscript{192} Id., page 2.
\textsuperscript{193} Id., page 4.
\textsuperscript{194} Id., page 6.
\textsuperscript{195} Id., page 11.
\textsuperscript{196} Desert Pupfish (\textit{Cyprinodon macularius}) Recovery Plan, Prepared by Paul C. Marsh, Arizona State University, Tempe, Arizona, and Donald W. Sada, Bishop, California, for Region 2, U.S. Fish and Wildlife Service, Albuquerque, New Mexico, with assistance from Arizona Game and Fish Department and Tonto National Forest, September 1993.; page 18.
Obviously, these excerpts and summaries from Regional riparian strategy, Forest Plans, Wild and Scenic River Management Plans, Recovery Plans, and Biological Opinions prove that they mean nothing to Forest Service personnel and their permittees. We now turn to the specific violations of law that we intend to correct to stop the years of chronic and ongoing abuse to Verde Watershed riparian areas documented in this Notice and in Center (2020).

**LEGAL STATUTORY AND REGULATORY FRAMEWORK**

**Endangered Species Act**

Section 4 of the ESA directs the Secretary of the Interior to designate species that are threatened or endangered with extinction, and to designate “critical habitat” for such species. 16 U.S.C. § 1533(a). Section 4 also requires the Secretary to develop and implement recovery plans for the conservation and survival of threatened and endangered species, unless the Secretary finds that such a plan will not promote the conservation of the species. 16 U.S.C. § 1533(f).

Section 7 of the ESA requires each federal agency, in consultation with FWS, to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2). For each proposed action, the action agency must request from FWS whether any listed or proposed species may be present in the area of the proposed action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. If listed or proposed species may be present, the action agency must prepare a “biological assessment” to determine whether the listed species may be affected by the proposed action. *Id.* If the agency determines that its proposed action may affect any listed species or critical habitat, the agency must engage in “formal consultation” with FWS. 50 C.F.R. § 402.14.

To complete formal consultation, FWS must provide the action agency with a “biological opinion” explaining how the proposed action will affect the listed species or habitat. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14. The biological opinion “is required to address both the ‘no jeopardy’ and ‘no adverse modification’ prongs of Section 7.” *Center for Biological Diversity v. Bureau of Land Management, 422 F. Supp. 2d 1115, 1127 (N.D. Cal. 2006), citing 50 C.F.R. § 402.14(g)(4).* If FWS concludes in the biological opinion that the proposed action will jeopardize the continued existence of a listed species, or will result in the destruction or adverse modification of critical habitat, FWS must outline “reasonable and prudent alternatives” to the proposed action that FWS believes would not jeopardize listed species or result in the destruction or adverse modification of critical habitat. 16 U.S.C. § 1536(b)(3)(A).

If the biological opinion concludes that the proposed action is not likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat, FWS must provide an “incidental take statement,” specifying the amount or extent of such
incidental taking on the species, any “reasonable and prudent measures” that FWS considers necessary or appropriate to minimize such impact, and setting forth the “terms and conditions” that must be complied with by the agency to implement those measures. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i). In order to monitor the impacts of incidental take, the agency must report the impact of its action on the listed species to FWS. 50 C.F.R. § 402.14(i)(3). If during the course of the action the amount or extent of incidental taking is exceeded, the agency must reinitiate consultation immediately. 50 C.F.R. § 401.14(i)(4); see also 50 C.F.R. § 402.16.

The ESA requires the action agency and FWS to reinitiate formal consultation where discretionary federal involvement or control over the action has been retained or is authorized by law and: (1) if the amount or extent of taking specified in the incidental take statement is exceeded; (2) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) if a new species is listed or critical habitat designated that may be affected by the action. 50 C.F.R. § 402.16.

In addition to the obligation to avoid jeopardizing species under section 7(a)(2), Section 7(a)(1) of the ESA also imposes an obligation on all federal agencies, in consultation with the FWS, to "carry out programs for the conservation" of listed species. 16 U.S.C. § 1536(a)(1). This provision imposes an "affirmative duty on each federal agency to conserve each of the species listed." Sierra Club v. Glickman, 156 F.3d 606,616 (5th Cir. 1998); accord Pyramid Lake Paiute Tribe of Indians v. Dep’t of the Navy, 898 F.2d 1410, 1416-17 (9th Cir. 1990) (noting that federal agencies have "affirmative obligations to conserve under [S]ection 7(a)(1)"). "Conserve" is defined by the Act to mean recovery, i.e., the "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter arc no longer necessary." 16 U.S.C. § 1536(a)(1). We have recently reaffirmed the obligation of all federal agencies to "carry out programs for the conservation" of listed species in Center for Biological Diversity, et al., v. Tom Vilsack, et al. 198

Section 7(a)(4) requires Federal agencies to confer with the Services on actions likely to jeopardize the continued existence of any species proposed for listing or result in the destruction or adverse modification of any proposed critical habitat. When new species are added to the federal list and are affected by federal actions such as grazing on Forest Service land, the law requires that the Forest Service consults with USFWS to ensure that Forest Service's activities will not jeopardize survival and recovery of these species. 199

Section 9 of the ESA and its implementing regulations prohibit the unauthorized “take” of


199 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).
any endangered or threatened species of fish or wildlife. 16 U.S.C. § 1538(a)(1); 16 U.S.C. § 1533(d); 50 C.F.R. § 17.31. “Take” is defined broadly under the ESA to include harming, harassing, trapping, capturing, wounding or killing a protected species either directly or by degrading its habitat. 16 U.S.C. § 1532(19).

Section 4(f) of the ESA requires that the “Secretary shall develop and implement Recovery Plans for the conservation and survival of endangered species. 16 U.S.C. § 1533(f).

**VIOLATIONS OF THE ENDANGERED SPECIES ACT**

The violation of laws documented in the this Notice and Center (2020) are blatant and consistent. Widespread riparian areas of the Verde Watershed necessary for the survival and Recovery of Endangered Species have been damaged and continue to be damaged in spite of legally required Biological Opinion directed protections to the contrary. Twenty areas that are being subjected to the damage documented in this Notice and Center (2020) are designated as formal grazing allotments. These allotments include, Muldoon, West Bear/Del Rio, China Dam, Sand Flat, Perkinsville, Horseshoe, Antelope Hills on the Prescott NF; Windmill West, Beaver Creek, Apache Maid, Walker Basin, 13-Mile Rock, Hackberry/Pivot Rock, Fossil Creek on the Coconino NF; and Skeleton Ridge, Deadman Mesa, Cedar Bench, Bull Springs, and Red Creek on the Tonto NF.

Besides the Forests’ "affirmative obligations to conserve"200, these riparian areas have been examined by USFWS in multiple Biological Opinions. The May 6, 2016, Biological Opinion201 examines the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West allotments. The August 14, 2014, Biological Opinion202 examines the

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200 16 U.S.C. § 1536(a)(1); Sierra Club v. Glickman, 156 F.3d 606,616 (5th Cir. 1998); accord Pyramid Lake Paiute Tribe of Indians v. Dep’t of the Navy, 898 F.2d 1410, 1416-17 (9th Cir. 1990); Order, Center for Biological Diversity, et al., Plaintiffs, v. Tom Vilsack, et al., Defendants; Case No. 2713-cv-01785-RFB-GWH; August 1, 2017.

201 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona the endangered Gila chub (Gila intermedia) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake (Thamnophis equestris megalops) and its proposed critical habitat, proposed critical habitat for the threatened narrow-headed gartersnake (Thamnophis rufipunctatus), the threatened yellow-billed cuckoo (Coccyzus americanus), and the proposed threatened roundtail chub (Gila robusta) on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests); May 6, 2016.

202 Biological Opinion on (1) the possible effects of livestock grazing and management activities on the Windmill West Range Allotment (WWRA) located on the Red Rock Ranger and Flagstaff Ranger Districts, Coconino National Forest (NF) in Coconino and Yavapai Counties, Arizona; and (2) concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican spotted owl (Strix occidentalis lucida) and its critical habitat, southwestern willow flycatcher (Empidonax traillii extimus) and its critical habitat, the narrow-headed gartersnake (Thamnophis rufipunctatus) and its proposed critical habitat, the northern Mexican gartersnake (Thamnophis equestris) and its proposed critical habitat, Colorado pikeminnow (Ptychocheilus lucius), razorback sucke (Xyrauchen texanus) and its critical habitat, spikedace (Meda fulgida) and its critical habitat, loach minnow (Tiaraga cobitis) and its critical habitat, Gila topminnow (Poeciliopsis occidentalis occidentalis), the proposed western yellow-billed cuckoo (Coccyzus americanus), and the candidate roundtail chub (Gila robusta); U.S. Fish and Wildlife Service, August 14, 2014.

Each of these seven Biological Opinions that we can find will need to be reinitiated. These seven Biological Opinions will need to be reinitiated because the new information presented in this Notice and in Center (2020) (1) presents new information revealing that the effects of Verde River Watershed grazing are affecting listed species and Critical Habitat in a manner and an extent not previously considered; and (2) and presents new information that the action (grazing) has been substantively and significantly modified since publication of the seven Biological Opinions for the 20 allotments at issue.

The May 6, 2016, Biological Opinion consults on eight livestock range allotments, the 13 Mile Rock, Apache Maid, Beaver Creek, Fossil, Hackberry/Pivot Rock, Walker Basin, Windmill, and Windmill West allotments for the endangered Gila chub (Gila intermedia) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake (Thamnophis eques megalops) and its proposed critical habitat, proposed critical

203 Correspondence, from: USFWS Arizona Field Supervisor David L. Harlow; to: Tonto National Forest Supervisor Karl Siderits; RE: Biological Opinion for ongoing grazing management on 20 allotments on the Tonto National Forest on lesser long-nosed bat (Leptonycteris curasoae yerbaeuae), desert pupfish (Cyprinodon macularius), cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum), southwestern willow flycatcher (Empidonax traillii extimus), Mexican spotted owl (Strix occidentalis mexicana), bald eagle (Haliaeetus leucocephalus), Colorado pikeminnow (Ptychocheilus lucius), Woundfin (Plagopterus argenitissimus), Arizona agave (Agave arizonica), Arizona hedgehog (Echinocereus triglochidatus) bonytail chub (Gila elegans), Gila topminnow (Poeciliopsis occidentalis occidentalis), spkedace with critical habitat, loach minnow with critical habitat, and the razorback sucker (Xyrauchen texanus); February 28, 2002.

204 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.

205 Correspondence, from Sam F. Spiller, USFWS Arizona Field Supervisor, to: Mr. Charles Bazan, USDA Tonto National Forest Supervisor; RE: Biological Opinion “on the effects of livestock grazing on the subject allotments on the endangered razorback sucker (Xyrauchen texanus) and southwestern willow flycatcher (Empidonax traillii extimus), and the experimental non-essential population of Colorado squawfish (Ptychocheilus lucius) in the Verde River. Designated critical habitat for the razorback sucker in the Verde River is found within the action area as is proposed critical habitat for the southwestern willow flycatcher.”; June 25, 1997.

206 Correspondence, from Sam F. Spiller, USFWS Arizona State Supervisor; to: Charles R. Bazan, USDA Forest Service Tonto National Forest Supervisor; RE: Biological Opinion on the effects for the Cedar Bench Allotment Management Plan on the razorback sucker (Xyrauchen texanus); September 8, 1995.

207 Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Delwin Lopez, Tonto National Forest Cave Creek Ranger District Ranger; RE: Biological Opinion based on review proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (Empidonax traillii extimus), cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum), Gila topminnow (Poeciliopsis occidentalis occidentalis), and loach minnow (Rhinichthys cobitis); December 19, 2000.
habitat for the threatened narrow-headed gartersnake (*Thamnophis rufipunctatus*), the threatened yellow-billed cuckoo (*Coccyzus americanus*), and the proposed threatened roundtail chub (*Gila robusta*) on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests).  

The May 6, 2016, Biological Opinion did not evaluate effects of grazing on the proposed Yellow-billed Cuckoo Critical Habitat on the Apache Maid, Beaver Creek, Walker Basin, 13-Mile Rock, Hackberry, and the Windmill West allotments as the proposal has just been published on February 27, 2020.

The May 6, 2016, Biological Opinion did not review the effects of grazing on the Apache Maid Allotment on Gila Chub because USFWS concurred with Forest Service determination of "no effect" by grazing for Gila Chub Critical Habitat on the Apache Maid Allotment.

For the Apache Maid Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened northern Mexican gartersnake and its proposed critical habitat ... [because] ... livestock grazing does not occur in riparian habitat on the Apache Maid Allotment [and] the livestock management on the Apache Maid Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon."

For the Apache Maid Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened narrow-headed gartersnake and its proposed critical habitat ... [because] ... livestock grazing does not occur in riparian habitat on the Apache Maid Allotment [and] the livestock management on the Apache Maid Range Allotment is designed to protect both riparian and upland habitats that the narrow-headed gartersnake is dependent upon."

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208 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona the endangered Gila chub (*Gila intermedia*) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake (*Thamnophis eques megalops*) and its proposed critical habitat, proposed critical habitat for the threatened narrow-headed gartersnake (*Thamnophis rufipunctatus*), the threatened yellow-billed cuckoo (*Coccyzus americanus*), and the proposed threatened roundtail chub (*Gila robusta*) on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests); May 6, 2016.

209 Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.

210 Correspondence, from: Steven L. Spangle, Field Supervisor; to: Ms. Laura Jo West, Forest Supervisor, Coconino National Forest; RE: Biological Opinion on the potential effects of ongoing livestock grazing and management activities associated with ongoing livestock grazing on eight range allotments and one sheep driveway on the Prescott, Coconino, and Kaibab National Forests in Coconino and Yavapai Counties, Arizona the endangered Gila chub (*Gila intermedia*) on the Apache Maid and Beaver Creek Allotments (Coconino National Forest); and the threatened northern Mexican gartersnake (*Thamnophis eques megalops*) and its proposed critical habitat, proposed critical habitat for the threatened narrow-headed gartersnake (*Thamnophis rufipunctatus*), the threatened yellow-billed cuckoo (*Coccyzus americanus*), and the proposed threatened roundtail chub (*Gila robusta*) on the Beaverhead-Grief Hill sheep driveway (which occurs on all three national forests); May 6, 2016; pages 37-38.

211 Id., page 38.
For the Apache Maid Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened yellow-billed cuckoo its proposed critical habitat ... [because] ... ongoing livestock management on the Apache Maid Range Allotment will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat in Red Tank Draw... [and] ... ongoing livestock grazing on the Apache Maid Allotment is consistent with or is more conservative than the...2002 USFWS Southwestern Willow Flycatcher Final Recovery Plan."212

For the Beaver Creek Range Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened yellow-billed cuckoo and its proposed critical habitat ... [because] ... ongoing livestock management on the Apache Maid Range Allotment will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat on Walker Creek, Red Tank Draw, or Wet Beaver Creek... [and] ... ongoing livestock grazing on the Apache Maid Allotment is consistent with or is more conservative than the...2002 USFWS Southwestern Willow Flycatcher Final Recovery Plan."213

For the 13 Mile Rock Range Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened northern Mexican gartersnake and its proposed critical habitat ... [because] ... there is no authorized access to the Verde River (the area is fenced) ... [and] ... the livestock management on the 13 Mile Rock Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon."214

For the 13 Mile Rock Range Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened narrow-headed gartersnake and its proposed critical habitat ... [because] ... there is no authorized access to the Verde River (the area is fenced) ... [and] ... the livestock management on the 13 Mile Rock Range Allotment is designed to protect both riparian and upland habitats that the narrow-headed gartersnake is dependent upon."215

For the 13 Mile Rock Range Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened yellow-billed cuckoo and its proposed critical habitat ... [because] ... ongoing livestock management on the 13 Mile Rock Range Allotment will not measurably or detectably reduce the suitability or regeneration of western yellow-billed cuckoo habitat in the Wingfield West and Heifer Pastures as livestock do not have access to riparian habitat in these areas ... [and] ... ongoing

212 Ibid.
213 Id., page 39.
214 Id., page 36.
215 Ibid.
livestock grazing on the Apache Maid Allotment is consistent with or is more conservative than the...2002 USFWS Southwestern Willow Flycatcher Final Recovery Plan.\footnote{216}

For the Hackberry Range Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened northern Mexican gartersnake and its proposed critical habitat ... [because] ... [l]ivestock grazing does not occur in riparian habitat on the Hackberry Allotment... [and] ..., the livestock management on the Hackberry Range Allotment is designed to protect both riparian and upland habitats that the northern Mexican gartersnake is dependent upon."\footnote{217}

For the Hackberry Range Allotment, the May 6, 2016, Biological Opinion concurs with the Forest Service opinion that grazing "may affect, but is not likely to adversely affect ... the threatened narrow-headed gartersnake and its proposed critical habitat ... [because] ... [l]ivestock grazing does not occur in riparian habitat on the Hackberry Allotment... [and] the livestock management on the Hackberry Range Allotment is designed to protect both riparian and upland habitats that the narrow-headed gartersnake is dependent upon."\footnote{218}

This Notice and Center (2020) demonstrate that the major premises of the May 6, 2016, Biological Opinion, that "livestock grazing does not occur in riparian habitat,"\footnote{219} "livestock management ...is designed to protect both riparian and upland habitats,"\footnote{220} "ongoing livestock management...will not ... reduce the suitability or regeneration... habitat,"\footnote{221} and that "[t]here is no authorized [livestock] access to the Verde River"\footnote{222} are bogus.

This Notice and Center (2020) demonstrate that the inadequacies of the May 6, 2016, Biological Opinion by presenting new information revealing that the effects of the action (grazing) is affecting listed species Gila Chub, Narrow-headed Gartersnake, Northern Mexican Gartensnake, and Yellow-billed Cuckoo examined by this Biological Opinion, as well as Loach Minnow, Razorback Sucker and Southwestern Willow Flycatcher and Spikedace in a manner and to an extent not previously considered. Reinitiation of consultation for the May 6, 2016, Biological Opinion allotments, 13-Mile Rock, Apache Maid, Beaver Creek, Fossil Creek, Hackberry/Pivot Rock, Walker Basin, and Windmill West, is required pursuant to 50 C.F.R. § 402.16.

Because the May 6, 2016, Biological Opinion concurred with the Forest Service opinion "that the proposed action may affect, but is not likely to adversely affect"\footnote{223}: Northern Mexican Gartersnake, Narrow-headed Gartersnake, Yellow-billed Cuckoo, their proposed Critical Habitat, and Roundtail Chub on the 13-Mile Rock Allotment; Northern Mexican Gartersnake, Narrow-headed

\footnote{216}{Id., page 37.}
\footnote{217}{Id., page 41.}
\footnote{218}{Ibid.}
\footnote{219}{Id., pages 37, 38, 41.}
\footnote{220}{Id., pages 36, 37, 38, 41.}
\footnote{221}{Id., pages 37, 38, 39.}
\footnote{222}{Id., page 36.}
\footnote{223}{Id., page 1.}
Gartersnake, Yellow-billed Cuckoo, their proposed Critical Habitat, and Gila Chub on the Apache Maid Allotment; Yellow-billed Cuckoo, their proposed Critical Habitat, Roundtail Chub, and Gila Chub designated Critical Habitat on the Beaver Creek Allotment; Northern Mexican Gartersnake and Narrow-headed Gartersnake, their proposed Critical Habitat, Roundtail Chub, and Headwater Chub on the Fossil Creek Allotment; and Northern Mexican Gartersnake and Narrow-headed Gartersnake and their proposed Critical Habitat on the Hackberry Allotment; no Incidental Take Statements were issued for these allotments.

Because the May 6, 2016, Biological Opinion concurred with the Forest Service opinion that "the action would have "no effect" for Roundtail Chub and Gila Chub Critical Habitat on the Apache Maid Allotment; for Yellow-billed Cuckoo and its proposed Critical Habitat on the Fossil Creek Allotment; for Roundtail Chub on the Hackberry Allotment; for Narrow-headed Gartersnake, Northern Mexican Gartersnake and Yellow-billed Cuckoo and their proposed Critical Habitat on the Walker Basin Allotment; no Incidental Take Statements were issued for these allotments.

No Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions are issued in the May 6, 2016, Biological Opinion for Gila Chub and Yellow-billed Cuckoo on Apache Maid Allotment; for Gila Chub and Yellow-billed Cuckoo for Beaver Creek Allotment; for Gila Chub for Walker Basin Allotment; for Narrow-headed Gartersnake, Northern Mexican Gartersnake, Razorback Sucker, Southwestern Willow Flycatcher, Spikedace, and Yellow-billed Cuckoo for 13-Mile Rock Allotment; for Narrow-headed Gartersnake, Northern Mexican Gartersnake, Razorback Sucker, Southwestern Willow Flycatcher, Spikedace, and Yellow-billed Cuckoo for Hackberry/Pivot Rock Allotment; Gila Topminnow, Loach Minnow, and Spikedace for Fossil Creek Allotment. Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions are required when proposed actions adversely affect endangered species and Critical Habitat.

Since the May 6, 2016, Biological Opinion, on February 27, 2020, Critical Habitat has been proposed for Yellow-billed Cuckoo. The law requires that the Forest Service consult with USFWS on each allotment with a Biological Opinion dating prior to these listings and Critical Habitat designations.

The May 6, 2016, Biological Opinion fails to consult on the Windmill West Allotment even though it purports to do so. Consequently, we must refer on the August 14, 2014, Biological Opinion on the Windmill West Range Allotment for an analysis. In the August 14, 2014, Biological

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224 Id., pages 1-2.
225 Id., page 2.
227 Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.
228 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).
229 Biological Opinion on (1) the possible effects of livestock grazing and management activities on the Windmill West Range Allotment (WWRA) located on the Red Rock Ranger and Flagstaff Ranger Districts, Coconino National Forest (NF) in Coconino and Yavapai Counties, Arizona; and (2) concurrence that the proposed action may affect, but is not likely to adversely affect the Mexican
Opinion, USFWS concurs with Forest Service conclusion that grazing on Windmill West "may affect, but is not likely to adversely affect ... southwestern willow flycatcher (Empidonax traillii extimus) and its critical habitat, the narrow-headed gartersnake (Thamnophis rufipunctatus) and its proposed critical habitat, the northern Mexican gartersnake (Thamnophis eques) and its proposed critical habitat, Colorado pikeminnow (Ptychocheilus lucius), razorback sucker (Xyrauchen texanus) and its critical habitat, spikedace (Meda fulgida) and its critical habitat, loach minnow (Tiaroga cobitis) and its critical habitat, Gila topminnow (Poeciliopsis occidentalis occidentalis), the proposed western yellow-billed cuckoo (Coccyzus americanus), and the candidate roundtail chub (Gila robusta)."\(^{230}\)

In the August 14, 2014, Biological Opinion, USFWS concurs with the Forest Service that grazing "may affect, but is not likely to adversely affect" for these species because, for Southwestern Willow Flycatcher, "[l]ivestock do not have access to these 27 acres because of fences",\(^{231}\) for Yellow-billed Cuckoo, "... livestock do not have access to riparian vegetation along the Verde River ... therefore, there will be no direct effects to yellow-billed cuckoos or their habitat; for Narrow-headed Gartersnake, "[t]here will be no direct effects to narrow-headed gartersnakes or proposed critical habitat as livestock do not have access to the Verde River...and their associated riparian vegetation",\(^{232}\) for Northern Mexican Gartersnake, "[t]here will be no direct effects ... as livestock do not have access to the Verde River ... and their associated riparian vegetation"; for Razorback Sucker, Colorado pikeminnow, Loach Minnow, Spikedace and Gila Topminnow, "... as livestock do not have access to the Verde River ... and their associated riparian vegetation."\(^{233}\)

This Notice and Center (2020) demonstrate that the major premise of the August 14, 2014, Biological Opinion, that "there will be no direct effects"\(^{234}\) because "livestock do not have access to riparian vegetation along the Verde River"\(^{235}\) is bogus.

This Notice and Center (2020) demonstrate the inadequacies of the August 14, 2014, Biological Opinion by presenting new information revealing that the effects of the Windmill West Allotments' grazing is affecting Loach Minnow, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Razorback Sucker, Southwestern Willow Flycatcher and Spikedace in a manner and to an extent not previously considered. Reinitiation of consultation for the August 14, 2014, Biological Opinion is required pursuant to 50 C.F.R. § 402.16.

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\(^{230}\) Id., page 1.

\(^{231}\) Id., page 21.

\(^{232}\) Id., page 22.

\(^{233}\) Id., pages 22-23.

\(^{234}\) Ibid.

\(^{235}\) Id., pages 21, 22, 23.
No Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions are issued in the August 14, 2014, Biological Opinion on Loach Minnow, Narrow-headed Gartersnake, Northern Mexican Gartersnake, Razorback Sucker, Southwestern Willow Flycatcher and Spikedace. Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions are required when proposed actions adversely affect endangered species and Critical Habitat.\textsuperscript{236}

Since the August 14, 2014, Biological Opinion, on February 27, 2020, Critical Habitat has been proposed for Yellow-billed Cuckoo.\textsuperscript{237} The law requires that the Forest Service consult with USFWS on each allotment with a Biological Opinion dating prior to these listings and Critical Habitat designations.\textsuperscript{238}

The December 30, 2002, USFWS Biological Opinion consult on the effects of grazing on the Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio allotments on Spikedace and Loach Minnow and their designated critical habitat for each species.\textsuperscript{239} The December 30, 2002, Biological Opinion concludes that the grazing "is not likely to jeopardize the continued existence of the spikedace, or result in the destruction or adverse modification of its critical habitat" because for both Spikedace and Loach Minnow,

"The Forest [Prescott] has installed fencing around the majority of the riparian corridor and implemented two monitoring regimes in order to reduce the adverse effects of the action to the spikedace and its critical habitat...[t]he current integrity of the aquatic habitat is due largely to exclusion from livestock grazing within the riparian corridor. Livestock exclusion is anticipated to continue ..."\textsuperscript{240}

This Notice and Center (2020) demonstrate that the major premises of the December 30, 2002, Biological Opinion, "fencing around the majority of the riparian corridor," "two monitoring regimes to reduce the adverse effects," "integrity of the aquatic habitat...exclusion from livestock grazing with the riparian corridor," and [l]ivestock exclusion is anticipated to continue"\textsuperscript{241} are all bogus.

This Notice and Center (2020) demonstrate inadequacies of the December 30, 2002, USFWS Biological Opinion by presenting new information revealing that the effects of the action (grazing) is affecting not only the listed species, Spikedace and Loach Minnow and their designated Critical

\begin{itemize}
\item \textsuperscript{236} 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).
\item \textsuperscript{237} Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.
\item \textsuperscript{238} 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).
\item \textsuperscript{239} Correspondence, from: Steven L. Spangle, Field Supervisor; to: Mr. Michael R. King, Forest Supervisor, Prescott National Forest; RE: Biological Opinion of Proposed and On-going Livestock Grazing Activities on 16 Allotments [including Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio] of the Verde River watershed, on the Chino Valley and Verde Ranger Districts, Prescott National Forest (PNF), and Williams Ranger District, Kaibab National Forest, in Coconino and Yavapai counties, Arizona; December 30, 2002.
\item \textsuperscript{240} Id., pages 70-71.
\item \textsuperscript{241} Ibid.
\end{itemize}
Habitat, examined in this Biological Opinion, but also for Narrow-headed Gartersnake, Northern Mexican Gartersnake, Yellow-billed Cuckoo and their proposed Critical Habitat, and Razorback Sucker and Southwestern Willow Flycatcher and their designated Critical Habitat in a manner and to an extent not previously considered. Reinitiation of consultation for the December 30, 2002, Biological Opinion allotments, Antelope Hills, Brown Springs, China Dam, Horseshoe, Muldoon, Perkinsville, Sand Flat, and West Bear/Del Rio, is required pursuant to 50 C.F.R. § 402.16.


On July 8, 2014, the Northern Mexican Gartersnake was added to the federal list of endangered species. Proposed Critical Habitat for Narrow-headed Gartersnake and Northern Mexican Gartersnake dates from July 10, 2013. On October 3, 2014, the Yellow-billed Cuckoo was added to the federal list of endangered species. In addition, since the August 14, 2014, Biological Opinion, on February 27, 2020, Critical Habitat has been proposed for Yellow-billed

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246 Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus); Final Rule, Federal Register, Vol. 79, Page 59962, October 3, 2014.
Cuckoo.\textsuperscript{247} The law requires that the Forest Service consult with USFWS on each allotment with a Biological Opinion dating prior to these listings and Critical Habitat designations.\textsuperscript{248}

The Tonto NF/USFWS' consultation scheme for the Verde River allotments is nearly impossible to track because it is so poorly organized. The allotments of concern include the Skeleton Ridge, Deadman Mesa, Cedar Bench, Bull Springs, Red Creek, and Bartlett allotments.

USFWS' February 28, 2002, Biological Opinion professes to consult on "grazing management on 20 allotments on the Tonto National Forest" and its effects on "lesser long-nosed bat (\textit{Leptonycteris curasoae yerbabuenae}), desert pupfish (\textit{Cyprinodon macularius}), cactus ferruginous pygmy-owl (\textit{Glaucidium brasilianum cactorum}), southwestern willow flycatcher (\textit{Empidonax trailli extimus}), Mexican spotted owl (\textit{Strix occidentalis mexicana}), bald eagle (\textit{Haliaeetus leucocephalus}), Colorado pikeminnow (\textit{Ptychocheilus lucius}), Woundfin (\textit{Plagopterus argentissimus}), Arizona agave (\textit{Agave arizonica}), Arizona hedgehog (\textit{Echinocereus triglochidatus}) bonytail chub (\textit{Gila elegans}), Gila topminnow (\textit{Poeciliopsis occidentalis occidentalis}), spikedace with critical habitat, loach minnow with critical habitat, and the razorback sucker (\textit{Xyrauchen texanus}).\textsuperscript{249}

The February 28, 2002, Biological Opinion does analyze the Deadman Mesa Allotment, but says essentially nothing about the Tonto NF’s Skeleton Ridge and Cedar Bench allotments. It does not even mention the Red Creek Allotment.

For the Deadman Mesa Allotment, in the February 28, 2002, Biological Opinion, USFWS concurs with the Tonto NF that grazing "may affect, but was not likely to adversely affect" for Desert Pupfish, Gila Topminnow, Loach Minnow, Colorado Pikeminnow, Razorback Sucker, and Spikedace because, "[l]ivestock have been excluded from Fossil Springs...",\textsuperscript{250} "livestock do not have direct access to critical habitat, perennial streams, or perennial interrupted streams within the allotment...",\textsuperscript{251} "livestock do not have access to Fossil Creek from this allotment...",\textsuperscript{252} and [t]he area south of Fossil Creek (and its spring) is fenced off and access by livestock is restricted; livestock grazing is excluded year-long from this habitat.\textsuperscript{253}

\textsuperscript{247} Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.

\textsuperscript{248} 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

\textsuperscript{249} Correspondence, from: USFWS Arizona Field Supervisor David L. Harlow; to: Tonto National Forest Supervisor Karl Siderits; RE: Biological Opinion for ongoing grazing management on 20 allotments on the Tonto National Forest on lesser long-nosed bat (\textit{Leptonycteris curasoae yerbabuenae}), desert pupfish (\textit{Cyprinodon macularius}), cactus ferruginous pygmy-owl (\textit{Glaucidium brasilianum cactorum}), southwestern willow flycatcher (\textit{Empidonax trailli extimus}), Mexican spotted owl (\textit{Strix occidentalis mexicana}), bald eagle (\textit{Haliaeetus leucocephalus}), Colorado pikeminnow (\textit{Ptychocheilus lucius}), Woundfin (\textit{Plagopterus argentissimus}), Arizona agave (\textit{Agave arizonica}), Arizona hedgehog (\textit{Echinocereus triglochidatus}) bonytail chub (\textit{Gila elegans}), Gila topminnow (\textit{Poeciliopsis occidentalis occidentalis}), spikedace with critical habitat, loach minnow with critical habitat, and the razorback sucker (\textit{Xyrauchen texanus}); February 28, 2002.

\textsuperscript{250} Id., page 47.

\textsuperscript{251} Id., page 190.

\textsuperscript{252} Id., pages 194, 195, and 196.

\textsuperscript{253} Id., page 199.
This Notice and Center (2020) demonstrate inadequacies of the February 28, 2002, Biological Opinion by presenting new information revealing that the effects of the action (grazing) is affecting not only the listed species, Desert Pupfish, Gila Topminnow, Loach Minnow, Colorado Pikeminnnow, Razorback Sucker, and Spikedace, that were the subject of this Biological Opinion, and Loach Minnow and its Critical Habitat, Razorback Sucker and its Critical Habitat in a manner and to an extent not previously considered. Reinitiation of consultation for the February 28, 2002, Biological Opinion allotment, Deadman Mesa is required, pursuant to 50 C.F.R. § 402.16.

In addition, because Narrow-headed Gartersnake and Northern Mexican Gartersnake, on July 8, 2014, and their proposed Critical Habitat, July 10, 2013, have been added to Endangered Species Act protection list since release of the February 28, 2002, Biological Opinion, and since both species and their Critical Habitat are affected by grazing on the allotment, consultation must be reinitiated pursuant to 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

No Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions are issued in the February 28, 2002, Biological Opinion for Loach Minnow and Razorback Sucker. This Notice and Center (2020) document adverse modification of designated Critical Habitat for Loach Minnow and Razorback Sucker and of proposed Critical Habitat for Narrow-headed Gartersnake and Northern Mexican Gartersnake; however, USFWS did not issue an Incidental Take Statement in the February 28, 2002, Biological Opinion for either Loach Minnow or Razorback Sucker. And it has not corrected this error. USFWS did not issue Incidental Take Statements, Reasonable and Prudent Measures, and Terms and Conditions in the February 28, 2002, Biological Opinion because "[for] loach minnow ... the Service concurs that grazing on ... Deadman Mesa ... may affect, but is not likely to adversely affect, loach minnow and its critical habitat" and "[for] razorback sucker ... the Service concurs that grazing on the Deadman Mesa allotment may affect, but is not likely to adversely affect, the razorback sucker or its critical habitat."

For a valid consultation on the Skeleton Ridge Allotment we must refer to the June 25, 1997, Biological Opinion on the endangered razorback sucker (Xyrauchen texanus) and southwestern willow flycatcher (Empidonax traillii extimus), and the experimental non-essential population of Colorado squawfish (Ptychocheilus lucius) in the Verde River. USFWS concluded "non-jeopardy, no destruction or adverse modification of designation critical habitat" because "for the Razorback

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256 Id., page 191.
257 Id., page 196.
258 Correspondence, from Sam F. Spiller, USFWS Arizona Field Supervisor, to: Mr. Charles Bazan, USDA Tonto National Forest Supervisor; RE: Biological Opinion "on the effects of livestock grazing on the subject allotments on the endangered razorback sucker (Xyrauchen texanus) and southwestern willow flycatcher (Empidonax traillii extimus), and the experimental non-essential population of Colorado squawfish (Ptychocheilus lucius) in the Verde River. Designated critical habitat for the razorback sucker in the Verde River is found within the action area as is proposed critical habitat for the southwestern willow flycatcher."; June 25, 1997.
259 Id., SUMMARY.
Sucker ... [m]easures will be taken to monitor livestock use of the riparian areas of pastures to which livestock have access... [and]... [i]f livestock use in the riparian areas is excessive, measures will be taken to reduce or eliminate livestock use of these areas";260 ... "for Southwestern Willow Flycatcher... [i]f standardized monitoring ... indicates that use of the apical stems of woody riparian vegetation exceeds 40% (frequency of occurrence), then the Forest Service must remove livestock from the riparian area in the affected pasture immediately and shall defer use of the riparian area in the affected pasture in the following year ... In all pastures adjacent to the river for which river access is supposed to be precluded, sweeps of the river corridor shall be made monthly during the period each pasture is being grazed to monitor for livestock. ... In all pastures adjacent to the river and abutting allotments managed by adjacent Prescott and Coconino National Forests, sweeps of the river corridor shall be made twice a month to monitor for livestock. ... If livestock are found during monitoring or during observations incidental to other activities, the Forest Service shall be responsible for removing livestock immediately."261 ...

This Notice and Center (2020) demonstrate inadequacies of the June 25, 1997, USFWS Biological Opinion by presenting new information revealing that the effects of the action (grazing) is affecting not only the listed species Razorback Sucker and Southwestern Willow Flycatcher and their designated Critical Habitat that were the subject of this Biological Opinion, but also Narrow-headed Gartersnake and Northern Mexican Gartersnake and their proposed Critical Habitat, in a manner and to an extent not previously considered. Reinitiation of consultation for the June 25, 1997, Biological Opinion on the Skeleton Ridge Allotment is required, pursuant to 50 C.F.R. § 402.16.

The June 25, 1997, Biological Opinion on the Skeleton Ridge Allotment provides for an Incidental Take Statement for "[s]urrogate measure of riparian recovery and upland watershed condition improvement for take to razorback sucker and southwestern willow flycatcher."262 The resulting Reasonable and Prudent Measures "[i]nvolve monitoring of livestock use of riparian areas, removal of livestock from these areas if overuse is occurring..."263 The resulting Terms and Conditions require "[f]or livestock use of riparian areas, monitoring will occur at least three times while livestock are in the pasture and, once livestock leave the pasture, utilization of riparian forage and conditions of streambanks will be measured. For overuse of riparian areas by livestock, the Forest Service should implement suitable management strategies to reduce livestock use of the riparian areas..."264

260 Id., page 30.
261 Id., pages 32-33.
262 Id., cover page.
263 Ibid.
264 Ibid.
Specifically, the June 25, 1997, Biological Opinion says for Razorback Sucker and its designated Critical Habitat,

"The Service concludes that incidental take from the proposed action will be considered to be exceeded if either of the following two conditions are met:

1. That riparian recovery is halted or significantly slowed within the reach of the river containing the proposed action by the action of livestock in the riparian areas. Riparian recovery can be defined through: (1) no more than light (less than 40 percent use of apical stems) use of riparian woody species by livestock, (2) utilization of herbaceous species in the riparian zone at less than 40 percent, and (3) minimal bank instability (in this case, by impact by livestock), defined as 20 percent or less of the total. ..."265

And,

The following terms and conditions are necessary to implement reasonable and prudent measure 1:

1. In all pastures with river access, monitoring of riparian conditions, including livestock use, will be accomplished at least two times while livestock are in the pasture, once during the mid-point of the grazing period and once at the end of the grazing period.

2. After livestock leave pastures with river access, the degree of use by livestock and condition of streambanks that are attributable to livestock will be measured using standard practices for such measurements.

The following terms and conditions are necessary to implement reasonable and prudent measure 2:

1. If monitoring under reasonable and prudent measure 1 indicates that livestock are having a significant adverse effect to riparian restoration, then the Forest Service must determine and implement suitable management strategies to reduce the effects to riparian areas."266

For Southwestern Willow Flycatcher and its designated Critical Habitat, the June 25, 1997, Biological Opinion says specifically,

"The Service concludes that incidental take from the proposed action will be considered to be exceeded if one or more of the following conditions are met:

1. Standardized monitoring demonstrates that livestock are using excessive amounts of seedling woody riparian plant species for browse.

2. Standardized monitoring demonstrates that livestock are browsing on excessive amounts of non-seedling woody riparian plant species.

265 Id., page 30.
266 Id., pages 30-31.
3. Standardized monitoring and mapping demonstrates that, in the absence of scouring flood events, the percentage of vegetated riparian habitats declines by more than 20% in areal extent from the baseline mapping study. ...

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the southwestern willow flycatcher:

1. Measures shall be taken to monitor livestock use of the riparian areas to which livestock have access.

2. If excessive use of woody riparian vegetation is determined, measures will be taken to move livestock outside the riparian pastures and use of the affected pasture shall be deferred in the following year.

3. Measures shall be taken to monitor the entire river corridor through the allotment for livestock.

4. Any trespass livestock found shall be removed from riparian areas immediately and a reasonable effort shall be made to determine and eliminate the source or point of trespass. ...

The following terms and conditions are necessary to implement reasonable and prudent measure 1:

1. In all pastures with river access, standardized monitoring of riparian conditions, including livestock use, shall be accomplished at least two times during the grazing period; once at the mid-point of the grazing period and once at the end of the grazing period.

The following terms and conditions are necessary to implement reasonable and prudent measure 2:

2. If standardized monitoring under reasonable and prudent measure 1 indicates that use of the apical stems of woody riparian vegetation exceeds 40% (frequency of occurrence), then the Forest Service must remove livestock from the riparian area in the affected pasture immediately and shall defer use of the riparian area in the affected pasture in the following year.

The following terms and conditions are necessary to implement reasonable and prudent measure 3:

1. In all pastures adjacent to the river for which river access is supposed to be precluded, sweeps of the river corridor shall be made monthly during the period each pasture is being grazed to monitor for livestock.

2. In all pastures adjacent to the river and abutting allotments managed by adjacent Prescott and Coconino National Forests, sweeps of the river corridor shall be made twice a month to monitor for livestock.
The following terms and conditions are necessary to implement reasonable and prudent measure 4:

1. If livestock are found during monitoring or during observations incidental to other activities, the Forest Service shall be responsible for removing livestock immediately.\textsuperscript{267}

This Notice and Center (2020) document that incidental take has been exceeded on the Skeleton Ridge Allotment. As the June 25, 1997, USFWS Biological Opinion notes,

"As provided in 50 CFR §402.16, reinitiation of formal consultation is required ... if: (1) the amount or extent of incidental take is exceeded..."\textsuperscript{268}

Reinitiation of formal consultation is required for the Skeleton Ridge Allotment.

In addition, because Narrow-headed Gartersnake and Northern Mexican Gartersnake, on July 8, 2014,\textsuperscript{269} and their proposed Critical Habitat, July 10, 2013,\textsuperscript{270} have been added to Endangered Species Act protection list since release of the June 25, 1997, USFWS Biological Opinion, and since both species and their Critical Habitat are affected by grazing on the allotment, consultation must be reinitiated pursuant to 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

For a valid consultation on the Cedar Bench, we must refer to the September 8, 1995, Biological Opinion on the Effects to the Razorback Sucker on the Cedar Bench Allotment.\textsuperscript{271} USFWS concluded that for Razorback Sucker, the Cedar Bench Allotment grazing was "[n]ot likely to destroy or adversely modify its designated critical habitat"\textsuperscript{272} because "should monitoring demonstrate that livestock are congregating in the riparian areas of the River Pasture, measures will be taken to reduce or eliminate livestock use of these areas. ... requires the restriction of grazing in riparian areas by fencing, herding or other means if monitoring should determine such action is necessary.\textsuperscript{273} ... a periodic inspection of the riparian areas will be conducted to determine if livestock are in these areas. This inspection must be completed at least three times during the season of use."\textsuperscript{274}

This Notice and Center (2020) demonstrate inadequacies of the September 8, 1995, USFWS Biological Opinion by presenting new information revealing that the effects of the action (grazing) is affecting not only Razorback Sucker and its designated habitat examined in this Biological Opinion,

\textsuperscript{267} Id., pages 31-33.
\textsuperscript{268} Id., page 35.
\textsuperscript{271} Correspondence, from Sam F. Spiller, USFWS Arizona State Supervisor; to: Charles R. Bazan, USDA Forest Service Tonto National Forest Supervisor; RE: Biological Opinion on the effects for the Cedar Bench Allotment Management Plan on the razorback sucker (Xyrauchen texanus); September 8, 1995.
\textsuperscript{272} Id., SUMMARY.
\textsuperscript{273} Id., Cover page.
\textsuperscript{274} Id. page 17.
but also listed species Loach Minnow and Southwestern Willow Flycatcher and their designated Critical Habitat, and Narrow-headed Gartersnake and Northern Mexican Gartersnake and their proposed Critical Habitat in a manner and to an extent not previously considered. Reinitiation of consultation for the June 25, 1997, Biological Opinion on the Cedar Bench Allotment is required, pursuant to 50 C.F.R. § 402.16.

The September 8, 1995, Biological Opinion on the Cedar Bench Allotment provides an Incidental Take Statement "if riparian recovery is halted or significantly retarded by livestock use of the riparian zone." \textsuperscript{275} The resulting Reasonable and Prudent Measures require that "that livestock use of the riparian areas of the River Pasture be monitored and that, should monitoring demonstrate that livestock are congregating in the riparian areas of the River Pasture, measures will be taken to reduce or eliminate livestock use of these areas." \textsuperscript{276} The resulting Terms and Conditions requires "periodic inspection of riparian areas and an end of the grazing season inspection ... [and requires] ...the restriction of grazing in riparian areas by fencing, herding or other means if monitoring should determine such action is necessary." \textsuperscript{277}

Specifically, for Razorback Sucker, the Biological Opinion says,

"The Service concludes that the level of incidental take from the proposed action will be considered to be exceeded if riparian recovery is halted or significantly retarded by livestock use of the riparian zone. Recovery can be achieved through: (1) light browsing on woody species, where browsing on apical stems of riparian seedlings does not exceed 40 percent; (2) low utilization of herbaceous vegetation where utilization of key herbaceous species in the riparian zone does not exceed 40 percent, and (3) minimal back instability, where up to or less than 20 percent of the streambank is in unstable condition.\textsuperscript{278}"

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the razorback sucker:

1. Measures will be taken to monitor the livestock use of the riparian areas of the River Pasture.

2. If monitoring demonstrates that livestock are congregating excessively in the riparian areas of the River Pasture, measures will be taken to reduce or eliminate livestock use of these areas.

In order to be exempt from the prohibitions of section 9 of the ESA, the Forest must comply with the following terms and conditions ... During the time the livestock are in the River Pasture, a periodic inspection of the riparian areas will be conducted to determine if livestock are in these areas. This inspection must be completed at least three times during

\textsuperscript{275} Id., cover page.
\textsuperscript{276} Ibid.
\textsuperscript{277} Ibid.
\textsuperscript{278} Id., pages 16-17.
the season of use. ... At the end of the season of use for the River Pasture, the riparian areas will be inspected for signs of livestock use of the vegetation and for mechanical/physical damage to streambanks caused by livestock use using standard methods. ... If the monitoring shows excessive use of the riparian areas by livestock, access to these areas will be further restricted.\textsuperscript{279} ... 

This Notice and Center (2020) document that incidental take has been exceeded on the Cedar Bench Allotment. As the September 8, 1995, USFWS Biological Opinion notes,

"As provided in 50 CFR §402.16, reinitiation of formal consultation is required ... if: (1) the amount or extent of incidental take is exceeded...\textsuperscript{280} ... 

Because Incidental Take has been exceeded, reinitiation of formal consultation is required for the Cedar Bench Ridge Allotment.

In addition, because Narrow-headed Gartersnake and Northern Mexican Gartersnake, on July 8, 2014,\textsuperscript{281} their proposed Critical Habitat, on July 10, 2013,\textsuperscript{282} Yellow-billed Cuckoo, on October 3, 2014,\textsuperscript{283} and its proposed Critical Habitat, on February 27, 2020,\textsuperscript{284} have been added to Endangered Species Act protection list since release of the September 8, 1995, USFWS Biological Opinion, and since these species and their Critical Habitat are affected by grazing on the allotment, consultation must be reinitiated pursuant to 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

For a consultation on the Red Creek Allotment, we refer to the December 19, 2000, Biological Opinion based on review proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (\textit{Empidonax traillii extimus}), cactus ferruginous pygmy-owl (\textit{Glaucidium brasilianum cactorum}), Gila topminnow (\textit{Poeciliopsis occidentalis occidentalis}), and loach minnow (\textit{Rhinchithys cobitis}).\textsuperscript{285}

USFWS concludes that Red Creek Allotment grazing "is not likely to jeopardize the continued existence of loach minnow, topminnow, flycatchers, or pygmy-owls" and that "[n]o destruction or

\textsuperscript{279} Id., pages 17-18.
\textsuperscript{280} Id., page 20.
\textsuperscript{284} Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.
\textsuperscript{285} Correspondence, from David L. Harlow, USFWS Arizona Field Supervisor, to: Delvin Lopez, Tonto National Forest Cave Creek Ranger District Ranger; RE: Biological Opinion based on review proposed Red Creek Allotment grazing strategy and associated improvements located on the Cave Creek Ranger District of the Tonto National Forest, Arizona, and its effects on southwestern willow flycatcher (\textit{Empidonax traillii extimus}), cactus ferruginous pygmy-owl (\textit{Glaucidium brasilianum cactorum}), Gila topminnow (\textit{Poeciliopsis occidentalis occidentalis}), and loach minnow (\textit{Rhinchithys cobitis}); December 19, 2000.
adverse modification of critical habitat is anticipated as a result of implementation of the proposed action for flycatchers.” USFWS concludes "no jeopardy" and "no destruction or adverse modification of critical habitat" because "[t]he Forest Service...proposes a fence at Thicket Spring ... [n]o grazing would occur along the Verde River" ... [t]he Tangle Creek and Red Creek pastures would be used as winter pastures, with use alternating every other year between the two pastures287 ... [t]he EA notes that FR 18 will be closed288 ... Zig Zag Spring is a tributary to Red Creek...[a]quatic habitat conditions are considered good,289 ... the lower 2.9 miles of Red Creek, and Dutchman Grave Spring would not be grazed as fencing would exclude livestock grazing from 2.2 miles of Red Creek from Thicket Spring downstream to Zig Zag Creek in Red Creek pasture, 0.5 miles of Zig Zag Creek, and 0.5 miles of Red Creek in the Tangle Creek pasture. ... the upper and lower reaches of Red Creek that would be excluded from grazing should experience recovery of aquatic habitats290 ... "

USFWS concludes "no jeopardy" and "no destruction or adverse modification of critical habitat" because taking limitations will not be exceeded if the following requirement are not achieved: "[v]ehicular use of the road not necessary for Forest Service or grazing management purposes continues ... The proposed grazing management does not result in improved conditions of those portions of the Horseshoe Reservoir Watershed found with the Red Creek Allotment within five years ... [t]he proposed 40 percent utilization levels for riparian areas...are exceeded by more than five percent at any time or streambank alteration exceeds 20 percent by length due to trampling, chiseling, or other physical impacts by livestock...291 ... [a] gate shall be installed by the Forest Service on FR 18 to prevent off-road vehicle and recreational traffic to ensure that no direct mortality of topminnow occurs as a result of vehicles in the active channel of Red Creek. ... [t]he Forest Service shall monitor streambank alteration during pasture use for those pastures with access to Red Creek. If alteration has already exceeded 20 percent, cattle shall be removed from the pasture ... "292 And if any of these taking limitations are violated reinitiation of consultation will be necessary.293

This Notice and Center (2020) demonstrate inadequacies of the December 19, 2000, Red Creek Biological Opinion by presenting new information revealing that the effects of the action (grazing) is affecting listed species, examined in this Biological Opinion, Gila Topminnow, Southwestern Willow Flycatcher, and designated Southwestern Willow Flycatcher Critical Habitat, as well as Gila Topminnow, Narrow-headed Gartersnake, New Mexican Gartersnake, and Yellow-billed Cuckoo, in a manner and to an extent not previously considered. Consequently, reinitiation of
consultation for the December 19, 2000, Red Creek Allotment is required pursuant to 50 C.F.R. § 402.16.

The December 19, 2000, Biological Opinion provides for an Incidental Take Statement for Loach Minnow, Gila Topminnow, Southwestern Willow Flycatcher, and Cactus Ferruginous Pygmy-Owl. For each, "[t]he Service does not anticipate that the proposed action will incidentally take" any.294

For Gila Topminnow,

"[t]he Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take authorized by this biological opinion. ... Conduct all proposed actions in a way that will minimize direct mortality of topminnow. ... Conduct all proposed actions in a way that will minimize loss and alteration of topminnow habitat. ... Ensure that any actions taken as part of the proposed action will not preclude the restocking of topminnow in the future."295

And,

"[i]n order to be exempt from the prohibitions of section 9 of the Act, the Forest Service is responsible for compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. ...

...A gate shall be installed by the Forest Service on FR 18 to prevent off-road vehicle and recreational traffic to ensure that no direct mortality of topminnow occurs as a result of vehicles in the active channel of Red Creek. ... The Forest Service shall monitor streambank alteration during pasture use for those pastures with access to Red Creek. If alteration has already exceeded 20 percent, cattle shall be removed from the pasture. If utilization is within 5 percent of the utilization maximum, plans for early removal of cattle shall be developed. ... The Forest Service shall implement closure of FR 18, as described above."297 ...

This Notice and Center (2020) document that incidental take has been exceeded on the Red Creek Allotment. As the December 19, 2000, USFWS Biological Opinion notes,

"As provided in 50 CFR §402.16, reinitiation of formal consultation is required ... if: (1) the amount or extent of incidental take is exceeded."298 ...

Because Incidental Take has been exceeded, reinitiation of formal consultation is required for the Red Creek Allotment.

294 Id., page 47.
296 Id., pages 47-48.
297 Id., pages 48-49.
298 Id., pages 51-52.
In addition, because Southwestern Willow Flycatcher Critical Habitat, on January 3, 2013,\textsuperscript{299} Narrow-headed Gartersnake and Northern Mexican Gartersnake, on July 8, 2014,\textsuperscript{300} their proposed Critical Habitat, on July 10, 2013,\textsuperscript{301} Yellow-billed Cuckoo, on October 3, 2014,\textsuperscript{302} and its proposed Critical Habitat, on February 27, 2020,\textsuperscript{303} have been added to Endangered Species Act protection list since release of the December 19, 2000, USFWS Biological Opinion, and since these species and their Critical Habitat are affected by grazing on the allotment, consultation must be reinitiated pursuant to 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

**CONCLUSION**

We are appalled and disgusted by our observations on the Coconino, Prescott, and Tonto National Forests that reveal complete disregard for mandated protection of Public Lands riparian areas in the Verde River Watershed. In this Notice and Center (2020), we document widespread destruction of the riparian areas within the Verde River Watershed on the Coconino, Prescott and Tonto National Forests.

The Forest Plans for the Coconino, Prescott and Tonto National Forests all contain language that the Forest Service Forest Plans will "ensure sustainable ecosystems [and] will support ecological sustainability." The Coconino National Forest Plan "aims to promote responsible land management...guides the Forest Service in fulfilling its responsibilities for the stewardship of the Forest ... provides strategic guidance ... [and] is a framework for sustaining native ecological systems."\textsuperscript{304} The Prescott National NF Forest Plan "is intended to produce responsible land management ... while ecosystem processes and biological characteristics continue to fulfill their natural rhythm."\textsuperscript{305} The Tonto National Forest Plan "defines the long-term direction to provide for multiple use...in an environmentally sound manner."\textsuperscript{306}


\textsuperscript{303} Revised Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo; U.S. Fish and Wildlife Service; 85 FR 11458; February 27, 2020.


Similarly, the August 24, 2018, USDA Forest Service – Southwestern Region Riparian and Aquatic Ecosystem Strategy says,

"Rivers and streambeds are conduits for life. In no other ecosystem can we as an agency have a greater impact in "Caring for the land and serving people." Protection and enhancement of riparian and enhancement of riparian and aquatic areas is paramount in providing habitat and sustainable water for dependent fish, wildlife, plant species, and human communities alike. ..."308

The overarching goal of this strategy is to ensure that the ecological integrity of riparian and aquatic habitats is maintained and/or restored."309

In this Notice and in Center (2020), we document the fact that Forest Service personnel from the Coconino, Prescott and Tonto National Forests obviously care little about their own agency's Riparian Strategy, Forest Plans, Wild and Scenic River Management Plans, and USFWS' Biological Opinions and Recovery Plans, and the laws intended to protect riparian areas and their representative and dependent Endangered Species.

Twenty cattle grazing allotments are involved here as are at least seven Biological Opinions covering nine present endangered species and multiple others dependent on the area for their Recovery. In this Notice and in Center (2020), we present documentation of the multiple enforceable violations of law related to these grazing allotments, Biological Opinions, Endangered Species and Critical Habitat.310

The observations and documentation presented here in this Notice and in Center (2020) deserve and demand emergent attention and remedy. In sixty days, if you have still not taken corrective action to stop Incidental Take and have not reinitiated formal consultation regarding these destructive actions and activities in the Verde River Watershed riparian areas on the Coconino, Prescott and Tonto National Forests, in accordance with the ESA citizen suit provision, 16 U.S.C. § 1540(g), the Center for Biological Diversity and Maricopa Audubon Society will seek judicial relief.

309 Id., page 2.
CONTACT INFORMATION

If you have further questions, please contact Robin Silver, M.D., Center for Biological Diversity, P.O. Box 1178, Flagstaff, AZ 86002, by mail; by phone: (602) 799-3275, or by Email: rsilver@biologicaldiversity.org.

Sincerely,

Robin Silver, M.D.
Co-Founder and Board Member
Center for Biological Diversity