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Via Electronic and Certified Mail

Doug Burgum, Secretary of the Interior
U.S. Department of the Interior
1849 C Street NW
Washington, D.C. 20240
exsec_exsec@ios.doi.gov
exsec@ios.doi.gov

Bill Groffy, Principal Deputy Director
U.S. Bureau of Land Management
1849 C Street NW
Washington, D.C. 20240
wgroffy@blm.gov

Brian Nesvik, Director
U.S. Fish and Wildlife Service
1849 C Street NW
Washington, D.C. 20240
brian_nesvik@fws.gov

RE: Sixty-Day Notice of Intent to Sue for Violations of the Endangered Species Act: the Gila District Livestock Grazing Program and its Impacts on Threatened and Endangered Species and Critical Habitat

Dear Secretary Burgum, Principal Deputy Director Groffy, and Director Nesvik:

The Center for Biological Diversity ("the Center") and Maricopa Bird Alliance ("the Alliance," formerly Maricopa Audubon Society) provide this sixty-day notice of intent to sue the U.S. Bureau of Land Management ("BLM") and the U.S. Fish and Wildlife Service ("FWS") for violating Section 7 of the Endangered Species Act, 16 U.S.C. §§ 1531–1544 ("ESA") and the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701–706. This Notice relates to FWS's May 21, 2012 Biological Opinion ("2012 BiOp") and January 31, 2024 Biological Opinion ("2024 BiOp") on the impacts of BLM's Gila District Livestock Grazing Program on threatened and endangered species and their critical habitat. The Center provides this Notice in accordance with the sixty-day notice requirement of the ESA's citizen suit provision. *See* 16 U.S.C. § 1540(g)(2)(C).

This Notice supplements the Center's and the Alliance's November 20, 2024 Notice regarding the 2024 BiOp, our April 10, 2023 Notice regarding livestock grazing in the Middle Gila grazing allotments (and the May 1, 2023 supplement to the April 2023 Notice), and our July 22, 2021 Notice regarding livestock grazing in the Gila Box Riparian National Conservation Area ("Conservation Area"). As detailed in our 2021, 2023, and 2024 Notices, livestock grazing in the Gila District and the Conservation Area has caused, and continues to cause, extensive destruction of designated critical habitat for threatened and endangered species. Our 2021, 2023, and 2024 Notices, which we incorporate by reference, provide a thorough account of the

agencies' extensive history of unlawfully permitting destructive livestock grazing in the Gila District and the Conservation Area.

This Notice identifies several additional ESA violations with respect to FWS's 2012 and 2024 BiOps and BLM's reliance on these BiOps. Specifically, FWS's 2024 BiOp violates the ESA by ignoring the facts before the agency, failing to support its conclusions with the best available science, and issuing vague and unenforceable reinitiation triggers. BLM's reliance on the 2024 BiOp also violates BLM's independent duty to ensure that its actions are not likely to jeopardize the continued existence of ESA-listed species. *See id.* § 1536(a)(2). FWS's 2024 BiOp, and BLM's reliance on it, are arbitrary, capricious, and contrary to the ESA. *See id.*; 5 U.S.C. § 706. Further, BLM and FWS have failed to reinitiate and complete consultation on the 2012 and 2024 BiOps, despite new information demonstrating ESA-listed species are being affected in a manner and to an extent not considered in the 2012 and 2024 BiOps. *See* 50 C.F.R. § 402.16;[1] 16 U.S.C. § 1536(a)(2).

This Notice also provides further documentation demonstrating that livestock remain ubiquitous throughout riparian and critical habitat areas purportedly closed to grazing. As shown by the attached documents, this illegal livestock grazing continues to cause severe and widespread damage to designated critical habitat throughout the Gila District and the Conservation Area. In 2025—as was the case in 2024—*not a single mile of river* in the Conservation Area, which is purportedly off-limits to grazing, was unaffected by cattle.[2]

LEGAL BACKGROUND

The Endangered Species Act is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978).

Under Section 7 of the ESA, before taking any action that may have direct or indirect effects on any listed species, an action agency must consult with FWS to evaluate the impact of the proposed action. *See* 16 U.S.C. § 1536(a). The purpose of consultation is to ensure that the proposed action "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated critical] habitat of such species." *Id.* § 1536(a)(2). According to ESA regulations, an action causes jeopardy to a listed species if it "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02.

[1] *See Ctr. for Biological Diversity v. U.S. DOI*, No. 24-cv-04651-JST, 2026 U.S. Dist. LEXIS 68386, at *72 (N.D. Cal. Mar. 30, 2026) (vacating 50 C.F.R. § 402.16(a) (2025), concerning the duty to request reinitiation of consultation, and reinstating prior (2023) version, under which both the action agency and FWS share responsibility for reinitiating consultation).

[2] The Center will provide the agencies with data from its 2026 surveys in the coming weeks, but its initial review of data shows little change from the situation in 2024 and 2025.

The evaluation of the effects of the proposed action on listed species during consultation must use "the best scientific . . . data available." 16 U.S.C. § 1536(a)(2). Additionally, once consultation is initiated, the action agency is prohibited from making "any irreversible or irretrievable commitment[s] of resources . . . which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures." *Id.* § 1536(d).

Consultation under Section 7 may be "formal" or "informal" in nature. Informal consultation is "an optional process" involving all correspondence between the action agency and FWS, which is designed to assist the action agency, rather than FWS, in determining whether formal consultation is required. *See* 50 C.F.R. § 402.02. During an informal consultation, the action agency requests information from FWS as to whether any listed species may be present in the action area. If so, the action agency is required by Section 7(c) of the ESA to prepare and submit to FWS a "biological assessment" that evaluates the potential effects of the action on listed species and critical habitat. 16 U.S.C. § 1536(c)(1). As part of the biological assessment, the action agency must make a finding as to whether the proposed action may affect listed species and submit the biological assessment to FWS for review and potential concurrence with its finding. *Id.* If the action agency determines the proposed action "is not likely to adversely affect" listed species or critical habitat, and FWS concurs, the informal consultation process ends. 50 C.F.R. § 402.14(b).

However, if the proposed action "may affect" listed species or critical habitat, formal consultation is required. 50 C.F.R. § 402.14(a); *see also* FWS, Endangered Species Consultation Handbook at 3–13 (1998) (hereinafter "Consultation Handbook"). The result of formal consultation is a Biological Opinion ("BiOp") from FWS, which analyzes the best available scientific data on the pre-existing status of the species and evaluates how the proposed action would impact the species' status compared to its baseline condition.[3]

A BiOp must include a description of the proposed action, a review of the species' status and critical habitat, an evaluation of the environmental baseline, and an analysis of the direct and indirect effects of the proposed action, along with the cumulative effects of reasonably certain future state, tribal, local, and private actions. *See* 50 C.F.R. § 402.14(g); *see also* Consultation Handbook at 4-14 to 4-31. At the conclusion of formal consultation, FWS determines whether the proposed action—in addition to the pre-existing environmental baseline of the species—is likely to jeopardize the continued existence of a listed species or destroy or adversely modify any designated critical habitat.

If FWS concludes that the action is not likely to jeopardize listed species or result in the destruction or adverse modification of critical habitat but will result in incidental take, it must provide the action agency with a written Incidental Take Statement ("ITS"). The ITS specifies the "impact of such incidental taking on the species" and "those reasonable and prudent

[3] When preparing a BiOp, FWS must (1) "[r]eview all relevant information," (2) "[e]valuate the current status and environmental baseline of the listed species or critical habitat," and (3) "evaluate the effects of the action and cumulative effects on the listed species or critical habitat," 50 C.F.R. § 402.14(g), using "the best scientific and commercial data available," 16 U.S.C. § 1536(a)(2).

measures that [FWS] considers necessary or appropriate to minimize" those impacts, as well as "terms and conditions" that the action agency must follow. 16 U.S.C. § 1536(b)(4). Should FWS determine that the action will jeopardize a listed species or adversely modify critical habitat, it must suggest reasonable and prudent alternatives to avoid such outcomes. *Id.* § 1536(b)(3)(A).

An ITS must specify the impact of incidental take on the species. 50 C.F.R. § 402.14(i)(l)(i). FWS may use a surrogate to express the amount or extent of anticipated take, provided the BiOp explains the connection between the surrogate and the take of the listed species, justifies why measuring take directly is not practical, and establishes a clear standard for determining when the take limit has been exceeded. *Id.* If an exceedance occurs, the action agency must reinitiate consultation immediately. *Id.* § 402.14(i)(5); *see also id.* § 402.16(a)(1) (requiring reinitiation of consultation "[i]f the amount or extent of taking specified in the [ITS] is exceeded"). Immediate reinitiation of consultation is also required "[i]f 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." *Id.* § 402.16(a)(2).

Without a valid BiOp and ITS—or a lawful concurrence in a "not likely to adversely affect" determination during informal consultation—any activities resulting in take of listed species are unlawful. 16 U.S.C. § 1538(a)(1)(B), (G); 50 C.F.R. § 17.21(c); 50 C.F.R. § 17.31. Anyone who undertakes or authorizes such activities may face criminal and civil federal enforcement actions, as well as civil citizen suits seeking declaratory and injunctive relief. *See* 16 U.S.C. §§ 1538(g), 1540. This includes action agencies, which bear independent responsibility for ensuring their activities comply with the ESA; an action agency "cannot abrogate its responsibility to ensure that its actions will not jeopardize a listed species" merely by relying upon a BiOp, concurrence, or other consultation document issued by FWS. *Pyramid Lake Paiute Tribe v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).

LEGAL VIOLATIONS

This Notice identifies ESA and APA violations regarding the 2012 and 2024 BiOps, in addition to those identified in our November 2024 Notice.

I. Unlawful Framing and Unsupported Assumptions

At the outset, the 2024 BiOp is arbitrary and violates the ESA because it does not consider unauthorized grazing a part of the agency action—despite the fact that BLM's authorization of grazing is undisputedly causing unauthorized grazing: "In this consultation, we do not consider unauthorized grazing as part of the proposed action, but we do consider unauthorized grazing as a condition of the environmental baseline." 2024 BiOp at 9. The United States District Court for the District of Arizona recently determined this approach is unlawful. *See Ctr. for Biological Diversity v. U.S. BLM*, No. CV-24-00141, 2026 U.S. Dist. LEXIS 68876, at *22 (D. Ariz. Mar. 30, 2026) ("Defendants' contention that there exists no obligation to consult on the effects of illegal or unauthorized [grazing] is without merit; allowing agencies to turn a blind eye to activities directly enabled but not expressly authorized by their actions is an impermissible result under the ESA.").

Relatedly, the 2024 BiOp is also arbitrary because it repeatedly assumes that cattle are excluded from occupied and critical riparian habitats—such as those of the endangered spikedace, endangered loach minnow, threatened western yellow-billed cuckoo, and endangered southwestern willow flycatcher—while ignoring clear evidence that the proposed action leads to unauthorized grazing and associated impacts. The facts before FWS—including the biological surveys the Center submitted to FWS both long before and after the 2024 BiOp was issued—contradict these assumptions. *See Ctr. for Biological Diversity v. U*.S. *BLM*, No. CV-24-00141, 2026 U.S. Dist. LEXIS 68876, at *21 (D. Ariz. Mar. 30, 2026) ("[I]n omitting any discussion regarding the fact that preexisting fences on the Horseshoe Allotment had not been fully effective in keeping cattle out of restricted areas, the agencies entirely failed to consider an important aspect of the problem at hand.").

The 2024 BiOp also violates the ESA through its unscientific characterization of the grazing program's impacts on numerous listed species.

II. Acuña Cactus

The 2024 BiOp's analysis of the grazing program's impacts on the endangered acuña cactus and its critical habitat is arbitrary.

The 2024 Biological Opinion acknowledges that livestock grazing is a threat to the acuña cactus. For example, the 2024 Biological Opinion notes that livestock grazing may adversely affect the cactus through direct physical contact, including trampling and dislodging individual plants. 2024 BiOp at 32. FWS further found that livestock grazing and range improvement projects may degrade acuña cactus habitat, leading to adverse lethal and non-lethal effects from reduced reproduction and growth, and long-term surface disturbance to designated critical habitat. *Id.* at 33. FWS also determined that livestock grazing is "likely to adversely affect acuña cactus critical habitat PCEs [Primary Constituent Elements] primarily through changes in vegetation composition and abundance," which can cause soil erosion and compaction, reduced water infiltration, and increased runoff. *Id.* Additionally, FWS concluded that designated critical habitat would be affected from livestock grazing through utilization of plants that provide protection to the cactus or pollinator habitat. *Id.*

Despite these findings, FWS asserted that the proposed action is not likely to cause acuña cactus to reach a tipping point—*i.e.*, a point at which ongoing and new adverse effects render recovery difficult if not impossible to achieve—on the grounds that the action would not expand the scope or intensity of existing activities. *See id.* at 34. FWS further reasoned that conservation measures included in the proposed action would mitigate adverse effects to the cactus and its critical habitat through surveying and implementation of protective terms and conditions on allotment permits as necessary. *Id.*

FWS ultimately concluded that the proposed action "is not likely to jeopardize the continued existence of the acuña cactus and is not likely to destroy or adversely modify designated critical habitat." *Id.* FWS based these conclusions on the following factors: (1) more than 60% of acuña cactus individuals occur within lands "protected" from cattle grazing; (2) although the status of the acuña cactus on the Box O and Horsetrack allotments is declining, the

cactus is in decline across the Southwest due to baseline conditions; (3) the implementation of "General Conservation Measures" will result in BLM implementing actions to avoid and/or minimize effects to the cactus and its critical habitat when planning site-specific actions; (4) the proposed action will affect a relatively small portion of the species' range-wide critical habitat; (5) increased mortality of plants that protect the cactus or provide pollinator habitat is occurring range-wide and "may not be" entirely the result of livestock grazing; additionally, soils underlying the acuña cactus "may be" largely unaffected by grazing, as the underlying substrates are not directly removed or disturbed; and (6) the proposed action is not likely to appreciably diminish the ability for acuña cactus critical habitat to contribute to recovery of the species. *Id.* at 34–35.

In reaching its no-jeopardy and no-destruction or adverse modification conclusions, FWS fails to articulate a rational connection between the facts presented and its ultimate determination.

For example, FWS's reliance on the fact that more than 60% of acuña cactus individuals occur within lands protected from cattle grazing is arbitrary and does not justify its no-jeopardy and no-adverse-modification conclusions. The fact that a subset of individuals is theoretically protected elsewhere does not satisfy the requirement that FWS determine whether the action will appreciably diminish the species' likelihood of both survival and recovery. FWS fails to explain how the continued degradation of critical habitat in the action area, where grazing occurs, will not adversely affect the species' overall recovery.

FWS also improperly discounts the significance of continued habitat degradation within the Box O and Horsetrack allotments by suggesting that the species is already in decline across its range due to baseline conditions. This reasoning ignores FWS's own finding that habitat degradation, including from livestock grazing, is the primary driver of the species' decline. By allowing ongoing habitat destruction under the guise of baseline deterioration, FWS effectively endorses continued harm to a species already at risk of extinction.

Additionally, FWS's assertion that that the affected habitat constitutes a "relatively small" portion of the species' critical habitat fails to justify how allowing further degradation within these critical habitat units—areas that FWS acknowledges help maintain the species' geographic range and provide opportunities for population growth—will not hinder the species' survival and recovery efforts.

Last, FWS's conclusion that the proposed action is not likely to appreciably reduce the likelihood of recovery of the acuña cactus is arbitrary because it fails to reconcile its determination with the best available science. The 2022 Final Recovery Plan for acuña cactus calls for reduction of unauthorized livestock use and improved management of livestock in areas where livestock are allowed. 2024 BiOp at 34 (citing recovery plan). Yet FWS acknowledges in its 2024 Biological Opinion that the proposed action represents an ongoing grazing regime where the geographic scope and intensity remain unchanged, despite its own findings that livestock grazing causes direct mortality, habitat degradation, and long-term adverse effects to the physical and biological features essential to the species' conservation.

III. Chiricahua Leopard Frog

Next, the 2024 BiOp's analysis of the grazing program's impacts on the threatened Chiricahua leopard frog and its critical habitat is arbitrary.

The 2024 Biological Opinion acknowledges that livestock grazing may adversely affect the Chiricahua leopard frog through direct physical harm, including trampling of individuals, destruction of egg masses, and degradation of critical habitat. FWS found that livestock grazing can negatively impact essential aquatic breeding habitats, including through increased sedimentation, wetland and riparian vegetation loss, erosion and/or siltation of stream courses, elimination of undercut banks, spread of disease and non-native predators, and water quality degradation, all of which reduce the frog's ability to survive and reproduce. *See* 2024 BiOp at 44–45. During periods of drought, FWS admits that livestock grazing is likely to have pronounced harmful effects on the species, as aquatic habitats become smaller or disappear entirely. *See id.* at 43. Additionally, because cattle tend to spend a disproportionate amount of time in riparian zones, they can adversely affect these systems in several important ways. *Id.* at 43–44.

Although stock tanks provide refugia for frog populations, FWS's 2007 Recovery Plan admits that they may facilitate the spread of infectious disease and non-native aquatic organisms, destroy natural habitats at or downstream of the tank during construction, and are sometimes "mortality sinks with little reproduction or recruitment." FWS, *Final Recovery Plan, Chiricahua Leopard Frog* 3 (Apr. 2007), available at https://ecos.fws.gov/docs/recovery_plan/070604_v3.pdf.

Despite acknowledging these adverse effects, FWS concluded that the proposed action is not likely to jeopardize the continued existence of the Chiricahua leopard frog or adversely modify its designated critical habitat. This conclusion is based on several factors, including: (1) the implementation of general and species-specific conservation measures by BLM intended to minimize adverse effects to the Chiricahua leopard frog and its critical habitat; (2) anticipated ongoing removal of nonnative bullfrogs and reintroduction of Chiricahua leopard frogs throughout their range; (3) the assertion that residual effects would not operate on a rangewide scale and are thus unlikely to impede leopard frog recovery; and (4) the assumption that critical habitat PCEs are not anticipated to be affected to such an extent that recovery of the frog is "no longer possible." 2024 BiOp at 49–50.

After concluding that the proposed action would not jeopardize the Chiricahua leopard frog or destroy or adversely modify its critical habitat, FWS issued an ITS for the species. FWS anticipates that take of Chiricahua leopard frogs, in the form of harm, harassment, injury and killing, is reasonably certain to occur as a result of the proposed action. More specifically, FWS anticipates:

> (1) death or injury of frogs at occupied stockponds where maintenance activities result in significant disturbance at the tank (e.g. dredging or silt removal, major repair of berms); (2) killing or injury through trampling and destruction of egg masses, tadpoles, metamorphosing or overwintering frogs, and ingestion of larvae and eggs by livestock at occupied stockponds where livestock have access; (3) harm

> of frogs subject to disease transmission from livestock-related factors; (4) harassment through disrupted feeding and sheltering of Chiricahua leopard frogs due to loss of bankline and emergent vegetation at occupied stockponds where livestock have access; (5) harm and harassment through lost reproductive output of Chiricahua leopard frogs due to sedimentation of pools or other forms of habitat degradation where livestock contribute to erosion in upland areas; and [6] harm to Chiricahua leopard frogs from livestock use of occupied stockponds that results in the deterioration of water quality to such an extent that conditions become toxic for frogs.

Id. at 50–51.

FWS also purports to employ "measurable effects to habitat" as surrogates for evaluating take of the species. Specifically, the ITS states that take will be exceeded if one or both of the following conditions are met:

> [Criterion 1] One waterbody or 10 percent (whichever is greater) or more of currently or previously occupied, perennially wetted stockponds, or any core breeding habitat outside of stockponds (i.e. Cienega Creek) used by Chiricahua leopard frogs in any one Management Unit where the species occurs or is likely to occur in the future fail to meet any one or more of the three, specific PCEs . . . for a period of two consecutive years. Effects considered for take must be directly attributable to livestock grazing or livestock management. . . .
>
> [Criterion 2] Take will also be exceeded if conditions in any portion of the project area where Chiricahua leopard frogs may occur are found to be within the SPI [Standardized Precipitation Index[4]] category of D3 (extreme drought) or worse (D4; exceptional drought) for an average value of -1.9 to -1.6 for the first 12 months, and then as measured monthly (continuously) for an additional 12 months at the D3 or D4 levels, if an agreement between the BLM and the appropriate permittees is not entered into, or if action has not been taken per 43 CFR [§] 4110.3-3(b) to either reduce livestock numbers to appropriate AUM [Animal Unit Month[5]] levels or close portions of affected allotments.

Id. at 51–52.

The referenced primary constituent elements ("PCEs") of Chiricahua leopard frog critical habitat affected by grazing include: PCE1a (salinity less than 5 parts per thousand, pH greater

[4] The Standardized Precipitation Index, or SPI, "is a drought index that captures how observed precipitation deviates from the climatological average over a given time period." U.S. Gridded Standardized Precipitation Index (SPI) from nClimGrid-Daily, Nat'l Integrated Drought Info. Sys., NOAA, https://www.drought.gov/data-maps-tools/global-cpc-unified-daily-precipitation-drought-indices (last visited April 15, 2026).

[5] Animal Unit Months, or AUM, is the amount of forage needed by a mature 1,000-pound cow for one month of grazing—generally estimated at 750–800 pounds of forage consumed.

than or equal to 5.6, and pollutants absent or minimally present); PCE1b (emergent and or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof, but emergent vegetation does not completely cover the surface of water bodies); and PCE1e (upland areas that provide opportunities for foraging and basking that are immediately adjacent to or surrounding breeding aquatic and riparian habitat). *Id*. at 39.

FWS's surrogates fail to set forth a clear, enforceable standard for determining when the level of authorized take of the Chiricahua leopard frog has been exceeded. Both criteria provided are vague, ambiguous, and leave substantial room for subjective interpretation.

With regard to Criterion 1, the threshold for determining when a site has "failed to meet" a PCE is not clearly defined. While some of the PCEs offer some specific metrics (e.g., salinity below 5 parts per thousand and pH above 5.6), the incidental take thresholds do not clearly establish how or when violations of these thresholds constitute a "failure" for two consecutive years and trigger a finding of exceeded take. For example, if salinity and pH levels are exceeded, what kind and level of pollutants is necessary to constitute a "failure" to meet PCE1a?

Criterion 1 further requires that effects be "directly attributable to livestock grazing or livestock management." However, it does not outline a methodology for determining causation. Given that many stressors—such as drought, disease, and nonnative species—overlap in the areas covered by the ITS, failing to establish clear protocols for attributing degradation specifically to grazing leaves the standard vague and without a clear trigger for reinitiation of consultation.

Criterion 2, which ties take exceedance to prolonged drought conditions as measured by the Standardized Precipitation Index, is similarly flawed. The standard requires prolonged drought conditions (24 consecutive months of D3- or D4-level drought) before recognizing take exceedance. This arbitrary, prolonged timeframe allows ongoing habitat degradation and take of the species for two years before triggering reinitiation of consultation. In other words, regardless of livestock-related habitat destruction or the number of frogs killed, harmed, or harassed by the proposed action, there is no mechanism under this surrogate standard to exceed the ITS within the first two years of the project. By imposing only a temporal limitation, the surrogate permits potentially irreversible harm to the species and its critical habitat before reinitiation is required.

Criterion 2 is further arbitrary and unenforceable because its requirement of twelve consecutive months of D3- or D4-level drought, measured on a monthly basis using the Standard Precipitation Index, is functionally unattainable in the project area. The Standard Precipitation Index is calculated as a deviation from average precipitation; however, average precipitation in the Gila District is zero or near zero during certain months, including May (and often June). Because precipitation cannot fall below a zero baseline, Standard Precipitation Index values reset during those months. As a result, the ITS establishes a take-exceedance trigger that cannot be met.

Moreover, even if the arbitrary threshold of 24 consecutive months of severe drought is reached, take may still not be recognized as exceeded if an agreement between BLM and the appropriate permittees is entered into, some action—however minimal—is undertaken to reduce

livestock numbers to what are deemed "appropriate AUM levels," or unspecified portions of affected allotments are closed. This loophole fails to account for whether those reductions are sufficient to mitigate the actual harm already inflicted on the species and its habitat. Without clear, science-based criteria for determining when livestock reductions are adequate to prevent take, this standard provides an ill-defined and insufficient safeguard. It effectively allows continued harm under the guise of compliance, enabling significant, ongoing habitat degradation and jeopardizing the long-term survival of the species.

IV. Narrow-Headed Gartersnake

The 2024 BiOp's analysis of the grazing program's impacts on the threatened narrow-headed gartersnake and its critical habitat is arbitrary.

The narrow-headed gartersnake faces multiple threats contributing to its population decline and habitat degradation. Chief among these threats is the introduction and spread of predatory nonnative aquatic species, such as bass, catfish, bullfrogs, and crayfish. These invasive species directly reduce the gartersnake's prey base, outcompete native fish populations, and physically injure gartersnakes attempting to ingest them. The ecological disruptions caused by these nonnative species have fundamentally altered many of the gartersnake's historical habitats, reducing both prey availability and habitat suitability. 2024 BiOp at 57–59. Additionally, livestock grazing exacerbates the species' decline by increasing sedimentation in streams, degrading aquatic and riparian vegetation, reducing prey abundance, and diminishing water quality through heightened turbidity and nutrient loading. *Id*. at 70–71.

Additional threats further compound the gartersnake's vulnerability. Water diversions and groundwater pumping deplete essential aquatic habitats, while wildfires and post-fire flooding devastate fish populations and degrade water quality. *Id*. at 59–61. Climate change intensifies these threats by altering hydrological patterns, reducing streamflows, stream drying, and facilitating the expansion of predatory nonnative species. *Id*. at 61. These factors, in combination, increase habitat fragmentation and isolation of gartersnake populations, leading to genetic bottlenecks and a diminished capacity for long-term population viability. *Id*. at 61–62.

Despite acknowledging the threats posed by livestock grazing and other environmental stressors, FWS's 2024 Biological Opinion concludes that the proposed action would not jeopardize the continued existence of the narrow-headed gartersnake. FWS further concludes that because critical habitat for the narrow-headed gartersnake was designated upstream of BLM allotments, the action is not anticipated to adversely modify the species' critical habitat. *Id*. at 72–73.

FWS bases its no-adverse modification determination on its conclusion that "there is no effect" to narrow-headed gartersnake critical habitat. *Id.* at 72. In doing so, FWS fails to reconcile its conclusion with its own assertion that critical habitat for the narrow-headed gartersnake in the Eagle Creek Unit "may be affected by the proposed action." 2024 BiOp at 65. FWS dismisses its own finding without further analysis by asserting that the location of critical habitat relative to grazing allotments obviates any potential for adverse modification.

After concluding that the proposed action would not jeopardize the narrow-headed gartersnake or destroy or adversely modify its critical habitat, FWS issued an ITS for the species, finding:

> [T]ake of individuals from the lower Eagle Creek population is considered likely from project implementation. Take is anticipated to occur through indirect, watershed-level mechanisms associated with grazing effects to fish species and their habitat from sediment generation and transport into the recipient stream which has been found to adversely affect foraging and reproduction habitat of fish as prey species for the narrow-headed gartersnake. The population status of narrow-headed gartersnakes along the lower Gila and San Francisco Rivers in Arizona remains uncertain and therefore we do not anticipate take of narrow-headed gartersnakes associated with those rivers.

Id. at 73.

FWS determined that the "[i]ndirect take caused by the habitat-related effects of this action are difficult to accurately quantify as a numerical level." *Id.* Therefore, FWS decided to "use fish as prey species as a surrogate for take of gartersnakes," because "[f]ish are easier to find, survey, and monitor, and offer a more scientific basis for providing incidental take for gartersnakes." *Id.* at 73–74. Therefore, "take of narrow-headed gartersnakes will be considered exceeded if take is exceeded for Gila chub, spikedace, or loach minnow, referencing the 2012 consultation on Gila District Grazing that could co-occur in the Eagle Creek." *Id.* at 74.

However, in its 2012 Biological Opinion, FWS concluded that it did not anticipate incidental take for the Gila chub, spikedace, or loach minnow.[6] Thus, FWS's 2024 ITS—by tying incidental take of the narrow-headed gartersnake to these fish species—effectively sets the allowable take at zero. Yet FWS offers no explanation or rationale for how this zero-take scenario aligns with its own finding that take of gartersnakes is likely to occur or with its conclusion in the 2024 Biological Opinion regarding the adverse effects of the proposed action on the subject fish species. Nowhere in the 2024 Biological Opinion does FWS reconcile these contradictions or explain how its surrogate approach can meaningfully quantify or limit take of gartersnakes when the chosen surrogate species were—in 2012—not expected to experience take themselves. By tethering the ITS for the gartersnake to species for which no take is anticipated, FWS has failed to provide a "statement concerning incidental take that[] [s]pecifies the impact of incidental taking as the amount or extent of such taking." 50 C.F.R. § 402.14(i)(1)(i). FWS has also failed to establish a clear standard for determining when the anticipated level of take of the narrow-headed gartersnake has been exceeded. *See id.*

Additionally, FWS's conclusion that no take of narrow-headed gartersnakes is anticipated along the lower Gila and San Francisco Rivers in Arizona—based solely on its apparent uncertainty about the species' population in those areas, and despite record evidence confirming that the gartersnake is extant in the San Franscisco River—fails to comply with FWS's

[6] *See* FWS, *Biological Opinion on the Gila District Livestock Grazing Program* 106–07 (May 21, 2012) (hereinafter "2012 BiOp").

mandatory duty under the ESA to issue a lawful ITS. *See id*. § 402.14(i). Specifically, where, as here, FWS has found that the proposed action may affect, and is likely to adversely affect the narrow-headed gartersnake within the action area, but that no violation of Section 7(a)(2) will occur by the resultant incidental take, FWS is required to issue an ITS that specifies the anticipated impact of the incidental taking, expressed as the amount or extent of such taking. *Id.*

V. Northern Mexican Gartersnake

The 2024 BiOp's analysis of the grazing program's impacts on the threatened northern Mexican gartersnake and its critical habitat is also arbitrary.

The northern Mexican gartersnake faces numerous, well-documented threats, the most significant of which is the introduction and spread of predatory nonnative aquatic species. These species severely impact gartersnake populations by reducing their native prey base, physically injuring gartersnakes attempting to consume them, and directly preying on juvenile snakes. The cumulative effects of these nonnative species have led to drastic declines in the gartersnake's primary prey populations, resulting in cascading ecological disruptions across its habitat. 2024 BiOp at 78–79.

Additional environmental stressors, including the depletion of aquatic habitats, exacerbate the species' decline. *Id*. at 79–80. Habitat degradation from livestock grazing contributes to sedimentation, disrupts aquatic food webs, and depletes riparian vegetation crucial for foraging and cover. *Id*. at 92–94. The interaction of these threats leads to habitat fragmentation, population isolation, and genetic bottlenecks, reducing the gartersnake's ability to recover and maintain long-term viability. *Id.* at 81.

Despite recognizing the myriad threats facing the northern Mexican gartersnake, FWS's 2024 Biological Opinion concludes that the proposed action will not jeopardize the northern Mexican gartersnake's continued existence or adversely modify its critical habitat. FWS bases this conclusion in part on its assertion that adverse effects from grazing are anticipated to be "indirect" and limited to "isolated portions" of the species' range; northern Mexican gartersnakes have existed in conjunction with livestock grazing programs on public lands; livestock grazing is not considered to be a leading contributor to the decline of the species; and implementation of conservation measures addressing nonnative species are likely to aid in gartersnake recovery. 2024 BiOp at 95.

After concluding that the proposed action would not jeopardize the narrow-headed gartersnake or destroy or adversely modify its critical habitat, FWS issued an ITS for the species. FWS found that "incidental take is expected to be in the form of harm or direct mortality from effects associated with stockpond maintenance activities (such as dredging) in occupied habitat and adverse effects from livestock and their management on the gartersnake prey base." *Id.* at 96.

FWS determined that effects of the proposed action that "result in dead or impaired individuals are unlikely to be detected," due to the species' small size, effective camouflage, underground habitats, and potential to occur in water of varying clarity. *Id.* Additionally, FWS acknowledged that "[s]easonal fluctuations in environmental conditions and population factors

such as emigration, immigration, and fluctuating habitat conditions over time further mask detection." *Id.* FWS thus decided to "use measurable effects to its preybase" as a surrogate for evaluating take of the species, because "not only are these effects measurable in terms of their effect to primary prey species of the gartersnake, but also because of the tight correlation between occupancy of northern Mexican gartersnakes and an available, functioning, and reliable prey base." *Id.* Therefore, "take of northern Mexican gartersnakes will be considered exceeded if take is exceeded for the Chiricahua leopard frog or for Gila chub, Gila topminnow, desert pupfish, spikedace, loach minnow, or razorback sucker as referenced in the 2012 consultation on Gila District Grazing that co-occur with the gartersnake." *Id.*

However, as explained above with respect to the narrow-headed gartersnake, FWS's reliance on surrogate species in the 2024 Biological Opinion is legally deficient. In its 2012 Biological Opinion, FWS concluded that it did not anticipate incidental take for the Gila chub, spikedace, loach minnow, or razorback sucker. *See* 2012 BiOp at 106–07. Nevertheless, the ITS ties the allowable take for the northern Mexican garternake to those same species. 2024 BiOp at 96. This effectively sets the allowable take at zero, to the extent that the take of Gila chub, spikedace, loach minnow, or razorback sucker is used as a surrogate. Yet FWS offers no explanation or rationale for how this zero-take threshold aligns with its own finding that northern Mexican gartersnakes will be taken as a result of the proposed action or with its conclusion in the 2024 Biological Opinion regarding the adverse effects of the proposed action on the subject prey species. Nowhere in the 2024 Biological Opinion does FWS reconcile these contradictions or explain how its surrogate approach can meaningfully quantify or limit take of gartersnakes when the chosen surrogate species were—in 2012—not expected to experience take themselves. By tethering the ITS for the gartersnake to species for which no take is anticipated, FWS has failed to provide a "statement concerning incidental take that[] [s]pecifies the impact of incidental taking as the amount or extent of such taking." 50 C.F.R. § 402.14(i)(1)(i). FWS has also failed to establish a clear standard for determining when the anticipated level of take of the northern Mexican gartersnake has been exceeded.

Additionally, for the reasons explained above in Section III, *supra*, the Chiricahua leopard frog incidental take surrogates are unclear and unenforceable. Accordingly, reliance on Chiricahua leopard frog surrogates to measure incidental take of northern Mexican gartersnake fails to provide a clear, enforceable standard for determining when the level of authorized take has been exceeded. By tethering the ITS for the northern Mexican gartersnake to an unenforceable surrogate, FWS thus compounds its failure to ensure compliance with the ESA's requirements for its ITS and associated reinitiation triggers.

VI. Gila Chub and Gila Topminnow

Next, the 2024 BiOp's analysis of the grazing program's impacts on the endangered Gila chub and the endangered Gila topminnow is arbitrary.

The Gila chub has experienced significant range-wide declines, driven primarily by habitat degradation across the Southwest. These impacts stem from groundwater pumping and increased sedimentation, erosion, and arroyo cutting from livestock grazing, as well as other activities. Compounding these threats is the introduction and proliferation of competitive and

predatory nonnative species, which remain among the primary drivers of the chub's decline—both within the Gila River basin and throughout its native range. *See* 2024 BiOp at 100.

The Gila topminnow faces a similar suite of threats, including predation and competition from nonnative fishes, climate change, and habitat degradation linked to livestock grazing and other uses. According to the Draft Revised Recovery Plan (1998), these uses continue to present great threats through increased erosion, intensified flood events, and reduced groundwater retention—each posing a serious risk to topminnow habitat.[7]

Livestock grazing, in particular, has long been recognized as one of the most pervasive and enduring sources of adverse impacts to native fish and their habitats. Grazing practices can destabilize stream channels, impair riparian ecosystem functions, and lead to nutrient loading in aquatic systems. Grazing also strips riparian vegetation critical to fish habitat, resulting in elevated stream temperatures, increased sedimentation, soil erosion, and deteriorating water quality. Although the discontinuation of grazing in riparian areas is known to reduce the adverse effects of livestock grazing, destruction of riparian areas by livestock remains a persistent threat in some areas. 2024 BiOp at 112.

The 2024 Biological Opinion examines two proposed actions that pertain to Bonita Creek: (1) pumping from Bonita Creek to provide water for livestock in upland areas; and (2) trailing of livestock through Bonita Creek four times annually. The Biological Opinion assumes that all BLM-administered lands within Bonita Creek, which includes Bonita Creek, Johnny Creek, and Bullgap Community Allotments, are excluded from grazing. *Id.* at 132.

Water pumping from Bonita Creek—authorized under an existing water right that allows the withdrawal of up to 1,451,718 gallons per year—is conducted at multiple sites. *Id*. Pumping withdraws water directly from the creek via screened intakes positioned in the water column, posing risks of entrainment or impingement to fish eggs and larvae. *Id*. at 132–33. The Biological Opinion concedes that it is unknown if the velocity of water intake is sufficiently low to prevent fish from being impinged on the screen surface. *See id.* at 133.

Beyond direct intake-related risks, water withdrawals have materially degraded the hydrological and ecological integrity of Bonita Creek. Monitoring has documented significant declines in pool volume and connectivity. *Id*. According to FWS's 2024 Biological Opinion, a nearly half- mile stretch of creek has experienced measurable drying, loss of lateral and vertical pool habitat, sedimentation, and cattail encroachment. *Id*. Dewatering also impairs water quality, resulting in higher water temperatures and pH and decreased dissolved oxygen. It may also intensify and increase predation and competition. These changes impair breeding and rearing habitat, reduce water quality, and increase exposure to predation and disease. Reduced hydrologic connectivity further limits fish movement, foraging opportunities, and escape responses. *Id*.

[7] D. Weedman, Gila Topminnow, *Poeciliopsis occidentalis occidentalis*, Revised Recovery Plan (Dec. 1998) at 10, available at https://ecos.fws.gov/docs/recovery_plan/990305.pdf.

The proposed action would also permit the trailing of cattle through Bonita Creek four times annually. *Id*. These cattle drives coincide with sensitive seasonal conditions, including late winter rains and potential flooding, when riparian soils are saturated and most vulnerable to trampling. The 2024 Biological Opinion concedes that even brief livestock presence in riparian zones causes immediate damage to streambanks and instream habitat through chiseling, compaction, and collapse. *See id.* at 133–36. Trampling can result in the direct mortality of larval fish, which congregate in shallow margins and lack mobility to escape. Moreover, these activities contribute to sedimentation, nutrient loading, and vegetative loss—each of which diminishes the stream's capacity to support native fish populations. *Id*. at 134–45.

FWS acknowledges that concentrated movement of large numbers of cows through Bonita Creek will result in pronounced sedimentation of effected reaches, and that excessive sedimentation can cause the filling of backwaters that provide larval and juvenile fish habitat, reduce food production and availability by smothering invertebrates, and impair fish ability to see and capture food related to turbidity. *See id.*

The 2024 BiOp provides no species-specific protections for any native fish species, including the Gila chub and Gila topminnow. Only the general conservation measures, such as fence repair, "coordination" between BLM and FWS, and monitoring, are to be implemented. *Id.* at 97.

Despite the various threats the proposed action poses to native fish species, FWS concludes that the action is not likely to jeopardize the continued existence of the Gila chub and Gila topminnow. FWS based bases its conclusion on the following:

> Gila chub and Gila topminnow have remained demonstrably extant throughout most sampled reaches of Bonita Creek since they were initially stocked, post-renovation. Gila chub are considered to have the most robust population in Bonita Creek of native fish species present. The very low numbers of nonnative aquatic predators and focused management on sustained conservation of native fishes allow greater tolerance among years to sources of potential take from pumping or livestock trailing effects. Populations of these two species are also replicated within other basins throughout their ranges.

Id. at 138.

After concluding that the proposed action would not jeopardize the Gila chub or Gila topminnow, FWS issued an ITS for these species, anticipating incidental take in the form of harm or direct mortality from effects associated with water withdrawals from, and livestock trailing through, Bonita Creek. *See id.* at 138–140. FWS noted that drought conditions are also expected to exacerbate effects of the proposed action. *Id.* at 139.

Anticipating that incidental take of chub and topminnow will be difficult to directly detect, FWS adopted surrogate thresholds to measure take. Specifically, the ITS provides that take will be exceeded if one or both of the following conditions are met:

> [Criterion 1] More than 20 percent of the alterable stream banks by length along affected reaches of Bonita Creek have not fully recovered from trampling, chiseling, or other physical impact by livestock trailing before a subsequent trailing event.
>
> [Criterion 2] We define official drought status as when the SPI reaches an average value of minus 1.00 or less (condition D1 in SPI) for the preceding 12-month period. The SPI for the action area can be evaluated at: https://www.drought.gov/data-maps-tools/us-gridded-standardized-precipitation-index-spi-nclimgrid-daily. Implementation of current drought response measures, as described above in the "Description of the Proposed Action" section, by BLM or permittees/lessees (whether voluntary or not), must be initiated within 12 months of entering official continuous drought status as defined by the SPI, if monthly drought continues. Take will also be exceeded if conditions in any portion of the project area affecting Bonita Creek are found to be within the SPI category of D3 (extreme drought) or worse (D4; exceptional drought) for an average value of -1.9 to -1.6 for the first 12 months, and then as measured monthly (continuously) for an additional 12 months at the D3 or D4 levels, if an agreement between the BLM and the appropriate permittees is not entered into, or if action has not been taken per 43 CFR [§] 4110.3-3(b) to either reduce livestock numbers to appropriate AUM levels or close portions of affected allotments.

Id. at 139–40.

FWS's surrogates fail to set forth a clear, enforceable standard for determining when the level of authorized take of the Gila chub and Gila topminnow has been exceeded.

Criterion 1 provides no measurable definition of "full recovery," rendering the 20 percent threshold vague and unworkable for enforcement or monitoring purposes.

Criterion 2, which ties take exceedance to prolonged drought conditions as measured by the Standardized Precipitation Index, is also flawed. The standard requires prolonged drought conditions (24 consecutive months of D3- or D4-level drought) before recognizing take exceedance. This arbitrary, prolonged timeframe allows ongoing habitat degradation and take of the species for two years before triggering reinitiation of consultation. In other words, regardless of livestock-related habitat destruction or the number of fish killed, harmed, or harassed by the proposed action, there is no mechanism under this portion of the surrogate standard to exceed the ITS within the first two years of the project. By imposing only a temporal limitation, the surrogate permits potentially irreversible harm to the species and its critical habitat before reinitiation is required.

Criterion 2 is further arbitrary and unenforceable because its requirement of twelve consecutive months of D3- or D4-level drought, measured on a monthly basis using the Standard Precipitation Index, is functionally unattainable in the project area. As explained above, the Standard Precipitation Index is calculated as a deviation from average precipitation; however, average precipitation in the Gila District is zero or near zero during certain months, including

May (and often June). Because precipitation cannot fall below a zero baseline, Standard Precipitation Index values reset during those months. As a result, the ITS establishes a take-exceedance trigger that cannot be met.

Even if the 24-month drought threshold is met, take is not automatically recognized as exceeded if BLM and appropriate permittees agree to unspecified measures, undertake minimal reductions in livestock numbers, or close some unspecified portions of affected allotments. This loophole fails to account for whether those reductions are sufficient to mitigate the actual harm already inflicted on the species and its habitat. Without clear, science-based criteria for determining when livestock reductions are adequate to prevent take, this standard provides an ill-defined and insufficient safeguard. It effectively allows continued harm under the guise of compliance, potentially enabling significant, ongoing habitat degradation and jeopardizing the long-term survival of the species.

VII. Southwestern Willow Flycatcher

Additionally, the 2024 BiOp's analysis of the grazing program's impacts on the endangered southwestern willow flycatcher and its critical habitat is arbitrary.

In analyzing the effects of the action on the southwestern willow flycatcher, FWS acknowledges that livestock grazing can cause adverse effects to flycatcher and its critical habitat, primarily through the degradation and modification of riparian habitat essential to the species' foraging, nesting, and reproductive success. Specifically, FWS acknowledges in its 2024 Biological Opinion that habitat degradation due to grazing can have adverse effects to the birds by "limiting their ability to forage and nest, limiting cover and refuge, impacting the quality and availability of water, which can cause stress ultimately impacting their health, reducing their lifespan, and reducing their reproductive success and fecundity." 2024 BiOp at 157.

FWS further recognizes that livestock grazing reduces the diversity, density, and structural complexity of riparian vegetation—including cottonwoods and willows—which are key components of suitable flycatcher habitat and needed to support successful nesting, as well as reduce insect prey populations. *Id.* at 158. For example, livestock can reduce the suitability of riparian areas by reducing canopy covers, including lower levels preferred by flycatchers. These effects are particularly pronounced where grazing occurs year-round or during spring and summer, when riparian vegetation is most vulnerable and when flycatchers are actively nesting. FWS further concedes that reducing permitted livestock numbers alone does little to alleviate these effects, given livestock's tendency to concentrate in riparian areas, causing degradation regardless of overall stocking rates. *See id.* at 157–58.

FWS also acknowledges that livestock activity, including herbivory and soil and plant trampling, can alter vegetation composition, increase erosion and sedimentation into streams, and exacerbate the impact of flood events. *Id.* at 158. Livestock promote the establishment of non-native plant species, which are more flammable and can alter fire regimes. Impacts originating in upland watersheds can further compromise the structure and function of riparian and stream habitats downstream.

Beyond habitat degradation, FWS acknowledges that livestock presence and associated range improvements—including water developments and corrals—contribute to increased brood parasitism by brown-headed cowbirds, a known threat to flycatcher reproductive success. *Id.* at 159. Cowbirds are drawn to grazed and disturbed areas, where they exploit the proximity of degraded habitat to parasitize flycatcher nests. Range improvements can also lead to increased modification and fragmentation of habitat. *Id*. at 158.

FWS further concedes that livestock grazing may result in direct take of flycatcher eggs and nestlings through nest destruction during foraging activity. *Id.* at 158. Additionally, behavioral modifications and nest abandonment may result from livestock or human disturbance in breeding territories.

In its analysis of critical habitat impacts, FWS anticipates that grazing may impair multiple Primary Constituent Elements of designated flycatcher critical habitat, including:

> [PCE 1.a] Dense riparian vegetation with thickets of trees and shrubs that can range in height from about 2 to 30 m (about 6 to 98 ft). Lower-stature thickets (2 to 4 m or 6 to 13 ft tall) are found at higher elevation riparian forests and tall-stature thickets are found at middle and lower-elevation riparian forests;
>
> [PCE 1.b] Areas of dense riparian foliage at least from the ground level up to approximately 4 m (13 ft) above ground or dense foliage only at the shrub or tree level as a low, dense canopy;
>
> [PCE 1.c] Sites for nesting that contain a dense (about 50 percent to 100 percent) tree or shrub (or both) canopy (the amount of cover provided by tree and shrub branches measured from the ground);
>
> [PCE 1.d] Dense patches of riparian forests that are interspersed with small openings of open water or marsh or areas with shorter and sparser vegetation that creates a variety of habitat that is not uniformly dense. Patch size may be as small as 0.1 ha (0.25 ac) or as large as 70 ha (175 ac).

Id. at 160.

Grazing depletes vegetative cover needed for nesting and foraging and can alter vegetative composition through selective browsing and suppression of woody plant regeneration. These habitat changes increase nest visibility to predators and reduce the foraging options. FWS acknowledges that grazing pressure, especially during dry conditions, increases the severity of damage to riparian structure and function. *Id.*

Notwithstanding its recognition of these adverse effects, FWS concludes that BLM's grazing program is not likely to jeopardize the continued existence of the flycatcher, and is not likely to destroy or adversely modify any designated critical habitat. *Id.* at 162. FWS bases these conclusions on the following: (1) livestock have been excluded from flycatcher habitat on most BLM lands, and some non-Federal lands, in the allotments during breeding season, and that

livestock in exclosures are purportedly removed as soon as possible; (2) BLM will implement measures to reduce livestock concentration near flycatcher habitat, monitor cowbird parasitism, and possibly implement livestock management actions to reduce cowbird parasitism; (3) BLM will continue to manage its lands to "meet the standards and guidelines," which will minimize both direct and indirect watershed effects to flycatcher habitat, including critical habitat, and possibly minimize effects to habitat over time; (4) the recovery potential of critical habitat will not be compromised because BLM will implement actions that minimize or eliminate adverse effects to the PCEs; (5) the stocking rates on most allotments are generally considered low stocking rates which likely alleviates cowbird parasitism concerns; (6) the number of flycatcher territories on four allotments has increased, thus demonstrating existing grazing management may be commensurate with flycatcher recovery; and (7) livestock may affect the species composition and shrub density in affected areas, but it is unlikely that this will significantly reduce the current or future suitability for breeding flycatchers in the Gila District because BLM is implementing protective measures such as exclusion or restriction of livestock in riparian areas during the growing seasons, and most of the allotments that have been assessed are meeting Standard 2 of the Arizona Standards for Rangeland Health, which will facilitate the maintenance and development of breeding habitat. *Id.* at 162–63.

After concluding that the proposed action would not jeopardize the southwestern willow flycatcher or destroy or adversely modify its critical habitat, FWS issued an ITS for the species, finding:

> [I]ncidental take from livestock management [is anticipated] to occur likely in areas where livestock are not wholly excluded [*i.e.*, Day Mine, Sand Wash, and Tom Springs]. . . . In these areas, take may occur from disturbance to nesting flycatchers, affects to nesting habitat from grazing, and from cowbird nest parasitism. Take may be in the form of harm, harassment, injury, or death resulting from the loss or disturbance of a nest, fledgling mortality, or abandonment of nests or territories. Where access is provided, livestock are known to pull down or brush against nests while foraging in or walking through riparian areas; therefore, incidental take of willow flycatcher nests and young is a likely effect of grazing on nonfederal lands in flycatcher breeding areas. Cowbird parasitism to flycatcher nests/chicks on BLM and non-Federal lands in riparian areas during the nesting season is also likely to occur.

Id. at 164.

FWS's conclusion that incidental take of flycatchers is only reasonably certain to occur on three allotments—Day Mine, Sand Wash, and Tom Springs—is based on the assumption that grazing is excluded from flycatcher breeding habitat on all other allotments. However, FWS fails to provide a rational explanation for this conclusion. Pervasive unauthorized grazing in flycatcher critical habitat is known to occur outside of these three allotments. For example, BLM's 2023 Biological Evaluation for the Gila District Livestock Grazing Program states that "incidental unauthorized livestock use along sections of riparian habitat in Bonita Creek and the

Gila River has been documented."[8] Additionally, FWS states that "[l]ivestock in the exclosures are removed as soon as possible," acknowledging both that livestock do access areas intended to be off-limits and the human removal of livestock. 2024 BiOp at 162. The Center also repeatedly submitted information to FWS and BLM demonstrating that unauthorized grazing is occurring on flycatcher breeding habitat outside these three allotments.[9] Moreover, FWS admits that incidental take is anticipated in areas where livestock are not wholly excluded from flycatcher breeding habitat and that human disturbances may induce behavioral modifications or nest abandonment, further impacting flycatcher reproductive stress. FWS's failure to reconcile these facts with its conclusion renders it arbitrary and capricious.

FWS's ITS provides a surrogate for evaluating take of the flycatcher. Specifically, the ITS states that take will be exceeded "if monitoring documents a reduction of >50% of the number of territories in any of the identified allotments," *i.e.*, Day Mine, Sand Wash, and Tom Springs allotments, "compared to the previous monitoring results." *Id.* at 165. The ITS further requires that the reduction in territories be "attributable to grazing," rather than to drought, flooding, fire, or other factors. *Id.*

The ITS fails to provide a methodology for determining whether the reduction in territories is "attributable to grazing." In areas subject to multiple overlapping stressors, the absence of clear, objective protocols for attributing reduction in territories specifically to grazing leaves the standard vague. Without such guidance, the ITS does not provide a meaningful trigger for reinitiation of consultation, violating the ESA. Additionally, FWS's Terms and Conditions require the establishment of a baseline condition within 24 months, delaying the point at which any reduction in territories can even be measured against a reference condition. By allowing grazing to proceed for two years without a functioning baseline, the ITS cannot detect whether take is occurring during that period and thus fails to provide an enforceable mechanism for determining when the level of anticipated take has been exceeded.

VIII. Western Yellow-Billed Cuckoo

The 2024 BiOp's analysis of the grazing project's impacts on the threatened western yellow-billed cuckoo and its critical habitat is likewise arbitrary.

The 2024 Biological Opinion states that the primary threat to the cuckoo is loss and degradation of its habitat from altered watercourse hydrology and natural stream processes, livestock overgrazing, resulting conversion of native habitat to predominantly nonnative

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[8] BLM, *Biological Evaluation for Reinitiation of Section 7 Consultation for the Livestock Grazing Program on BLM-Administered Lands* 8 (Oct. 2023).

[9] *See* Sixty-Day Notice of Intent to Sue the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service for Endangered Species Act Violations (July 22, 2021) (available at https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/blm-bonita-creek-gila-box-NOI-20210722.pdf; Exhibit B: Sixty-Day Notice of Intent to Sue the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service for Endangered Species Act Violations (Apr. 10, 2023); Exhibit C: Addendum to April 2023 Sixty-Day Notice (May 1, 2023).

vegetation, among other issues. *Id.* at 171. Additional threats include climate change and drought. *Id.*

These ongoing threats, which have resulted in small, isolated populations, cause the rare remaining cuckoo populations to be increasingly susceptible to further declines and local extirpations through various factors including climate change events. *Id*. The warmer temperatures already occurring in the Southwest may alter the plant species composition of riparian forests over time. An altered climate may also disrupt and change food availability for the cuckoo if the timing of peak insect emergence changes in relation to when the cuckoos arrive on their breeding grounds to feed on this critical food source.

In analyzing the effects of the action, FWS acknowledges several significant impacts of livestock grazing on the cuckoo and its critical habitat. For example, FWS recognizes that grazing "within riparian woodlands, mesquite bosque, and xeroriparian vegetation communities that provide breeding and foraging habitat for cuckoos . . . could result in direct disturbance to cuckoos nests, eggs, or nestlings from livestock movements." *Id.* at 178. FWS further recognizes that grazing "can reduce habitat quality by reducing vigor of existing vegetation and preventing growth, reproduction, and recruitment of cottonwoods and willows, and other woody and herbaceous vegetation," and reducing insect prey availability. *Id.* Accordingly, FWS expects that "grazing may adversely affect cuckoo habitat through trampling of vegetation and seedbeds, grazing of cottonwood, willow, and other woody plant seedlings, soil compaction, and creation of trails in habitats used for breeding." *Id.* These impacts are compounded by the tendency of livestock to remain in riparian zones "because of the availability of shade, water, and forage." *Id.*

Additionally, FWS acknowledges that "[f]ragmentation of riparian habitat can also reduce suitability of nesting habitat, increase nest predator access to cuckoo nests, and reduce nest success." *Id.* FWS further notes that "grazing may also adversely affect yellow-billed cuckoos by diminishing recruitment and growth of riparian and xeroriparian vegetation that serves as cuckoo nesting substrates, woody and herbaceous plants in the riparian and xeroriparian understory, and adjacent upland areas in which the birds forage." *Id.* at 178–79. The agency also highlights that "[c]limatic variability may exacerbate the impacts of livestock grazing in sensitive habitats," that grazing "can result in adverse effects to cuckoos by impacting channel morphology, as well as temporary changes in water quality," and that "[b]ank alteration from hoof shear during livestock movements can increase incision, reduce bank stability, and remove aquatic vegetation and woody species in affected areas." *Id.* at 179.

Despite FWS's findings that the proposed action would likely result in adverse effects to cuckoos, cuckoo habitat (including designated critical habitat), and cuckoo recovery, FWS concludes in its Biological Opinion that these impacts "will not appreciably reduce survival and recovery of the cuckoo because the effects will not reduce reproduction, numbers, or distribution of the species." *Id.* at 181. FWS further states that it does "not expect habitat availability to be a limiting factor in the action area due to the cuckoos' wider tolerance to various types of habitat and habitat conditions." *Id.* Citing its view that "cuckoos are widespread," that nesting cuckoo populations and designated critical habitat occur across portions of nine states, and that "monitoring data from elsewhere in southern Arizona that is also exposed to long term public lands grazing where cuckoos continue breeding, sheltering, or foraging behaviors" indicate

habitat retains essential features, FWS concluded that the proposed action "is not likely to jeopardize the continued existence of the cuckoo, and is not likely to destroy or adversely modify designated critical habitat." *Id.*

With regard to the action's effects to recovery, FWS acknowledged that "[t]he point at which yellow-billed cuckoo will recover (i.e. delisted from its threatened status) is difficult to definitively determine in the absence of a recovery plan." *Id.* at 180. In the absence of a recovery plan for the cuckoo, FWS assumed that "[t]he proposed action will not push the cuckoo past a tipping point" due to the fact that cuckoo is purportedly widespread at the range-wide scale, because most of the riparian habitat in the action area is purportedly excluded from grazing, and because cowbirds are not generally associated with adverse effects to cuckoos via parasitism of their nests. *Id.*

In concluding that the proposed action is not likely to jeopardize the continued existence of cuckoo or result in the destruction or adverse modification of cuckoo critical habitat, FWS relies on the assumption that most of the riparian habitat in the action area is excluded from grazing. *Id*. at 181. However, this assumption runs counter to the evidence before the agency, including evidence in BLM's 2023 Biological Evaluation for the Gila District's Livestock Grazing Program, which documents the steady and sustained presence of unauthorized livestock in cuckoo critical habitat in the Gila Box RNCA for over a decade. BLM, *Biological Evaluation* (Oct. 2023) at 205. FWS's assumption is further belied by evidence before the agency from the Center's surveys of cattle impacts in cuckoo critical habitat on grazing allotments within the Gila District, including the A-Diamond, Cochran, Horsetrack, LEN, Myers, Teacup Ranch, Whitlow, Bonita Creek, Johnny Creek, Zorilla, Gila, Morenci, Bull Gap Community, Twin C, Mescal Mountain, Christmas, and Hidalgo allotments. *See infra*. These surveys documented widespread cattle damage and numerous instances of damaged, nonfunctional or missing exclusion fencing throughout the survey area immediately prior to, or during, cuckoo nesting and breeding seasons. The 2024 BiOp's erroneous assumption that livestock grazing is excluded from cuckoo habitat violates the ESA and the APA. *See Ctr. for Biological Diversity v. U*.S. *BLM*, No. CV-24-00141, 2026 U.S. Dist. LEXIS 68876, at *21 (D. Ariz. Mar. 30, 2026) ("[I]n omitting any discussion regarding the fact that preexisting fences on the Horseshoe Allotment had not been fully effective in keeping cattle out of restricted areas, the agencies entirely failed to consider an important aspect of the problem at hand.").

After concluding that the proposed action is not likely to jeopardize the continued existence of the cuckoo or destroy or adversely modify designated critical habitat, FWS issued an ITS for the species. *See* 2024 BiOp at 181–82. However, in doing so, FWS assumed that because some cuckoos continue to use the habitat across other southern Arizona survey sites that are subject to grazing, there would be no incidental take from grazing activities:

> We do not anticipate the incidental take of yellow-billed cuckoos from livestock grazing on the [Gila District] based on the analysis of consistent yellow-billed cuckoo occupancy across other southern Arizona survey sites in areas subject to various current grazing practices, including non-use by livestock over varying spatial and temporal scales . . . .

Id. at 182.

Nowhere in the 2024 Biological Opinion does FWS attempt to reconcile its finding that the cuckoo would not be taken in any way by BLM's grazing programs with FWS's identification elsewhere in the Biological Opinion of the myriad, concrete ways that cattle are anticipated to adversely affect the cuckoo, including harm to cuckoo eggs and nestlings, and the species' habitat. In other words, the Biological Opinion fails to explain why the anticipated adverse effects on cuckoo and cuckoo critical habitat do not rise to the level of take. Instead, FWS simply points to the presence of cuckoos across other sites subject to grazing. However, the fact that cuckoos persist outside of the action area has no bearing on whether any form of take, including non-lethal harassment, is reasonably certain to occur as a result of the proposed action within the action area.

NEW INFORMATION REQUIRING REINITIATION OF CONSULTATION

I. Surveys in the Conservation Area

As detailed in the attached email dated March 27, 2026, and letter dated February 23, 2026, which we incorporate by reference, Center surveyors again documented[10] widespread trespass livestock impacts throughout cattle-excluded areas of the Conservation Area during surveys conducted March 31–April 2, 2025, August 27–30, 2025, and March 18–21, 2026.[11] Surveyors documented recent, as of the survey dates, and significant impacts throughout the entire cattle-excluded Conservation Area including in sections that are not within grazing allotments. During the 2026 and 2025 surveys, respectively, surveyors tallied more than 20 and 32 cows and documented identifiable cattle brands (https://agriculture.az.gov/animals/livestock-brands) that can be readily traced back to grazing permittees. Those permittees are required to work with BLM to remove trespass livestock and maintain fence lines that protect riparian resources. The evidence gathered in the Center's 2026 and 2025 surveys provides further documentation that cattle are still found throughout the Conservation Area along the Gila River and in major tributaries of the Gila River such as Eagle and Bonita Creeks.

[10] The surveys referenced throughout this Notice were conducted by professional field biologists using standardized biological survey methods. Exhibit L explains these survey methods and their scientific basis.

[11] *See* Exhibit M, Email from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM Arizona State Director, Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Mar. 27, 2026); Exhibit A, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM State Director, Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Feb. 23, 2026); *see also* Exhibit D, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Mar. 20, 2024) (detailing the results of biological surveys conducted in the Conservation Area on March 3–5, 2024, which demonstrated cattle presence in locations and at times when the relevant biological opinions direct that cattle be excluded, and degradation of critical habitat).

Across nearly every exposed terrace, floodplain, and river access point, surveyors in 2026 and 2025 documented extensive cattle damage to designated riparian critical habitat, including designated critical habitat for the yellow-billed cuckoo, razorback sucker, and spikedace. Evidence of trespass livestock and associated damage was documented across multiple allotments and reaches of the Conservation Area, including the Zorilla, Gila, Morenci, Bull Gap Community, Twin C, Bonita Creek, and Johnny C allotments in 2025, and the Morenci, Bull Gap Community, and Bonita Creek in 2026.

Overall impacts documented by the surveyors include: browsed and stunted willow and cottonwood regeneration, including nursery bars and young tree cohorts; riverbank trampling, chiseling, and erosion associated with repeated livestock access to the river; floodplains and riparian understories trampled and largely devoid of herbaceous groundcover; fresh cattle tracks and trails covering entire floodplains within designated critical habitat.[12]

Surveyors also repeatedly documented cattle presence, fresh cattle tracks, feces of varying ages, and heavily disturbed soils, indicating a sustained and recurring presence of cattle in areas where grazing is prohibited.[13] During the 2025 surveys, nonfunctional fencing and, in at least one instance, a mineral lick were also documented, further supporting continued livestock access to protected riparian areas. In 2026 and in 2025, surveyors also documented cattle actively consuming willow regeneration within designated riparian critical habitat and herds occupying off-limits floodplains and river corridors.[14]

The scale of damage documented in the 2026 and 2025 surveys reflects a persistent and widespread pattern of unauthorized grazing. Across survey years (including 2021, 2024, and 2025), the majority of surveyed miles of cattle-excluded riparian habitat within the Conservation Area have been moderately to significantly damaged by cattle, with the majority of the

[12] *See* Exhibit A, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM State Director, Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Feb. 23, 2026), at 2–24; *see also* Exhibit M, Email from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM Arizona State Director, Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Mar. 27, 2026) (detailing the results of biological surveys conducted in the Conservation Area on March 18–21, 2026, which demonstrated cattle presence in locations and at times when the relevant biological opinions direct that cattle be excluded).

[13] *See* Exhibit A, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM State Director, Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Feb. 23, 2026), at 2–24; *see also* Exhibit M, Email from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM Arizona State Director, Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Mar. 27, 2026).

[14] Exhibit A at 12; *see also* Exhibit M.

allotments having suffered 100% moderate to significant cattle damage in areas that are supposed to be off-limits to cattle.[15]

II. Surveys in other Gila District allotments

The Center has also surveyed the Gila District's "Middle Gila" allotments for grazing impacts—both before and after the 2024 BiOp was issued. The Middle Gila allotments include the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments, which contain occupied or critical habitat for southwestern willow flycatcher and western yellow-billed cuckoo. In addition, Center surveys have also found unauthorized grazing impacts in the Mescal Mountain, Christmas, and Hidalgo allotments, which contain occupied or critical habitat for western yellow-billed cuckoo.

Unlike the Gila Box RNCA, grazing is permitted in riparian areas within these allotments. However, pursuant to the 2012 and 2024 BiOps, riparian areas are closed to grazing during the breeding season for threatened and endangered species in order to protect critical riparian habitat when these species need it most, with the exception of the northern portion of the Christmas Allotment.

On April 10, 2023, the Center and the Alliance (then known as Maricopa Audubon Society) sent a sixty-day Notice to BLM and FWS detailing the results of biological surveys conducted in April and December 2022, in critical habitat in the Middle Gila allotments.[16] These surveys demonstrated extensive out-of-season cattle presence and degradation of critical habitat.

On May 1, 2023, the Center sent the agencies an addendum to the April 2023 Notice, detailing cattle impact surveys conducted April 11–12, 2023, in critical habitat in the Middle Gila allotments.[17] Once again, these surveys demonstrated extensive cattle presence and degradation of critical habitat in areas where, and at times when, the 2012 and 2024 BiOps direct that livestock will be excluded.

On April 23, 2024, the Center sent BLM and FWS a letter detailing the results of biological surveys conducted April 14, 2024, in critical habitat in the A-Diamond, Teacup Ranch, LEN, and Cochran allotments.[18] Pursuant to the 2024 BiOp, riparian critical habitat in these allotments is closed during breeding season (which includes April). These surveys

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[15] *See* Exhibit A at 24. The Center will provide the agencies with data from its 2026 surveys in the coming weeks, but its initial review of data shows little change from the situation in 2024 and 2025.

[16] Exhibit B: Sixty-Day Notice of Intent to Sue the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service for Endangered Species Act Violations (Apr. 10, 2023).

[17] Exhibit C, Addendum to April 2023 Sixty-Day Notice (May 1, 2023).

[18] *See* Exhibit E, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 23, 2024).

demonstrated cattle presence in locations and at times when the relevant biological opinions direct that cattle be excluded, and degradation of critical habitat.

On April 10, 2025, the Center sent BLM and FWS a letter detailing the results of biological surveys conducted April 4, 2025 in critical habitat in the Middle Gila allotments.[19] Pursuant to the 2024 BiOp, riparian critical habitat in these allotments is closed during breeding season (which includes April). These surveys demonstrated cattle presence in locations and at times when the relevant biological opinions direct that cattle be excluded, and degradation of critical habitat.

On April 15, 2025,[20] the Center sent the agencies an addendum to the April 10, 2025 letter, detailing biological surveys conducted in the Mescal Mountain, Christmas, and Hidalgo allotments on April 7–8, 2025. Pursuant to the 2024 BiOp, riparian critical habitat in these allotments is closed during breeding season (which includes April). These surveys demonstrated extensive out-of-season cattle presence and degradation of critical habitat.

On April 7, 2026, the Center sent BLM and FWS a letter detailing the results of biological surveys conducted from April 2 – 4, 2026, in riparian areas of the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, Whitlow, Christmas, and Mescal Mountain allotments.[21] These surveys demonstrated cattle presence in locations and at times when the relevant biological opinions require exclusion, with surveyors observing an estimated total of nearly 100 head of cattle. They also documented widespread damage in designated critical and/or known occupied habitat for southwestern willow flycatchers and western yellow-billed cuckoo. The damage included degraded and sloughing streambanks, trampled and grazed riparian understory vegetation, denuded riparian terraces, and consumption of cottonwood and willow regeneration. Unfortunately, virtually every riparian access point for livestock showed significant, ongoing damage.

As these surveys have repeatedly shown, the 2024 BiOp's key assumption that riparian critical habitat in the Gila District will be seasonally closed to livestock grazing is false. This new information requires reinitiation of consultation to address these widespread impacts to threatened and endangered species and their critical habitat.[22]

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[19] Exhibit F, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 10, 2025).

[20] Exhibit G, Addendum to Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 15, 2025).

[21] Exhibit N, Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Raymond Suazo, BLM Arizona State Director, Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 7, 2026).

[22] It appears that that the 2024 BiOp superseded FWS's August 20, 2018 BiOp with respect to the impacts of livestock grazing on the A Diamond, Battle Axe, LEN, Rafter 6, Teacup, and Whitlow allotments. To the extent that the 2024 BiOp did not supersede the 2018 BiOp, BLM

III. Region-Wide Reports

In addition, three reports the Center issued in 2024 and 2025 also constitute new information revealing effects of the grazing program on listed species and critical habitat in a manner and to an extent not previously considered in the 2012 or 2024 BiOps. These reports require reinitiation of consultation.

In June 2024, the Center finalized a comprehensive, three-year field survey effort and compiled a report to document the condition of cuckoo critical habitat in Arizona and New Mexico, including in various grazing allotments in the Conservation Area.[23] The report concludes, on the basis of the best available science (compiled through standardized survey methods applied immediately prior to or during the cuckoo nesting and breeding season), that livestock grazing has adversely modified at least 57% of the cuckoo's critical habitat on public lands grazing allotments in Arizona and New Mexico. The surveys demonstrated moderate to significant impacts and adverse modification of habitat on 31,509 acres (*i.e.*, 80% of 39,170 acres of critical habitat surveyed by field biologists). In light of the worsening, combined threats of climate change and livestock grazing on public lands in the Southwest, the report concludes that agencies (such as BLM) should exclude livestock from cuckoo breeding and nesting habitat, and emphasizes that eliminating livestock access to ephemeral, intermittent, and perennial drainages is essential to allow tree and shrub seedlings to grow and survive to support cuckoo breeding and nesting.[24] The 2024 BiOp's jeopardy and adverse modification determination for the cuckoo and its critical habitat are based on assumptions regarding the species' region-wide status.[25] The Center's report demonstrates those assumptions are false.

In September 2024, the Center issued a report recounting a three-year survey effort which demonstrated that livestock grazing has adversely modified at least 58% of the threatened northern Mexican gartersnake's designated critical habitat on public lands in Arizona and New

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and FWS must also reinitiate consultation on the 2018 BiOp for the same reasons described in this Notice for the 2012 and 2024 BiOps.

[23] *See* Exhibit H, Center for Biological Diversity, *Grazed to Death: Livestock Production Adversely Modifying Majority of Drought-Stricken Western Yellow-billed Cuckoo Critical Habitat on Public Lands in Arizona and New Mexico* (June 2024), available at https://biologicaldiversity.org/species/birds/yellow-billed_cuckoo/pdfs/Cuckoo-Adverse-Modification-Report_CBD_2024.pdf.

[24] The report explained that FWS itself has raised questions about the long-term survival and recovery prospects of the cuckoo, especially given the rapidly worsening threat of climate change.

[25] *See, e.g.*, 2024 BiOp at 181 ("We also have monitoring data from elsewhere in southern Arizona that is also exposed to long term public lands grazing where cuckoos continue breeding, sheltering, or foraging behaviors, suggesting that the habitat retains the specific physical or biological features that define critical habitat for the species. Collectively, this information leads us to conclude that the proposed action is not likely to destroy or adversely modify designated critical habitat for the cuckoo.").

Mexico.[26] These biological surveys found moderate to significant impacts and adverse modification across 6,835 acres of critical habitat on public lands (*i.e.*, 84% of the 8,127 acres of critical habitat surveyed) and on 58% of all garter snake critical habitat on public lands managed by federal agencies.[27] The report concluded, based on the best available scientific information, that grazing-induced degradation of gartersnake critical habitat can only be prevented by complete exclusion of livestock from gartersnake critical habitat.[28] The 2024 BiOp's jeopardy and adverse modification determination for the northern Mexican gartersnake and its critical habitat are based on assumptions regarding the species' region-wide status.[29] The Center's report demonstrates those assumptions are false.

In March 2025, the Center issued a comprehensive report summarizing the results of eight years of biological surveys of designated critical habitat on public lands in the Southwest—including in the Gila District and the Conservation Area.[30] These surveys studied impacts to critical habitat for, among other species, spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, and western yellow-billed cuckoo. Of all riparian critical habitat surveyed, 85% (2070.9 miles—roughly the distance between Detroit and San Francisco) were damaged by livestock grazing.[31] This report again concluded that complete exclusion of livestock from designated critical habitat is the only way to prevent grazing degrading critical habitat.[32]

Finally, BLM's own 2024 data documenting unauthorized livestock presence in the Conservation Area constitutes new information, demonstrating that trespass cattle are ubiquitous there. The 2024 BiOp requires that BLM submit an annual report to FWS concerning the implementation of conservation measures. BLM submitted its first report, documenting actions

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[26] Exhibit I, Center for Biological Diversity, *Livestock Production Adversely Modifying Most Critical Habitat for Northern Mexican Garter Snakes on Public Lands in Arizona* (Sept. 2024), available at https://biologicaldiversity.org/species/reptiles/Mexican_garter_snake/pdfs/Northern-MX-garter-snake_AdMod-report.pdf.

[27] *Id.* at 1.

[28] *Id.* at 10–11.

[29] *See, e.g.*, 2024 BiOp at 95 ("We base this [northern Mexican gartersnake jeopardy and critical habitat adverse modification] conclusion on the following: . . . Northern Mexican gartersnakes have existed on the landscape in conjunction with livestock grazing programs on public lands. Livestock grazing is also not considered to be a leading contributor to the declines of the northern Mexican gartersnake.").

[30] Exhibit J, Center for Biological Diversity, *Livestock Damage to Aquatic and Riparian Critical Habitat in the U.S. Southwest: Filed Assessment Results 2017 – 2024* (Mar. 2025), available at www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/Grazing-Report-2017-2024_CBD_March-2025.pdf.

[31] *Id.* at 1.

[32] *Id.* at 42–43.

in 2024, in June 2025.[33] That report states: that water gap fences meant to prevent unauthorized cattle damage "have been a challenge" because of BLM's inability to obtain a response from a neighboring land manager; that "[l]ack of staff continues to be a challenge for BLM" in addressing unauthorized livestock use; and that there were "162 distinct reports of individual livestock within the [Conservation Area] boundary" in 2024.[34] The report also includes a spreadsheet summarizing reports of unauthorized livestock within the Conservation Area "along with action taken to resolve each occurrence."[35] The spreadsheet demonstrates that the time unauthorized cattle are reported to the time they were removed was often many days or weeks, that some trespass cattle were apparently never located, and that the trespass cattle are almost uniformly owned by a BLM "permittee."[36] The latter fact shows that the unauthorized livestock use is attributable to BLM's action permitting the livestock adjacent to closed lands of the Conservation Area.

In sum, the following evidence constitutes new information demonstrating the range-wide scale of ongoing, significant, and destructive grazing within designated critical habitat that was not considered in the 2012 and 2024 BiOps:

- the Center's and the Alliance's (then known as Maricopa Audubon Society) April 10, 2023, Notice to BLM and FWS (Exhibit B) and the biological surveys detailed therein;
- the Center's May 1, 2023, Addendum (Exhibit C) to the April 10, 2023, letter and the biological surveys detailed in the Addendum;
- the Center's March 20, 2024, Letter to BLM and FWS (Exhibit D) and the biological surveys detailed therein;
- the Center's April 23, 2024, Letter to BLM and FWS (Exhibit E) and the biological surveys detailed therein;
- the Center's April 10, 2025, Letter to BLM and FWS (Exhibit F) and the biological surveys detailed therein;
- the Center's April 15, 2025, Addendum (Exhibit G) to the April 10, 2025, letter and the biological surveys detailed in the Addendum;
- the Center's February 23, 2026 Letter to BLM and FWS (Exhibit A) and the biological surveys detailed therein;
- the Center's June 2024 cuckoo report (Exhibit H) and the biological surveys detailed therein;
- the Center's September 2024 northern Mexican gartersnake report (Exhibit I) and the biological surveys detailed therein;
- the Center's March 2025 regional report (Exhibit J) and the biological surveys detailed therein;

[33] Exhibit K, S. Leachet, BLM, *Safford Field Office Annual Report to U.S. Fish and Wildlife Service* (June 13, 2025).

[34] *Id*. at 2–3.

[35] *Id*. at 3.

[36] *See* spreadsheet included in *Safford Field Office Annual Report to U.S. Fish and Wildlife Service* (June 13, 2025) (Exhibit K).

- BLM's June 2025 annual report (Exhibit K);
- the Center's March 27, 2026, Email to BLM and FWS (Exhibit M) and the biological surveys detailed therein; and
- the Center's April 7, 2026, Letter to BLM and FWS (Exhibit N) and the biological surveys detailed therein.

This new information reveals that livestock closures are ineffective and/or unenforced across the Gila District allotments the Center surveyed.[37] Thus, this new information refutes the 2012 and 2024 BiOps' assumptions that livestock closures on these allotments will exclude livestock, and that such exclusion will avoid or eliminate take, or adverse modification of designated critical habitat, and thus requires reinitiation of consultation. *Cf. Ctr. for Biological Diversity v. U*.S. *BLM*, No. CV-24-00141, 2026 U.S. Dist. LEXIS 68876, at *21 (D. Ariz. Mar. 30, 2026) ("[I]n omitting any discussion regarding the fact that preexisting fences on the Horseshoe Allotment had not been fully effective in keeping cattle out of restricted areas, the agencies entirely failed to consider an important aspect of the problem at hand."). Therefore, BLM and FWS must reinitiate and complete consultation on the effects of livestock grazing as previously addressed in the 2012 and 2024 BiOp for the following ESA-listed species and designated critical habitat:

- the endangered southwestern willow flycatcher and its critical habitat;
- the threatened western yellow-billed cuckoo and its critical habitat;
- the endangered Gila topminnow;
- the endangered Gila chub;
- the endangered spikedace and its critical habitat;
- the endangered loach minnow and its critical habitat;
- the endangered razorback sucker and its critical habitat;
- the threatened narrow-headed gartersnake; and
- the threatened northern Mexican gartersnake and its critical habitat.

CONCLUSION

As detailed above, by failing in the 2024 Biological Opinion to consider the effects of unauthorized grazing on threatened and endangered species, FWS acted in an arbitrary and capricious manner, and otherwise in violation of Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), and its implementing regulations, in violation of the APA, 5 U.S.C. § 706(2). *See Ctr. for Biological Diversity v. U*.S. *BLM*, No. CV-24-00141, 2026 U.S. Dist. LEXIS 68876, at *22–24 (D. Ariz. Mar. 30, 2026).

By issuing jeopardy and adverse modification/destruction of critical habitat conclusions in the 2024 Biological Opinion that are contradicted by the best available science and the evidence before the agency—including the biological surveys the Center submitted to FWS—

[37] Surveyed allotments include the A-Diamond, Cochran, Horsetrack, LEN, Myers, Teacup Ranch, Whitlow, Bonita Creek, Johnny Creek, Zorilla, Gila, Morenci, Bull Gap Community, Twin C, Mescal Mountain, Christmas, and Hidalgo allotments.

FWS acted in an arbitrary and capricious manner, and otherwise in violation of Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), and its implementing regulations, in violation of the APA, 5 U.S.C. § 706(2).

By issuing ITSs in the 2024 BiOp for the Chiricahua leopard frog, narrow-headed gartersnake, northern Mexican gartersnake, Gila chub, Gila topminnow, southwestern willow flycatcher, and yellow-billed cuckoo that do not provide clear and enforceable triggers for reinitiation of consultation, FWS violated Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), its implementing regulations, and acted in an arbitrary and capricious manner, or otherwise not in accordance with law, in violation of the APA, 5 U.S.C. § 706(2).

BLM's reliance on the unlawful 2024 BiOp to authorize ongoing livestock grazing in the Gila District violates the agency's independent and continuing duty to ensure that its actions are not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat, violates ESA Section 7, 16 U.S.C. § 1536(a)(2), and is arbitrary and capricious, or otherwise not in accordance with law, in violation of the APA, 5 U.S.C. § 706(2).

By failing to reinitiate and complete consultation on the ongoing impacts of livestock grazing authorized on the A-Diamond, Cochran, Horsetrack, LEN, Myers, Teacup Ranch, Whitlow, Bonita Creek, Johnny Creek, Zorilla, Gila, Morenci, Bull Gap Community, Twin C, Mescal Mountain, Christmas, and Hidalgo allotments within the Gila District despite new information revealing that such grazing affects, and will continue to adversely affect, ESA-listed species and designated critical habitat[38] in a manner and to an extent not previously considered and authorized by the existing 2012 and 2024 Biological Opinions, FWS and BLM violated Section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), and its implementing regulations.[39]

Please contact Chris Bugbee or Robin Silver (contact information below) if you have any questions or if you would like to discuss this matter. Please include livestock@biologicaldiversity.org on any email correspondence.

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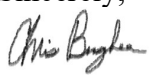
[38] Specifically, the new information demonstrates that grazing on the allotments listed above is causing previously unconsidered effects to the endangered southwestern willow flycatcher and its critical habitat, the threatened western yellow-billed cuckoo and its critical habitat, the endangered Gila topminnow, the endangered Gila chub, the endangered spikedace and its critical habitat, the endangered loach minnow and its critical habitat, the endangered razorback sucker and its critical habitat, the threatened narrow-headed gartersnake, and the threatened northern Mexican gartersnake and its critical habitat.

[39] *See* Order on Cross Mots. for Summ. J. and Defs' Mot. for a Stay or Remand*, Ctr. for Biological Diversity v. U.S. Dep't of the Interior,* No. 24-cv-04651, Dkt. 62 (N.D. Cal. Mar. 30, 2026) (vacating 50 C.F.R. § 402.16(a) (2025), concerning the duty to request reinitiation of consultation, and reinstating prior (2023) version, under which both the action agency and the Service share responsibility for reinitiating consultation).

Sincerely,



Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org
livestock@biologicaldiversity.org

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
rsilver@biologicaldiversity.org

CC:
Stewart Jacks, Acting Southwest Regional Director, FWS (stewart_jacks@fws.gov)
Raymond Suazo, Arizona State Director, BLM (rmsuazo@blm.gov)

Exhibits:

Exhibit A: Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM State Director, Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Feb. 23, 2026).

Exhibit B: Sixty-Day Notice of Intent to Sue the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service for Endangered Species Act Violations (Apr. 10, 2023).

Exhibit C: Addendum to April 2023 Sixty-Day Notice (May 1, 2023).

Exhibit D: Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Mar. 20, 2024).

Exhibit E: Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Anthony Feldhausen, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 23, 2024).

Exhibit F: Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 10, 2025).

Exhibit G: Addendum to Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 15, 2025).

Exhibit H: Center for Biological Diversity, *Grazed to Death: Livestock Production Adversely Modifying Majority of Drought-Stricken Western Yellow-billed Cuckoo Critical Habitat on Public Lands in Arizona and New Mexico* (June 2024), available at https://biologicaldiversity.org/species/birds/yellow-billed_cuckoo/pdfs/Cuckoo-Adverse-Modification-Report_CBD_2024.pdf.

Exhibit I: Center for Biological Diversity, *Grazed to Death: Livestock Production Adversely Modifying Most Critical Habitat for Northern Mexican Garter Snakes on Public Lands in Arizona* (Sept. 2024), available at https://biologicaldiversity.org/species/reptiles/Mexican_garter_snake/pdfs/Northern-MX-garter-snake_AdMod-report.pdf.

Exhibit J: Center for Biological Diversity, *Livestock Damage to Aquatic and Riparian Critical Habitat in the U.S. Southwest: Filed Assessment Results 2017–2024* (Mar. 2025), available at https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/Grazing-Report-2017-2024_CBD_March-2025.pdf

Exhibit K: S. Leachet, BLM, *Safford Field Office Annual Report to U.S. Fish and Wildlife Service* (June 13, 2025).

Exhibit L: Grazing Survey Methodology and Surveyor Credentials.

Exhibit M, Email from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Ray Suazo, BLM Arizona State Director, Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Mar. 27, 2026)

Exhibit N: Letter from Chris Bugbee, Southwest Conservation Advocate, Center for Biological Diversity, to Raymond Suazo, BLM Arizona State Director, Lance Brady, BLM Gila District Manager, and Heather Whitlaw, FWS Arizona State Supervisor (Apr. 7, 2026).

February 23, 2026

Ray Suazo, State Director
U.S. Bureau of Land Management
Arizona State Office
One North Central Ave., Suite 800
Phoenix, AZ 85004-4427
rmsuazo@blm.gov

Anthony Feldhausen, Gila District Manager
U.S. Bureau of Land Management
3201 E. Universal Way
Tucson, AZ 85756
afeldhausen@blm.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
9828 N 31st Ave., Phoenix, AZ 85051
Heather_whitlaw@fws.gov

Re: Trespass livestock damage has continued throughout the Gila Box Riparian National Conservation Area in 2025.

Dear Director Suazo, District Manager Feldhausen and Supervisor Whitlaw,

On October 27, 2021, the Center for Biological Diversity (the Center) and Maricopa Audubon Society (MAS) filed a complaint alleging violations of the Administrative Procedures Act and the Endangered Species Act (ESA) with respect to trespass livestock and damage caused to critical habitat in the Gila Box Riparian National Conservation Area (Gila Box). To resolve that litigation, the Center and MAS entered into a Stipulated Settlement Agreement with BLM and FWS on August 11, 2022, whereas federal agencies would monitor the Gila Box for trespass livestock and damaged fences, with the former removed and the latter repaired expeditiously. The agreement expired on January 31, 2024, with the issuance of a new biological opinion for grazing on the BLM Gila District (2024 Biological Opinion).

In March 2024, Center surveyors documented cattle damage and browsed woody recruitment on nearly every exposed terrace and river access point throughout the Gila Box–again in areas where BLM has prohibited cattle since 1998.[1] At least three different herds were observed during those surveys, including some combination of ear-tagged cows with calves and untagged feral cattle. The Center wrote a letter on March 20, 2024, urging responsible agency officials to comply with the terms of the 2024 Biological Opinion by immediately removing

[1] BLM 2023 BE at 8 ("The 1998 GBRNCA Management Plan decision excludes livestock grazing from the riparian areas within the GBRNCA for the Johnny Creek, Bonita Creek, Bull Gap Community, Turtle Mountain, Twin C, County Line, Gila, Smuggler Peak, Zorilla, and Morenci Allotments for the life of the plan.").

these livestock, repairing fences and constructing additional barriers to prevent additional unauthorized livestock in these areas.

When the Center returned to the Gila Box on August 27, 2024, we encountered trespass cattle and documented significant damage to off-limits, designated critical riparian habitat. These findings prompted a November 20, 2024 Notice of Intent to Sue ("2024 NOI") based on the same chronic and unresolved issues, agency inaction, and violations of grazing rules and the ESA. The 2024 NOI is ripe.

In 2025, the Center surveyed selected areas of the Gila Box between March 31-April 2 and subsequently completed full surveys between August 27-30, 2025. In August, the Center documented recent and significant impacts throughout the entire cattle-excluded Gila Box including in sections that are not within grazing allotments. Surveyors tallied 32 cows and documented identifiable cattle brands (https://agriculture.az.gov/animals/livestock-brands) that can be readily traced back to grazing permittees, who are required to work with the BLM to remove trespass livestock and maintain fence lines that protect riparian resources.

An overview of the Center's 2025 survey findings and a subset of our photo-documentation are provided herein for the record.

Zorilla allotment

Trespass cattle damage a nursery bar in razorback sucker and yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. Riverbanks in the background are trampled, chiseled and eroding from herds accessing the river. There is no grazing allowed here. 32.965865, -109.311679. April 2, 2025.

Willow regeneration browsed and stunted by trespass cattle in razorback sucker and yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.964411, -109.324101. April 2, 2025.

Yellow-billed cuckoo designated critical habitat trampled and devoid of herbaceous groundcover within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.965492, -109.309065. September 28, 2025.

A cow wallow in yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. Old feces, fresh tracks, a lack of groundcover and significant soil disturbances indicate a sustained presence of trespass cattle. There is no grazing allowed here. 32.965741, -109.313503. September 28, 2025.

Yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area, devoid of herbaceous groundcover and understory vegetation from trespass cattle. There is no grazing allowed here. 32.965891, -109.314230. September 28, 2025.

Feces, wallows, and a lack of herbaceous groundcover in yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.967216, -109.318122 (2). September 28, 2025.

Gila allotment

Willow regeneration browsed and stunted by trespass cattle in razorback sucker and yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.962942, -109.345418. April 2, 2025.

Continued willow regeneration browsed and stunted by trespass cattle in razorback sucker and yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.968969, -109.344581. April 2, 2025.

Fresh tracks, feces of various ages and areas devoid of herbaceous groundcover are found through yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.971460, -109.348364. September 28, 2025.

Old feces, fresh tracks, a lack of groundcover and significant soil disturbances indicate a sustained presence of trespass cattle in yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.972566, -109.350347. September 28, 2025.

Tracks, trails, and feces from trespass cattle cover the entire floodplain in yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.972413, -109.351822. September 28, 2025.

A huge expanse of the Gila Box Riparian National Conservation Area trampled and devoid of herbaceous groundcover from trespass cattle in yellow-billed cuckoo designated critical habitat. There is no grazing allowed here. 32.972083, -109.354269. September 28, 2025.

Feces, soil disturbances and lack of groundcover from trespass cattle define a riparian zone designated as critical for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.967502, -109.344171. September 28, 2025.

A cohort of browsed and stunted cottonwood trees in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.975766, -109.371861. September 28, 2025.

One of approx. six cows observed in designated critical habitat for yellow-billed cuckoos near Gillard Hot Springs, within the Gila Box Riparian National Conservation Area on September 28, 2025. There is no grazing allowed here. 32.972637, -109.352977.

Morenci allotment

A browsed young cottonwood tree stands in front of a cohort of browsed willow trees in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.974788, -109.373790. September 28, 2025.

Fresh trespass cattle tracks lead to a nursery bar of browsed willow regeneration in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.969463, -109.398493. September 29, 2025.

Cow tracks weave through willow regeneration on the wrong side of a nonfunctional fence (upper right) in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. 32.959343, -109.406614 (1). Nearby, a mineral lick has been placed along a fence at the Eagle Creek confluence. Cattle impacts were documented on both sides of both fences. 32.960091, -109.406545 (2). September 29, 2025.

Trespass cow actively consuming willow regeneration in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.954720, -109.412804. September 29, 2025.

Trespass cow with identifiable brands in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.954312, -109.411764. September 29, 2025.

An identifiable brand on one of several trespass cows near the Eagle Creek/ Gila River confluence, in designated critical habitat for yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.964307, -109.408997. September 29, 2025.

Bull Gap allotment

Significant soil disturbances from trespass cattle in razorback sucker and yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.932171, -109.438441. September 29, 2025.

Another herd of trespass cattle in yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.934813, -109.445667. September 29, 2025.

Trespass cattle tracks lead to nursery bars of browsed willow regeneration in designated riparian critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.933986, -109.449477. September 29, 2025.

Fresh tracks from trespass cattle cover the entire floodplain in razorback sucker and yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.932546, -109.450182. September 29, 2025.

Significant soil disturbances and bank degeneration from trespass cattle in razorback sucker and yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.926445, -109.454366. September 29, 2025.

Continued examples of browsed willow regeneration from trespass cattle in razorback sucker and yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.930964, -109.451344. September 29, 2025.

Trespass cow with identifiable brands in designated riparian critical habitat yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.925736, -109.458998. September 29, 2025.

Twin C allotment

Riverbanks grazed, chiseled and eroding from trespass herds accessing off-limits razorback sucker and yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.919255, -109.460990. September 30, 2025.

Another example of yellow-billed cuckoo designated critical habitat trampled and devoid of herbaceous groundcover from trespass cattle in the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.912388, -109.458368. September 30, 2025.

Significant trampling and groundcover removal from trespass herds accessing razorback sucker and yellow-billed cuckoo designated riparian critical habitat within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.908351, -109.461007. September 30, 2025.

Tracks and trails from trespass cattle cover the entire floodplain in razorback sucker and yellow-billed cuckoo designated critical habitat within the Gila Box Riparian National Conservation Area. Note stunted cottonwood regeneration in the center of the image. There is no grazing allowed here. 32.897617, -109.470287. September 30, 2025.

A herd of approx. ten cows observed in designated critical habitat for razorback suckers and yellow-billed cuckoos within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.919243, -109.454496. September 30, 2025.

Bonita Creek/ Johnny Creek allotments

Significant trespass cattle damage to designated critical habitat for spikedace and yellow-billed cuckoos along Bonita Creek within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.970876, -109.541148 (2). March 31, 2025.

Significant soil disturbances and bank-line vegetation removal from trespass cattle in designated critical habitat for spikedace and yellow-billed cuckoos along Bonita Creek within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.973347, -109.541863 (1); 32.974481, -109.541512 (2). March 31, 2025.

Continued excessive riparian zone damage from trespass cattle in designated critical habitat for spikedace and yellow-billed cuckoos along Bonita Creek within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.974095, -109.541486 (2). March 31, 2025.

Significant vegetation removal by trespass cattle in a trampled, designated wetland within the Gila Box Riparian National Conservation Area. There is no grazing allowed here. 32.979841, -109.542680. March 31, 2025.

As the Center gears up for the 2026 field season, we remind federal officials that despite protective congressional designation, moderate to significant cattle damage has defined the Gila Box RNCA every year we've surveyed including in 2025 (range 82.4%-87.2% of survey miles off-limits to grazing were moderately to significantly damaged by cattle; average 85.3%). In each of the three Gila Box survey years (we did not survey in 2022-2023 due to the Stipulated Settlement Agreement), the majority of allotments surveyed had 100% moderate to significant cattle damage all in areas that are supposed to be off-limits to cattle (see Table 1 below).[2]

Table 1. Percent of critical habitat survey miles moderately to significantly damaged by cattle in the Gila Box RNCA, by allotment, from 2021-2025.

Unit/ Allotment	2021	2024	2025
Gila Box RNCA	87.2%	86.2%	82.4%
Bonita Creek	58.1%	48.7%	28.6%
Bull Gap Community	100.0%	71.7%	65.5%
Gila	100.0%	100.0%	100.0%
Johnny Creek	100.0%		
Johnny Creek/Bonita Creek		100.0%	79.6%
Morenci	100.0%	100.0%	100.0%
Not in allotment		100.0%	
Twin C			100.0%
Zorilla	100.0%	100.0%	100.0%

[2] For more details regarding survey results and methodology, see the 2024 annual report, previously provided to agency officials. An updated report concerning 2025 surveys results is currently *in prep* and will also be provided to agency officials upon completion.

Not only does the 2024 Biological Opinion base "no jeopardy" conclusions on the faulty assumption that livestock are excluded from the Gila Box, which is obviously not the case, it also fails to set a level of 'take' for southwestern willow flycatchers[3] and yellow-billed cuckoos across the entire Gila District despite admitting that grazing "is likely to result in adverse effects to cuckoo breeding habitat and its recovery".[4]

In addition to our previous documentation, BLM continued to observe hundreds of cattle in the Gila Box in 2023, according to their 2023 Biological Evaluation for the Gila District's Livestock Grazing Program. But in the subsequent 2024 Biological Opinion, USFWS explicitly refused to consider the effects of chronic, well-documented, unauthorized grazing degradation in Gila Box, and in a multitude of locations throughout the Gila District, as part of the proposed action. Thus, the entire 2024 Biological Opinion falls short of its very purpose in protecting listed species and their critical habitats.

This letter, along with the Center's previous Notices and letters, evidence an ongoing pattern wherein annual authorized livestock grazing– adjacent to off-limits areas closed to protect wildlife– appears to frequently and inevitably result in unauthorized livestock grazing within those closed areas. The result is widespread, often severe damage to primary constituent elements for ESA-listed species and unlawful destruction and/or adverse modification to their designated riparian and/or aquatic critical habitat.

Evidence of ongoing destruction and adverse modification provided by the Center represents the best available scientific information relating to the effects of the Gila District's annual grazing authorizations to critical habitat and federally listed species and is corroborated by the BLM's own monitoring reports. This best available scientific information also demonstrates a pattern of those effects recurring year after year as a reliable consequence of annual livestock grazing authorizations.

As we've shown, the problem of trespass cattle in the Gila Box has continued throughout our Stipulated Settlement Agreement and for two consecutive years since the issuance of the 2024 Biological Opinion. BLM has promised to monitor unauthorized use and to take action to remove or notify the permit holder to remove unauthorized livestock. When will this occur?

We strongly urge agency officials to effectually address these ongoing issues to prevent yet another round of litigation concerning Endangered Species Act violations on these Gila District grazing allotments.

[3] Except on three grazing allotments district-wide, none of which occur within the Gila Box.
[4] 2024 Biological Opinion, page 179.

Sincerely,

Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org

CC: USFWS Regional Director Amy Lueders (rdlueders@fws.gov)

CENTER for BIOLOGICAL DIVERSITY Because life is good.

April 10, 2023

Deb Haaland, Secretary of the Interior
U.S. Dept. of the Interior
1849 C Street, N.W.
Washington, D.C. 20240
exsec@ios.doi.gov

Tracy Stone-Manning, Director
U.S. Bureau of Land Management
1849 C Street, N.W.
Washington, D.C. 20240
tstonemanning@blm.gov

Martha Williams, Director
U.S. Fish and Wildlife Service
1849 C Street, N.W
Washington D.C. 20240
martha_williams@fws.gov

Raymond Suazo, State Director
U.S. Bureau of Land Management
Arizona State Office
One North Central Ave., Suite 800
Phoenix, AZ 85004-4427
blm_az_asoweb@blm.gov

Colleen Dingman, Field Manager
U.S. Bureau of Land Management
Gila District, Tucson Field Office
3201 E. Universal Way
Tucson, AZ 85756
blm_az_tfoweb@blm.gov

Amy Lueders, Regional Director
U.S. Fish and Wildlife Service
P.O. Box 13062321
Albuquerque, NM 87102
RDLueders@fws.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
West Royal Palm Road, Suite 103
Phoenix, AZ 85021
heather_whitlaw@fws.gov

Dear Secretary Haaland, Directors Stone-Manning and Williams, State Director Suazo, Field Manager Dingman, Regional Director Lueders, and Supervisor Whitlaw,

RE: Sixty-Day Notice of Intent to Sue the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service for Endangered Species Act Violations for Failing to Ensure that Bureau of Land Management Authorized Cow Grazing Does Not Continue Destroying Southwestern Willow Flycatcher and Western Yellow-Billed Cuckoo Critical Habitat.

The U.S. Secretary of the Interior, U.S. Bureau of Land Management ("BLM") Director, U.S. Fish and Wildlife Service ("USFWS") Director, BLM Arizona State Director, BLM Gila

District Field Manager, USFWS Southwest Regional Director, and USFWS Arizona Ecological Services Supervisor are hereby notified by the Center for Biological Diversity ("Center") and Maricopa Audubon Society of our intention to file suit 60 days after the filing of this Notice for unremedied violations of the Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531-1544, and its implementing regulations, 50 C.F.R. §§ 402.01-402.17, and the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701-706.

We file this Notice in connection with (1) USFWS' May 21, 2012, Biological Opinion on the Gila District Livestock Grazing Program ("2012 Biological Opinion")[1], (2) USFWS' August 20, 2018, Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona ("2018 Biological Opinion")[2], and (3) BLM's reliance on these unlawful and arbitrary consultation documents in allowing continued destructive cow grazing, as we present in this Notice, on the Gila District's "Middle Gila" grazing allotments.

We intend (1) to challenge the 2012 and 2018 Biological Opinions' failure to protect designated riparian Critical Habitat by failing to utilize "the best scientific . . . data available."[3]; (2) to force reinitiation of consultation to redo the illegal 2012 and 2018 Biological Opinions to incorporate new information documenting that Gila District cow grazing is affecting Southwestern Willow Flycatcher and Yellow-billed Cuckoo and their designated riparian Critical Habitat in a manner and to an extent not considered in the 2012 and 2018 Biological Opinions.; and, (3) to enforce the Endangered Species Act Section 7(d), which prohibits Federal agencies from making "any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection 7(a)(2)"[4] [insuring any action is not likely to jeopardize the continued existence of an endangered species or result in the destruction or adverse modification of Critical Habitat].

We note that our August 11, 2022, Settlement,[5] resulting from our litigation against BLM and USFWS to protect the Gila Box Riparian National Conservation Area ("RNCA") from harmful, illegal cow grazing,[6] states, "…the Federal Defendants had reinitiated appropriate ESA consultation on the Gila District Livestock Grazing Program, including the Gila Box RNCA, and continue to amend that consultation with the addition of newly listed species or proposed critical habitat." However, since both BLM and USFWS refuse to cooperatively provide us with any pertinent documentation including (1) any correspondence confirming that a reinitiation has even

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[1] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion").

[2] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion")

[3] 16 U.S.C. § 1536(a)(2).

[4] 16 U.S.C. § 1536(d).

[5] STIPULATED SETTLEMENT AGREEMENT, Center for Biological Diversity, and Maricopa Audubon Society, Plaintiffs, vs. U.S. Bureau of Land Management, and U.S. Fish and Wildlife Service, Defendants., CV 21-411-TUC-RM (DTF), August 11, 2022, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/blm-gila-box-lawsuit-20220811-SETTLEMENT-Dkt-44-1.pdf.

[6] Sixty-Day Notice of Endangered Species Act Violations, Gila Box Riparian National Conservation Area, CBD, July 22, 2021, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/blm-bonita-creek-gila-box-NOI-20210722.pdf.

truly been requested, (2) a final Biological Assessment necessary to reinitiate the consultation, and (3) the communications between BLM and USFWS regarding this alleged reinitiation of consultation; only a Notice and its mandatory response requirements afford the Public any opportunity to participate in and assure the protection of the endangered species and critical habitat at issue here when dealing with such uncooperative and inappropriately secretive agencies.

In this Notice, the Center and Maricopa Audubon provide pertinent new and previously ignored background information and identify the legal violations that we intend to challenge in federal court should USFWS and BLM fail to correct these violations within 60 days.

We will continue to be available to discuss these matters at your convenience; however, as destructive illegal cow grazing continues, we are not willing to further delay filing a lawsuit should USFWS and BLM continue failing to correct these violations within 60 days.

EXECUTIVE SUMMARY

The Center conducted Cow Impact Surveys ("CIS") of designated Critical Habitat within the BLM's "Middle Gila" allotments, located in Pinal County, AZ, between April 4, 2022, and December 7, 2022. The Center's professional field biologists documented livestock grazing impacts to standing waters, streambanks, riparian vegetation, upland vegetation, and soils and examined the condition of cow fencing. Using our CIS data, stream reaches were then analyzed and ranked with absent, light, moderate or significant grazing impacts. Surveys covered approximately 15 miles, 13.8 miles of which were significantly impacted by cow grazing (92%). This Notice presents photo-documentation of widespread and significant grazing impacts on designated riparian Critical Habitat, which is legally supposed to be managed primarily for the survival and the recovery of two species of imperiled, native, riparian-obligate birds.

The southwestern willow flycatcher (*Empidonax traillii extimus*, "WFC") was listed as federally endangered in 1995, received a Recovery Plan in 2002[7], and Critical Habitat designation in 2013.[8] The Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*, "YBC") was listed as threatened under the ESA in 2014.[9] Critical Habitat was designated on April 21, 2021.[10] Although the YBC has yet to receive a Recovery Plan, USFWS recommended that the general guidelines for livestock grazing as expressed in the

[7] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico.

[8] Designation of Critical Habitat for Southwestern Willow Flycatcher: Final rule. 78 FR 344 534

[9] Rules and Regulations. Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192. October 3, 2014

[10] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo, Final Rule, U.S. Fish and Wildlife Service, Federal Register, Vol. 86, No. 75, April 21, 2021, page 20798.

WFC Recovery Plan[11] **"**can serve as yellow-billed cuckoo grazing standards until species-specific recommendations are developed."[12]

The environmental damage that the Center identified during our CIS surveys is both acute and chronic. Cows are grazing, trampling, and defecating in riparian areas that WFC and YBC depend on for their reproduction and eventual recovery. Nearly all unauthorized grazing sites visited during surveys were significantly damaged by cows and their feces. Many riparian ecosystems surveyed were so impacted by cows that their function as designated WFC and YBC critical foraging and breeding habitat is diminished. For WFC and YBC on the Gila District, the seven allotments at issue are A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments in Pinal County.

The May 21, 2012, and the August 20, 2018, Biological Opinions include Incidental Take Statements ("ITS") that fail to discuss WFC and YBC Critical Habitat and mitigation measures that will adequately address impacts to these species consistent with ESA's protective intent.[13] Thus, BLM and USFWS continue greenlighting cow grazing plans and continue allowing cow grazing that is causing the destruction of designated riparian WFC and YBC Critical Habitat with no way of triggering a "Take." The current Middle Gila grazing program is diminishing the likelihood of successful WFC and YBC reproduction and recovery and is causing direct destruction of Critical Habitat components such that the value of Critical Habitat as a whole for conservation of WFC and YBC is reduced.

This destructive, outdated, and unjustifiable commercial practice of cow grazing is also occurring subsequent to a substantial, recent wildfire that has killed swaths of riparian-associated native trees within the Critical Habitat designations of BLM's Gila District. It is also occurring against the backdrop of a rapidly warming climate and the prolonged, more than 20-year drought currently facing the southwestern United States.[14] This practice is exacerbating the negative effects of these very serious circumstances.[15]

According to the WFC Recovery Plan,[16] if potential WFC habitat is degraded and grazing is a major stressor, and that habitat is restorable sans grazing, then grazing should be excluded.[17] The photos presented in this Notice make clear that the current strategy of seasonal exclusion only results in chronic and continued degradation of vital Critical Habitat components, as does managing threatened and endangered species' habitat by using cow grazing metrics. Imperiled

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[11] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Pages 26-27.

[12] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion") page 11.

[13] *Center for Biological Diversity v.* BLM, 698 F.3d 1101, 1115 (9th Cir. 2012).

[14] Garfin, G., Jardine, A., Merideth, R., Black, M. and LeRoy, S. eds., 2013. Assessment of climate change in the southwest United States: a report prepared for the National Climate Assessment.

[15] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[16] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Page 26.

[17] *Ibid.*

birds and a suite of other native wildlife would benefit from full exclusion of cow grazing and from active riparian restoration.

The law prohibits any action that reduces "appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[18] The law also prohibits any action causing "direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species."[19]

The BLM's scheme of avoiding protection of designated riparian Critical Habitat by relying on unenforced seasonal restrictions and non-applicable cow grazing utilization metrics instead of exclosures must end immediately to assure Willow Flycatcher and Yellow-billed Cuckoo survival, nesting success, and recovery. Only complete exclusion of cows from the Middle Gila's designated riparian Critical Habitat can protect and rehabilitate these fragile areas.[20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34]

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[18] 50 CFR § 402.02; 16 U.S.C. 1531 *et seq*.

[19] *Ibid.*

[20] Meehan, W.R. and Platts, W.S., 1978. Livestock grazing and the aquatic environment. *Journal of Soil and Water Conservation*, *33*(6), pp.274-278.

[21] Platts, W.S. and Wagstaff, F.J., 1984. Fencing to control livestock grazing on riparian habitats along streams: is it a viable alternative?. *North American Journal of Fisheries Management*, *4*(3), pp.266-272.

[22] Platts, W.S., 1981. *Influence of forest and rangeland management on anadromous fish habitat in Western North America: effects of livestock grazing* (Vol. 7). US Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station.

[23] Szaro, R.C. and Pase, C.P., 1983. Short-term changes in a cottonwood-ash-willow association on a grazed and an ungrazed portion of Little Ash Creek in central Arizona Populus fremontii, velvet ash, Fraxinus velutina, Goodding willow, Salix gooddingii. *Rangeland Ecology & Management/Journal of Range Management Archives*, *36*(3), pp.382-384.

[24] Szaro, R.C., Belfit, S.C., Aitkin, J.K. and Rinne, J.N., 1985. Impact of grazing on a riparian gartersnake. *Johnson, RR technical coordinator. Riparian Ecosystems and Their Management: Reconciling Conflicting Uses. United States Forest Service, General Technical Report RM-120*, pp.359-363.

[25] Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona, April 28, 2016, p. 235.

[26] Response of breeding birds to the removal of cattle on the San Pedro River, Arizona, Krueper, D. J., J. L. Bart, and T. D. Rich. 2003. Conservation Biology 17(2): 607-615.

[27] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[28] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In California Riparian Systems (pp. 97-108). University of California Press.

[29] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

[30] Cannon, R.W. and Knopf, F.L., 1984. Species composition of a willow community relative to seasonal grazing histories in Colorado. *The Southwestern Naturalist*, *29*(2), pp.234-237.

[31] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[32] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[33] Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona, USFWS, April 28, 2016, pages 235 and 248.

[34] Poessel, S.A., J. C. Hagar, P. K. Haggerty, and T. E. Katzner. 2020. Removal of cattle grazing correlates with increases in vegetation productivity and in abundance of imperiled breeding birds. Biological Conservation 241 (2020) 108378: 1-9. www.elsevier.com/locate/biocon.

In this Notice, the Center and Maricopa Audubon provide new and previously ignored background information and identify the legal violations that we intend to challenge in federal court should USFWS and BLM fail to correct these violations within 60 days. This Notice provides new information that 1) agency actions are affecting WFC and YBC and their designated Critical Habitat in a manner and to an extent not considered in the 2012 and 2018 Biological Opinions, and 2) BLM-authorized cow grazing has been dramatically modified in a manner that is affecting WFC and YBC and their designated Critical Habitat that was not considered in the 2012 and 2018 Biological Opinions.

The photos presented in this NOI document that cow grazing is occurring outside of authorized seasons and beyond authorized limits. In combination with recent fires which have eliminated swaths of reproducing adult native trees, and the backdrop of ongoing drought and unpredictable rainfall, we assert that permanent exclusion of cow grazing in WFC and YBC critical habitat designations along the Middle Gila is required so that authorized agency actions 1) are in compliance with the legal requirements and intent of the Endangered Species Act, 2) are in line with the intent of the WFC Recovery Plan, and, 3) fulfill the affirmative duty of the BLM to conserve listed species.

To summarize our concerns:

1. The 2012 and 2018 Biological Opinions are inadequate and illegal because:
    a. The 2012 and 2018 Biological Opinions allow designated riparian Critical Habitat along the Middle Gila to be managed by a disingenuous scheme that provides no riparian exclosures and instead uses unenforced seasonal restrictions and inappropriate cow grazing utilization metrics that do not protect riparian dependent endangered species;
    b. The 2012 Biological Opinion's ITS for WFC is not related to the habitat impacts associated with BLM's authorized cow grazing action, and only (feebly) deals with unauthorized livestock and parasitism that can only occur within the seasonal exclusion time (WFC nesting season). It provides no enforceable protection for WFC designated riparian Critical Habitat essential for long-term survival and recovery.
    c. Likewise, the 2018 Biological Opinion's ITS for YBC contains no protection at all for essential habitat features required for YBC recovery and makes it impossible for authorized grazing to ever result in a 'Take'.
    d. The 2012 and 2018 Biological Opinions provide no discussion on climate change effects to WFC and YBC, and failed to include and consider the additive and cumulative impacts of riparian cow grazing and climate change, despite an extensive body of scientific literature that exists regarding climate change and cow grazing impacts.[35]

[35] For example: Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild and Feral Ungulates; Robert L. Beschta, Debra L. Donahue, Dominick A. DellaSala, Jonathan J. Rhodes, James R. Karr, Mary H. O'Brien, Thomas L. Fleischner, and Cindy Deacon Williams, Environmental Management (2013) 51:474-491.; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192, Page 59992, October 3, 2014.; Livestock Production, Climate Change, and Human Health:

e. The authorized livestock grazing season occurs during times when native riparian trees are still actively growing in the late autumn to early winter, during recruitment and bud-break,[36] and during winter/spring germination of native riparian trees[37], leaving sprouts and seedlings vulnerable to consumption by cattle.

2. Reinitiation of consultation must take place expeditiously based on the facts above as well as that:

   a. the new information presented in this Notice documents effects of the BLM's cow grazing program that is affecting listed species and designated riparian Critical Habitat in a manner and to an extent not considered in the 2012 and 2018 Biological Opinions; and,

   b. the new information presented in this Notice documents that cow grazing on BLM allotments along the Middle Gila has been and continues to be modified in a manner that is causing effects to listed species and their Critical Habitat that was not considered in the 2012 and 2018 Biological Opinions.[38]

   c. the new information presented in this Notice documents that a significant area along the Middle Gila is now in post-fire recovery yet continues to receive authorized and unauthorized cow impacts. Fire has eliminated mature, reproductive riparian trees, further reducing the chances of future recruitment events. BLM must now consider the additive and cumulative impacts of riparian cow grazing and climate change in combination with fire recovery and spread of invasive species.

3. Destructive cow grazing in designated riparian Critical Habitat along the Middle Gila continues currently. This destructive cow grazing must cease during the new consultation to prevent the BLM from further jeopardizing WFC and YBC survival and recovery and from further destroying their designated riparian Critical Habitat; and,

4. The BLM's reliance on the 2012 and 2018 Biological Opinions in allowing continued cow grazing along the Middle Gila's designated riparian Critical Habitat

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Closing the Awareness Gap, Debra L. Donahue, Environmental Law Reporter, 45 ELR 11112, 12-2015, http://ssrn.com/abstract=2696741; citing: *See, e.g.*, Beschta et al., *supra* note 59, at 476-81; Ripple et al., *supra* note 2, at 2, 3. Almost nothing is known, however, about the ability of shrublands to sequester carbon. *See* Jack A. Morgan et al., *Carbon Sequestration in Agricultural Lands of the United States*, 65 J. Soil & Water Conservation 6A, 7A (2010), doi:10.2489/jswc.65.1.6A. This is a "critical research need," *see id.*, particularly since shrubs dominate large areas of the public lands.; Climate change scenarios of herbaceous production along an aridity gradient: vulnerability increases with aridity, Carly Golodets, Marcelo Sternberg, Jaime Kiegel, Bertrand Boeken, Azlmen Henkin, No'am G. Silgmean and Eugene D. Ungar, DOI 10.1007/s00442-015-3234-5, February 7, 2015.; Riparian vegetation of ephemeral streams, Stromberg, J.C., Setaro, D.L., Gallo, E.L., Lohse, K.A. and Meixner, T., *Journal of Arid Environments*, *138*, 2017, pages 27-37.

[36] *Ibid.*

[37] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. The Great Basin Naturalist, pp.198-208.

[38] 50 C.F.R. § 402.16(a).

on the 7 allotments[39] noted in this Notice is not legal. The BLM must ensure its own compliance with the ESA as an action agency "cannot abrogate its responsibility to ensure that its actions will not jeopardize a listed species" merely by relying upon a Biological Opinion issued by USFWS.[40]

New consultation needs to be initiated that meaningfully incorporates the information presented in this Notice. When such new information becomes available, or when take has been exceeded, agencies, such as the BLM and USFWS, who fail to reinitiate consultation violate 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14. Besides violating the ESA, issuance of and reliance on ineffectual consultation documents violates the Administrative Procedure Act requirement that federal decisions are not "arbitrary, capricious, or an abuse of discretion."[41]

With the photo documentation of cow degradation of critical habitat designated for the recovery of imperiled species, compounded with recent large fires and ongoing climate change, we hope the BLM and USFWS will utilize the following 60 days to address and remedy the violations documented and presented in this Notice. Short of the violations documented and presented in this Notice being remedied in the next 60 days, the Center for Biological Diversity and Maricopa Audubon Society intend to file suit to address these serious legal violations.

[39] A-Diamond, Teacup Ranch, LEN, Cochran, Horesetrack. Myers, and Whitlow allotments, BLM Gila District, Tucson Field Office.

[40] *Pyramid Lake Paiute Tribe v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).

[41] 5 USC §706(2)(A).

DOCUMENT STRUCTURE

GENERAL BACKGROUND

The Center conducted Cow Impact Surveys ("CIS") of designated Critical Habitat within the BLM's seven "Middle Gila" allotments, located in Pinal County, AZ, between April 4, 2022, and December 7, 2022. The Center's professional field biologists documented livestock grazing impacts to standing waters, streambanks, riparian vegetation, upland vegetation, and soils and examined condition of cow fencing. Using our CIS data, stream reaches were then analyzed and ranked with absent, light, moderate or significant grazing impacts. Surveys covered approximately 15 miles, 13.8 miles of which were significantly impacted by cow grazing (92%). The two federally listed avian species at issue here are the Southwestern Willow Flycatcher (*Empidonax traillii extimus*, "WFC") and Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*, "YBC"). Our 2022 CIS surveys demonstrate adverse damages to both riparian and upland plant communities from livestock grazing in designated WFC and YBC Critical Habitat.

Willow flycatchers are insectivores, foraging in dense shrub and tree vegetation along rivers, streams, and other wetlands.[42] In the Southwest, WFC arrive on territories in late April or early May, and nest building begins in mid-May.[43] They require habitat in a dynamic, successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) [44] that includes dense riparian vegetation with thickets of trees (often willow) and shrubs, areas of dense riparian foliage from the ground level up to a canopy of at least to approximately 4 meters.[45] They also require that dense vegetation be interspersed with small openings of open water or marsh, or shorter/sparser vegetation that create a mosaic that is not uniformly dense.[46]

Yellow-billed Cuckoo migrate to Arizona beginning at the end of May to reproduce during the summer months. They require habitat with dense layers of vegetation in both the subcanopy and ground layers as well as perennial surface water.[47] Food availability for nesting YBC is influenced by the density and species composition of understory and overstory vegetation that supports required insect prey for nesting adults and chicks.[48] But, on BLM's Gila District, habitat characteristics that USFWS describes as essential to both WFC and YBC conservation and recovery are allocated to and eliminated by cows.

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[42] Correspondence to Sallie Diebolt, Chief, Arizona Branch, Department of the Army from USFWS Field Supervisor RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File #SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740, 02EAAZ00-2016-TA-0406, page 15.

[43] *Ibid*.

[44] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion") page 24.

[45] *Ibid.*

[46] *Ibid.*

[47] Rosenberg, K.V., R.D. Ohmart, W.C. Hunter, and B.W. Anderson. 1991. Birds of the Lower Colorado River Valley. Univ. Arizona Press, Tucson, AZ. 416pp.; Johnson, M.J., S.L. Durst, C.M. Calvo, L. Stewart, M.K. Sogge, G. Bland, and T. Arundel. 2008. Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use Along the Lower Colorado River and its Tributaries, 2007 Annual Report. USGS, Open File Report 2008-1177. 274pp.

[48] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48551.

The widespread adverse impacts that we've observed and documented occur as the result of BLM personnel's callous disregard for the protection of Public Lands, of rare wetland habitat, and of endangered species protection laws. Our surveys followed one of the most productive monsoon seasons in history that occurred over the previous summer in 2021. Considering the significant amount of rainfall the region received prior to our surveys, environmental damage to designated critical habitat, as illustrated in this Notice, is especially concerning and obviously occurs every year regardless of precipitation trends.

In arid regions, chronic and widespread grazing represents the single most significant human impact to ecosystems. Cows affect ecosystem resources in ways that accentuate climate impacts.[49] The vast majority of grazed western riparian areas are already deficient in willow understory and nearly devoid of overstory cottonwood.[50,51] Foraging cows continue to reduce the density of willow and other shrubs, eliminate cottonwood and willow reproduction by feeding on and trampling seedlings, and modify habitat through soil compaction and other means.[52,53,54,55,56] This unwarranted ecological impact has resulted in doomed stands where old cottonwood trees in the overstory are dying with no new recruitment to replace themselves.[57,58,59,60] An obvious conclusion is that cow grazing can prevent riparian areas from yielding habitat for imperiled species in perpetuity in Arizona.

In combination with dire climate projections that predict increasingly hotter and drier summers with less predictable precipitation,[61] status quo cow grazing should not continue

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[49] Beschta, R.L., Donahue, D.L., Della Sala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[50] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.

[51] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[52] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[53] Belsky, A.J., Matzke, A. and Uselman, S., 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and water Conservation*, *54*(1), pp.419-431.

[54] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. *Desert Plants*.

[55] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation Biology, *8*(3), pp.629-644.

[56] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[57] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[58] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. *Desert Plants*.

[59] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[60] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[61] Garfin, G., Jardine, A., Merideth, R., Black, M. and LeRoy, S. eds., 2013. Assessment of climate change in the southwest United States: a report prepared for the National Climate Assessment.

occurring without revision, and without evaluation of the near-term effect of prolonged drought on endangered species and designated Critical Habitat, particularly the loss of essential streamside vegetation. Cows continuously harm future vegetation recovery, removing what little cover is available for wildlife requiring successional and regenerating vegetative structure. Vegetation loss is worsened by a lack of monitoring, a lack of enforcement of grazing rules and limits, and through the use of a grazing promotion and perpetuation scheme that is not relevant to the protection of endangered species and their designated riparian Critical Habitat.

For WFC and YBC, the seven allotments at issue here include the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments of the Gila District in Pinal County, Arizona. Continued failure by the BLM and USFWS to reinitiate consultation on these seven allotments of the Gila District in Pinal County, Arizona violates the law.[62] Reinitiation of consultation must take place.[63]

The following image is a representative example of how WFC and YBC Critical Habitat looks on the Middle Gila allotments at the onset of WFC breeding season:

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.105253, -111.113206. April 5, 2022.

[62] 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

[63] 16 U.S.C. § 1532, 50 CFR § 17.21, 16 U.S.C. § 1536(b)(4).

The Center has recent, successful legal challenges against the environmentally damaging rangeland programs of Apache-Sitgreaves,[64] Coconino,[65] Gila,[66] Prescott[67] and Tonto[68] National Forests, and against the environmentally damaging actions of Arizona BLM officials.[69] However, widespread adverse destruction of designated riparian Critical Habitat continues on BLM lands managed by the Tucson Field Office, promoted and perpetuated by a dishonest management scheme that, instead of providing riparian cow exclosures, relies on unenforced seasonal limitations and cow grazing utilization metrics that do not conserve or protect the habitat of riparian dependent endangered species.

For the seven allotments at issue here, cow grazing in WFC and YBC Critical Habitat is governed by cow forage utilization standards and seasonal restrictions which are not adequate for the protection of threatened and endangered riparian species. By allocating vital habitat resources to cows during winter and spring, critical habitat designations for WFC and YBC are left diminished at the time of breeding and over the long term. The photos in this Notice clearly illustrate this problem. With ground cover vegetation in critical habitat designations extensively removed on an annual basis during spring, prior to summer downpours, drainages will inevitably capture less rainwater through soil infiltration. The result is higher levels of runoff and erosion, failure to moisten soil layers and recharge groundwater, and higher ground temperatures during the hottest months of the year which, in a disastrous feedback cycle, prevents native plant recovery and reestablishment. All these effects hinder stream recovery and foster permanent degradation of water and wildlife resources on public lands.

Not only does such reckless and irresponsible management fail to consider the best available science of how to manage surface water during drought, it also ignores the natural history requirements of ESA-listed wildlife and the advice of agency experts, that state, for example, that "because the western yellow-billed cuckoo is listed as threatened, all the units are

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[64] Sixty-Day Notice of Endangered Species Act Violations, Apache-Sitgreaves National Forest, CBD, June 27, 2019, http://forestpolicypub.com/wp-content/uploads/2019/07/000007_Center-for-Bio-Div-re-ESA-re-Jumping-Mouse_Region-3.pdf.; Sixty-day Notice of Endangered Species Act Violations, Upper Gila River Watershed, CBD, July 17, 2019, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/Upper-Gila-USFS-grazing-allotments-NOI-2019_07_17.pdf.

[65] Sixty-Day Notice of Endangered Species Act Violations, Verde River Drainage, CBD, March 16, 2020, https://www.biologicaldiversity.org/programs/public_lands/rivers/pdfs/NOI-20200316-Verde-River.pdf.;

[66] Sixty-day Notice of Endangered Species Act Violations, Upper Gila River Watershed, CBD, July 17, 2019, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/Upper-Gila-USFS-grazing-allotments-NOI-2019_07_17.pdf.

[67] Sixty-Day Notice of Endangered Species Act Violations, Verde River Drainage, CBD, March 16, 2020, https://www.biologicaldiversity.org/programs/public_lands/rivers/pdfs/NOI-20200316-Verde-River.pdf.;

[68] Sixty-Day Notice of Endangered Species Act Violations, Verde River Drainage, CBD, March 16, 2020, https://www.biologicaldiversity.org/programs/public_lands/rivers/pdfs/NOI-20200316-Verde-River.pdf.; and, Sixty-Day Notice of Endangered Species Act Violations, for Tonto National Forest allotments, the Seventy-Six, Hardt Creek, Dagger, Poison Springs and Tonto Basin allotments on the Tonto Basin Ranger District; the Gisela allotment on the Payson Ranger District; Hick-Pikes Peak, Chrysotile and Lyons Fork allotments on the Globe Ranger District; Crouch Mesa, Soldier Camp, Buzzard Roost, and OW allotments on the Pleasant Valley Ranger District, CBD, November 9, 2022, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/tonto-NOI-20221109.pdf.

[69] Sixty-Day Notice of Endangered Species Act Violations, San Pedro Riparian National Conservation Area, CBD, July 9, 2021, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/NOI-20210709-SPRNCA-TRESPASS-GRAZING.pdf.; Sixty-Day Notice of Endangered Species Act Violations, Gila Box Riparian National Conservation Area, CBD, July 22, 2021, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/blm-bonita-creek-gila-box-NOI-20210722.pdf.; Sixty-Day Notice of Endangered Species Act Violations, Agua Fria National Monument, CBD, May 9, 2022, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/blm-agua-fria-20220509-NOI-2.pdf.

occupied during the breeding season and habitat would need to be protected during the nonbreeding season, the majority of actions necessary to conserve the species would be required based on the listing of the western yellow-billed cuckoo."[70]

We document in this Notice that the BLM's seasonal grazing scheme leaves WFC and YBC critical breeding habitat fully impacted by cows at the onset of the breeding season. We demonstrate in this Notice that habitat components required by WFC and YBC, including understory vegetation, regenerating willow and successional riparian forest are removed, diminished, and precluded both long term and immediately prior to breeding seasons. The Incidental Take Statements in the 2012 and 2018 Biological Opinions do not address these impacts at any level, and grazing is managed solely on promised seasonal restrictions and utilization limits that are not only nonapplicable to the protection of endangered species, but appear to exist only on paper.

As our surveys have revealed, and as USFWS' own species experts have documented on public lands elsewhere in southeastern Arizona (for example on the Coronado National Forest),[71] use of this cow grazing utilization and rest-rotation scheme has resulted in widespread degradation, loss, and an impediment to essential woody riparian vegetation regeneration.

For example, on October 29, 2018, **USFWS' own species experts said** in the "Supplemental Summary of Concerns"[72] to the Coronado National Forest:

> "Grazing monitoring measures and standards do not accurately assess effects on cuckoo habitat, as well as other listed species' habitat."[73]
>
> "Management actions for cuckoos and other riparian or ephemeral drainage-dependent species: **we recommend** no spring capping (development), no development of water tanks that are likely to cause a decline in riparian habitat, **no grazing in riparian habitat (including ephemeral drainages with hackberry, oak, ash, sycamore, Arizona cypress, walnut, soapberry, etc.) where cuckoos breed at any time** …"[74]

On July 5, 2019, **USFWS' lead Yellow-billed Cuckoo species expert wrote**:

> "**We all discussed that the range grazing measures are inadequate to measure needs for sensitive/listed wildlife**."[75]

In November 2021, **USFWS' lead Yellow-billed Cuckoo species expert reported** in "Survey Results at Five Sites on the Coronado National Forest"[76]:

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[70] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20831.

[71] Sixty-Day Notice of Endangered Species Act Violations, Coronado National Forest, CBD, February 24, 2023, https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/coronado-NOI-20230224.pdf.

[72] Coronado National Forest (FS) Grazing Consultation Supplemental Summary of Concerns, U.S. Fish and Wildlife Service, October 29, 2018.

[73] *Id.,* page 1.

[74] *Id.,* page 3.

[75] Email from Sferra, Susan, to: Servoss, Jeff; RE: suggestion from Shawn [Sartorius] on grazing BO; July 5, 2019.

[76] Yellow-billed Cuckoo Protocol Survey Results at Five Sites on the Coronado National Forest, Arizona 2021, Draft, Susan Sferra, U.S. Fish and Wildlife Service, Arizona Ecological Services, November 2021.

"**The tree and shrub regeneration produced by this third wettest monsoon in history may help replenish some of the trees lost by drought and livestock (grazing, trampling, compacting soil, erosion, etc.) if enough moisture persists for survival and if protected from herbivory and trampling**. These infrequent and unpredictable periods of above average rainfall are important in recruiting trees needed by cuckoos and other riparian and xeroriparian dependent species for nest sites, cover, temperature amelioration, and food production. Protecting these new trees in years when rainfall and moisture are sufficient may be one of the most productive management actions that can ensure future woodland cover. **The tree and shrub regeneration in drainage bottoms has a greater probability of survival to maturity if livestock are prevented from accessing new growth**."[77]

On November 11, 2021, **USFWS' lead Yellow-billed Cuckoo species expert reported** in "Grazing Impacts Input"[78]:

"**As drought and climate change progress and livestock grazing continues, the riparian and xero-riparian shrub and tree recruitment and survival will diminish. Riparian and xero-riparian tree and shrub cover in drainage bottoms will diminish unless offsetting actions are taken**."[79]

"**Many studies document that removal of cattle grazing correlates with increases in plant productivity and abundance of breeding birds**, especially when riparian ecosystems are restored. Poessel et al. (2020)[80] is just one of the most recent studies."[81]

"**A single summer of above average monsoon rain does not compensate for years of drought and livestock impacts. Reducing/eliminating livestock access to ephemeral, intermittent, and perennial drainages following these rare periods of good rainfall will allow tree and shrub seedlings to grow and survive**."[82]

"**Perennial plant recruits can be killed by just a few cattle in drainage bottoms in the same season, regardless of time of year**."[83]

"**Livestock congregating in shaded areas and water sources compact the soil and lead to seed germination failure**. **Replacement habitat cannot develop in these compacted areas**."[84]

"**Livestock grazing and climate change both contribute toward reduced overstory and subcanopy cover** and/or conversion to more arid adapted tree species in ephemeral, intermittent, and perennial drainages. **We cannot control climate**

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[77] *Ibid.*

[78] Grazing Impacts Input, Susan Sferra, November 11, 2021.

[79] Id., page 1.

[80] Poessel, S.A., J. C. Hagar, P. K. Haggerty, and T. E. Katzner. 2020. Removal of cattle grazing correlates with increases in vegetation productivity and in abundance of imperiled breeding birds. Biological Conservation 241 (2020) 108378: 1-9. www.elsevier.com/locate/biocon.

[81] Grazing Impacts Input, Susan Sferra, November 11, 2021, page 1.

[82] *Id.,* page 2.

[83] *Ibid*

[84] *Ibid.*

change, but we can control livestock impacts from grazing, trampling, erosion, and soil compaction."[85]

"**Utilization rates for grazing often exceed standards for healthy ecosystems and should be adjusted**."[86]

The ultimate duty to protect and conserve listed species lies with the action agency. Incidental Take Statements provide for mitigation measures that adequately address impacts on listed species consistent with ESA's protective intent,[87] that are causally linked between the action and the take of the species,[88] and that provide for a take-triggering metric that is finite and measurable.[89] Consequently, an action agency's reliance on an inadequate, incomplete, or flawed biological opinion is arbitrary, capricious, and unlawful.[90] The May 21, 2012 and the August 20, 2018 Biological Opinions each contain an ITS that fails to protect WFC and YBC Critical Habitat and that fails to provide for mitigation measures that will adequately address impacts to these species consistent with ESA's protective intent.[91]

Beginning with WFC, the ITS in the May 21, 2012, Biological Opinion does not support the intent of the recovery plan for livestock management in critical habitat and thus does not provide for the recovery of the WFC. This failure occurs despite written concerns regarding the effects of livestock grazing on the affected species at issue. Livestock impacts to WFC are well-known and well-documented; in fact, an entire section of the WFC Recovery Plan deals exclusively with this issue (Appendix G, attached in Appendix A of this Notice). On page 1, the USFWS Technical Subgroup states:

> "A large body of literature related to livestock grazing and impacts to riparian habitats, the willow flycatcher, and other riparian birds was reviewed. Much of this literature came from more mesic areas of the West where ecological conditions and riparian recovery potential differ from the arid Southwest. Convincing evidence from within and outside of the flycatcher's range comes from exclosure studies such as the San Pedro River (Krueper 1992), where after major stressors – principally livestock grazing – were removed, the riparian habitat, channel morphology, and riparian bird fauna improved substantially within five years (Figures 1- 4). Although these studies lack experimental rigor, they provide evidence that in riparian habitats where livestock grazing is the major stressor, exclosure may be the quickest method of accomplishing recovery."[92]

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[85] *Id.,* page 3.

[86] *Ibid.*

[87] *Center for Biological Diversity v.* BLM, 698 F.3d 1101, 1115 (9th Cir. 2012).

[88] 50 C.F.R. 402.14(i)(1)(i); *Miccosukee Tribe of Indians of Fla. v. United States*, 566 F.3d 1257, 1275 (11th Cir. 2009).

[89] Center for Biological Diversity, et al., v. Donald H. Rumsfeld, Secretary of Defense, et al., CIV99-203 TUC ACM, *198 F. Supp. 2d 1139; 2002 U.S. Dist LEXIS 7419; 54 ERC (BNA) 1391; 32 ELR 20640*; April 8, 2002: "Mitigation measures must be reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards."

[90] *See, e.g.*, *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010).

[91] *Center for Biological Diversity v.* BLM, 698 F.3d 1101, 1115 (9th Cir. 2012)

[92] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico.

For obvious reasons, USFWS determined in the May 21, 2012, Biological Opinion regarding WFC that "the proposed action may affect the southwestern willow flycatcher and its designated critical habitat."[93] Despite concerns about livestock grazing and its effects on WFC habitat, the Incidental Take Statement for WFC is as follows:

> "We conclude that anticipated incidental take from the proposed action will be exceeded if one or more of the following conditions are met:
>
> 1. Unauthorized livestock on BLM lands in flycatcher habitat within the middle Gila River/lower San Pedro River areas are not removed as soon as possible during the nesting season, and this use occurs more than once during a nesting season.
>
> 2. Cowbird parasitism, as a result of livestock management, results in annual nest failure of more than 10 percent of southwestern willow flycatcher nests within the monitored flycatcher habitat in the middle Gila River/Upper San Pedro River areas."[94]

The 2012 Biological Opinion's Take Statement for WFC is problematic, because it is not related to the habitat impacts associated with BLM's authorized cow grazing action, and only (feebly) deals with unauthorized livestock and parasitism that only occur within the seasonal exclusion time (WFC nesting season). It has nothing to do with the guidelines and restrictions put in place for October through March cow grazing, and whether utilization limits are adhered to. The ITS is therefore ineffectual and provides no enforceable protection for WFC designated riparian Critical Habitat essential for long-term survival and recovery.

Thus, protection for WFC designations here depend solely on the ineffectual and unenforced 'Conservation Measures' listed in the 2012 Biological Opinion, which state:

> "2. Habitat Management Guidelines: The BLM will implement the following guidelines:
> a. Livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-September 1).
> b. Manage suitable flycatcher habitat so that suitable characteristics are not eliminated or degraded.
> c. Manage riparian areas to allow natural regeneration and, therefore, allow those sites with potential to progress into suitable habitat."[95]

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[93] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion").

[94] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion") page 103.

[95] Id., page 16.

With this, USFWS seems assured that:

> "The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous paragraph, it is unlikely that any effects to the PCEs will significantly reduce the current or future suitability for flycatcher in the Middle Gila River/San Pedro River MU. The BLM will manage the allotments that have or are near critical habitat to meet both Standard 1 (uplands) and Standard 2 (riparian). To accomplish this, the BLM will exclude livestock grazing in flycatcher habitat on BLM lands from April 1 to September 1 (the breeding season and most of the growing season), will manage livestock to enhance the survival of willow and cottonwood seedlings, and manage the uplands to maintain vegetative cover. These actions will meet the intent of the recovery plan for livestock management for flycatcher habitat and thus provide for the recovery of the flycatcher."[96]

Based on our 2022 surveys and as our photographs illustrate, utilization is beyond authorized allowances, soils are disturbed and degraded, regeneration of new riparian tree cohorts is nonexistent, erosion is prevalent, and seasonal grazing restrictions are unenforced. These observations indicate that grazing is a significant stressor in this ecosystem. Cows in these allotments have contributed to loss of habitat and reduced productivity of habitat through overgrazing and harassment, including potential displacement and reduced survivorship because of cow grazing.

Therefore, the current status of cow management is not in line with the intent of the WFC recovery plan and is not providing for the recovery of the flycatcher. According to the table on page 26 of Appendix G of the WFC Recovery Plan, no grazing should commence in these WFC designations as they reasonably fit the definition of 'restorable or regenerating' especially in combination with recent fires. For example,

> "Restorable" means riparian systems that are degraded but have the appropriate hydrological and ecological setting to be restored to suitable flycatcher habitat, and could be restored with reasonable costs and actions. Lack of regeneration due to grazing is one factor contributing to habitat degradation; conditions in each habitat should include adequate plant regeneration to ensure habitat sustainability into the future. At these sites, flycatcher habitat is precluded largely or solely by livestock impacts. "Restorable" habitats are those that would be suitable if not for grazing, alone or in combination with other major stressors. This means cessation of grazing is a necessary, but not necessarily a sufficient action."[97]

What's worse, BLM has formally requested to be relieved of their flycatcher habitat mapping obligations and to forego brown-headed cowbird management and control.[98]

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[96] Id., page 75.

[97] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Page 26.

[98] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion"), page 1.

Ironically, USFWS stated in the August 20, 2018, Biological Opinion that there is an "inability of native vegetation to regenerate under altered hydrological conditions" in this area. This statement alone should preclude the use of this land as a cow pasture, as cow grazing furthers the degradation of this already impaired riparian zone. Removal and alteration of riparian vegetation to accommodate cows has adversely affected southwestern willow flycatchers via habitat loss and degradation. Reinitiation of consultation must follow.[99]

In the August 20, 2018 Biological Opinion regarding YBC, USWFS states:

> "Moreover, the A Diamond, Battle Axe, LEN, Rafter 6, Teacup, and Whitlow allotments are meeting or making significant progress towards Standards 1, 2, and 3 (see Table 5 in the BA, p. 48). These management practices reduce the likelihood of measurable effects on yellow-billed cuckoos, their habitat, and their prey base. We do, however, anticipate there will be modest, residual (i.e. not fully minimized) effects to riparian habitat for locations where the applicable standards have not yet been fully achieved, either through impacts to young cottonwood/willow vegetation during winter grazing and/or understory herbivory within mesquite bosqués. The BA states that these effects will occur in only 1,240 ac (502 ha) of otherwise continuous riparian habitat. The overall occupancy of the area by yellow-billed cuckoos, and the ability for the area to support the species' prey base should experience no detectable changes over the short term, as existing riparian vegetation persists. We are concerned, however, with one to two-year changes in riparian recruitment as young vegetation is subject to herbivory which could lead to diminished, longer-term (i.e., decadal) recruitment of riparian vegetation to replace habitat that has senesced."[100]

and,

> "our primary concerns are with grazing during the native riparian growing season, encompassed by Brock's (1994) bud break, leaf expansion, mature leaves, flowering, fruit development, and seed dispersal stages. Fremont cottonwood bud break begins in late February and concludes in early March. Seed dispersal from these existing cottonwood trees occurs in approximately mid to late May"… "It is therefore likely that winter-season grazing (October 1 to March 30) occurs during times when riparian trees are still actively growing in the late autumn to early winter, prior to freeze-driven cessation of evapotranspiration and subsequent leaf drop, and in early spring, during recruitment and bud-break." [101]

Following this discussion, the ITS for YBC is as follows:

> "Amount or Extent of the Take

[99] 50 CFR 402.16.

[100] *Id.,* page. 9-10.

[101] *Ibid.*

> As stated above, we cannot be reasonably certain that the proposed action will harm or harass yellow-billed cuckoos occupying the action area and thus, we do not anticipate that individuals of the species will be incidentally taken."[102]

First, this ITS contains no protection of YBC or the habitat features required for its recovery. Once a species is listed and critical habitat designated, Section 7 of the ESA requires each federal agency, in consultation with a federal wildlife agency (in this case, USFWS), to ensure that any 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**.[103] YBC critical habitat was finalized in 2021. Reinitiation of consultation must follow.[104]

Secondly, USFWS admits that in the 7 allotments at issue here, impacts from grazing are "not fully minimized". Our photographs of designated Critical Habitat presented in this Notice not only corroborate this sentiment, but illustrate widespread, significant cow impacts. This information represents new information revealing that BLM-authorized cow grazing is harming WFC and YBC Critical Habitat to an extent not previously considered. Reinitiation of consultation must follow.[105]

Thirdly, the USFWS bases its analysis of grazing impacts to YBC on the BLM's claim that the allotments at issue "are meeting or making significant progress towards Standards 1, 2, and 3", where Standard 1 describes upland and soil conditions, Standard 2 describes riparian systems and streamflow, and Standard 3 is concerned with desired resource conditions.[106] Only Standard 3 is concerned at all with wildlife habitat. For instance, according to BLM, Desired Plant Community objectives… "detail a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, DPC objectives will be used as an indicator of ecosystem function and rangeland health."[107] Riparian conditions illustrated in this Notice represent an obvious failure to assure habitat for endangered, threatened, and sensitive species. It is clear from examining the photos presented in this Notice that the Middle Gila is a degraded ecosystem. It is defined by altered flow regimes, invasive species, and widespread significant cow impacts. Our observations represent new information revealing that BLM-authorized cow grazing is harming WFC and YBC Critical Habitat to an extent not previously considered. Reinitiation of consultation must follow.[108]

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[102] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion"), page 13.

[103] 16 U.S.C. § 1536(a)(2).

[104] 50 CFR 402.16.

[105] 50 CFR 402.16.

[106] Arizona Standards for Rangeland Health and Guidelines for Grazing Administration. U.S. Department of The Interior Bureau of Land Management Arizona. 1997. Pages 5-7.

[107] Draft East SPRNCA Complex Land Health Evaluation pg. 15.

[108] 50 CFR 402.16.

Fourthly, USFWS cites Brock (1994) as a guidepost for describing riparian tree phenology in the action area. The problem here is that Brock (1994) examined study areas at elevations between 1085-1402 meters, and trees at lower elevations can have different (earlier) phenology. The elevation of Cochran, AZ, in the middle of the Middle Gila action area, is 500 meters and the elevation of Florence, AZ, just downstream, is 469 meters. This is more akin to the elevation of the Hassayampa area (250 meters) where, according to Stromberg (1997), native cottonwood trees germinate beginning in March.[109]

Thus, the livestock exclusion time here does not actually encompass winter/spring germination of native riparian trees, leaving sprouts and seedlings vulnerable to consumption by cows. Highly palatable and protein rich, cows selectively browse Fremont cottonwood seedlings and saplings[110, 111, 112] and can wipe out entire seedling reestablishment sites in a single week through hoof action alone.[113] This negative effect of cow grazing would go unobserved in the allotments at issue. Federal agencies must "use the best scientific and commercial data available" in assessing a proposed action's impact on a protected species.[114]

Apart from complete removal or destruction of sprouts and seedlings, selective browsing on Fremont cottonwood seedlings causes young cohorts of trees to lose their height advantage over invasive salt cedar (*Tamarisk*). Additionally, reduction in shoot height may reduce a seedling's ability to survive deposition of sediment during flood events. As was observed at Date Creek, which is grazed/browsed by cows from November to March,[115] Stromberg (1997) proposed that on cow-grazed rivers, recruitment should be protected year-round from livestock, for multiple consecutive years, to allow seedlings to grow past browse height. Indeed, no young cohorts of riparian trees were noted during our surveys. Thus, we are not observing 'riparian habitat in a dynamic successional riverine environment'[116] and this is due to cow grazing which 1) occurs in part during native tree germination periods, and 2) is governed by ineffective and inappropriate, unmonitored utilization standards as well as unenforced seasonal restrictions.

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[109] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. The Great Basin Naturalist, pp.198-208.

[110] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[111] Martin, S.C., 1979. Evaluating the impacts of cattle grazing on riparian habitats in the National Forests of Arizona and New Mexico. In *Proceedings of the Forum-Grazing and Riparian/Stream Ecosystems. Trout Unlimited Inc., Denver, Colo* (pp. 35-38).

[112] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. *The Great Basin Naturalist*, pp.198-208.

[113] Kalischuk, A.R., Rood, S.B. and Mahoney, J.M., 2001. Environmental influences on seedling growth of cottonwood species following a major flood. *Forest Ecology and Management*, *144*(1-3), pp.75-89.

[114] 16 U.S.C. § 1536(a)(2).

[115] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. The Great Basin Naturalist, pp.198-208.

[116] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion") page 24.

The deck is already stacked against native riparian tree recruitment in this area because 1) natural flows are altered due to the Coolidge Dam upstream, 2) non-native *Tamarix* trees are abundant in the area, 3) climate change, drought and their negative effects on native ecosystems are steadily advancing, and 4) recent fires in the area have eliminated mature, reproductive native trees. To allow livestock grazing along the banks of the Middle Gila is not a justifiable additional stressor on this ecosystem according to the best available science, especially considering the significant damages we report in this Notice and especially when ecosystems are managed by unmonitored and unenforced cow grazing metrics.

The 2012 and 2018 Biological Opinions are inadequate and illegal because 1) BLM's grazing management blatantly disregards prioritizing conservation of habitat features required for threatened and endangered species recovery (in the context of WFC and YBC, this means maintaining an herbaceous understory and fostering riparian tree recruitment and succession), and 2) USFWS ultimately disregards their own written concerns about the grazing program for the allotments at issue, referenced above regarding WFC and as stated in the April 21, 2021 designation of critical habitat for yellow-billed cuckoos, that breeding habitat "would need to be protected during the nonbreeding season."[117]

On top of this, many of the critical habitat designations in the Middle Gila allotments have recently burned, causing the loss of mature, reproductive native riparian trees. Grazing in recovering burned areas ensures propagation of non-native, invasive species and further environmental degradation.[118]

[117] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20831.

[118] Keeley, J.E., 2006. Fire management impacts on invasive plants in the western United States. *Conservation Biology*, *20*(2), pp. 375-384.

Burned WFC and YBC critical habitat on the Myers allotment. 33.086593, -111.199339. December 2, 2022.

Unauthorized cow grazing in burned critical habitat during WFC breeding season on the border of Myers and Whitlow allotments. 33.086323, -111.201928. April 6, 2022.

The law prohibits any action that reduces "appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." The law also prohibits any action causing "direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the

conservation of a listed species." Our surveys demonstrate damage to water and riparian vegetation from livestock grazing in designated Critical Habitat. The widespread adverse impacts caused by cow grazing that we observed and documented occurs as the result of BLM employees' consistent callous disregard for the protection of Public Lands, of rare wetland habitat, and of endangered species protection laws.

When new information becomes available, or when take has been exceeded, agencies, such as the BLM and USFWS, who fail to reinitiate consultation violate 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14. Besides violating the ESA, managing critical habitat solely through unenforced seasonal restrictions and inappropriate cow grazing metrics also violates the Administrative Procedure Act, a requirement that federal decisions are not "arbitrary, capricious, or an abuse of discretion."[119] Revised Biological Opinions need to be initiated that meaningfully incorporate the information presented in this Notice, the best available science, and the intent of the WFC Recovery Plan.

With this new information, continued failure by the BLM and USFWS to reinitiate consultation on these allotments violates the law.[120] Reinitiation of consultation must take place.[121]

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

In addition to the obligation to avoid jeopardizing species or destroying or adversely modifying their critical habitat under Section 7(a)(2) of the ESA, Section 7(a)(1) imposes an obligation on all federal agencies, in consultation with the USFWS, to "carry[] out programs for the conservation" of listed species. 16 U.S.C. § 1536(a)(l). 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); and Pyramid Lake Paiute Tribe, 898 F.2d at 1416-17 (noting that federal agencies have "affirmative obligations to conserve under [S]ection 7(a)(1)"). "Conserve" is defined by the ESA 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 [in the ESA] are no longer necessary." 16 U.S.C § l 536(a)(1).

[119] 5 USC § 706(2)(A).

[120] 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

[121] 16 U.S.C. § 1532, 50 CFR § 17.21, 16 U.S.C. § 1536(b)(4).

Not only does BLM manage designated critical habitat through inappropriate cow grazing metrics and prioritization of cow grazing, but they have foregone programs to help foster conservation and recovery of WFC.[122]

COW GRAZING IN ARID LANDS

Livestock grazing causes declines in diversity, abundance, and species composition of riparian-obligate wildlife communities from direct and indirect threats, including 1) declines in the structural richness of the vegetative community; 2) losses or reductions of the prey base; 3) increased aridity of habitat; 4) loss of cover and protection from predators; and 5) a rise in water temperatures to levels lethal to larval stages of amphibian and fish development.[123] Specific attributes of ecosystems such as composition, function, and structure, have been documented as being altered by livestock grazing through a variety of means, including 1) decreasing the density and biomass of individual species, reducing species richness, and changing biological community organization; 2) interfering with nutrient cycling and ecological succession; and 3) changing vegetation stratification, contributing to soil erosion, and decreasing availability of water to biotic communities.[124]

Cows remove bank-line and herbaceous ground cover vegetation that provides structure, cover, and foraging opportunities for native wildlife. Grazing livestock decrease riparian vegetation, altering plant species composition and causing changes to plant root structures and overall biomass.[125] Reduced herbaceous ground cover vegetation leads to accelerated soil loss due to increased exposure of soils to downpour events and reduced sediment filtering capabilities of the vegetation.[126] Litter is reduced by trampling and churning into the soil, thus reducing cover for soil, plants, and wildlife.[127] In arid lands, this causes increased ground and soil temperatures, which affects the ability of native plants to recolonize and regenerate. Livestock grazing exacerbates desertification due to a loss in soil fertility from erosion and increases gaseous emissions spurred by a reduction in vegetative ground cover, particularly at lower elevations.[128]

Hoof action causes loss of cryptobiotic soil crusts and increases soil compaction, erosion, and gullying.[129] The compaction of soil by livestock hooves results in decreased rainfall

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[122] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion"), page 1.

[123] *Ibid*.

[124] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, 8(3), pp. 629-644.

[125] Vallentine, J. F. 1990. Grazing management. San Diego, CA, USA: Academic Press. 533 pp.; Popolizio, C.A., Goetz, H. and Chapman, P.L., 1994. Short-term response of riparian vegetation to 4 grazing treatments. *Rangeland Ecology & Management/Journal of Range Management Archives*, *47*(1), pp. 48-53.

[126] Erman et al. 1977, Osborne, L.L. and Kovacic, D.A., 1993. Riparian vegetated buffer strips in water-quality restoration and stream management. *Freshwater biology*, *29*(2), pp. 243-258.

[127] Schulz, T. T., & Leininger, W. C. (1990). Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management, 43(4), 295-299.

[128] Schlesinger, W.H., Reynolds, J.F., Cunningham, G.L., Huenneke, L.F., Jarrell, W.M., Virginia, R.A. and Whitford, W.G., 1990. Biological feedbacks in global desertification. *Science*, *247*(4946), pp. 1043-1048.

[129] Harper, K.T. and Marble, J.R., 1988. A role for nonvascular plants in management of arid and semiarid rangelands. In *Vegetation science applications for rangeland analysis and management* (pp. 135-169).; Springer, Dordrecht., Orodho, A.B.,

infiltration (meaning less water is available for plants and more surface erosion may occur), decreased soil moisture recharge, increased runoff, increased erosion, increased stream sedimentation, increased stream water temperature, and changes in channel form.[130] An experiment in Arizona specifically documented how losses in vegetation have led to increases in interrill [soil movement that occurs when raindrops strike exposed soil] areas, decreases in runoff infiltration, and the possibility of greater susceptibility to frost action.[131]

As soil compaction from livestock reduces water absorption for plants, it leads to conditions that make it more difficult for roots to grow and spread.[132] A review of grazing impacts on hydrological impacts concluded that grazing at any intensity reduced water infiltration.[133] Water run-off experiment tests showed that moderate grazing areas had seven times the runoff compared to lightly grazed areas, and heavily grazed areas had ten times the runoff as lightly grazed areas.[134] Thus, soil compaction reduces water infiltration and the "sponge" effect of riparian areas. The loss of sponge effects can lead to a reduction in late season flows. Trampling by hooves also affects seed production of plants.[135]

Livestock grazing causes long-term changes to entire watersheds and their functions.[136] Cows grazing alters magnitude and timing of organic and inorganic inputs into the stream. Grazing results in increases in fecal contamination, changes in water temperatures due to removal of vegetation, reduction of stream shore water depth, changes in timing and magnitude of stream flow events from changes in watershed vegetative cover, and an increase in stream temperature.[137] These alterations in stream conditions can rapidly affect the entire food chain.

Trlica, M.J. and Bonham, C.D., 1990. Long-term heavy-grazing effects on soil and vegetation in the four corners region. *The Southwestern Naturalist*, pp.9-14.; Schlesinger, W.H., Reynolds, J.F., Cunningham, G.L., Huenneke, L.F., Jarrell, W.M., Virginia, R.A. and Whitford, W.G., 1990. Biological feedbacks in global desertification. *Science*, *247*(4946), pp. 1043-1048.; Bahre, C.J., 1991. *A legacy of change: historic human impact on vegetation in the Arizona borderlands*. University of Arizona Press.

[130] Schulz, T. T., & Leininger, W. C. (1990). Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management, 43(4), 295-299.; Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp. 629-644.; Ohmart, R.D., 1996. Ecological condition of the East Fork of the Gila River and selected tributaries: Gila National Forest, New Mexico. *General Technical Report RM.*, *272*, p. 312.

[131] Abrahams, A.D., Parsons, A.J. and Wainwright, J., 1995. Effects of vegetation change on interrill runoff and erosion, Walnut Gulch, southern Arizona. *Geomorphology*, *13*(1-4), pp.37-48.

[132] Boarman, W.I., 2002. Threats to desert tortoise populations: a critical review of the literature.

[133] Gifford, G.F. and Hawkins, R.H., 1978. Hydrologic impact of grazing on infiltration: a critical review. *Water Resources Research*, *14*(2), pp.305-313.

[134] Boarman, W.I., 2002. Threats to desert tortoise populations: a critical review of the literature.

[135] Brooks, M.L., 1995. Benefits of protective fencing to plant and rodent communities of the western Mojave Desert, California. *Environmental Management*, *19*, pp.65-74.

[136] Armour, C., Duff, D. and Elmore, W., 1994. The effects of livestock grazing on western riparian and stream ecosystem. *Fisheries*, *19*(9), pp. 9-12.; Belsky, A.J., Matzke, A. and Uselman, S., 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and water Conservation*, *54*(1), pp. 419-431.; Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp. 629-644.; Poff, B., Koestner, K.A., Neary, D.G. and Henderson, V., 2011. Threats to riparian ecosystems in Western North America: an analysis of existing literature 1. *JAWRA Journal of the American Water Resources Association*, *47*(6), pp. 1241-1254.

[137] Platts, W.S., 1990. Managing fisheries and wildlife on rangelands grazed by livestock: a guidance and reference document for biologists.; Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.

Unauthorized cows on grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.112881, -111.098014. April 5, 2022.

RIPARIAN TREE REGENERATION

Grazing has long been recognized as a detriment to the reproduction of riparian trees.[138,139,140,141,142,143,144,145,146,147] For example, cows interfere directly with the cottonwood tree's life cycle, and thus cow presence can directly preclude cottonwood recruitment and forest regeneration.[148,149,150,151] Such impacts of cow grazing on riparian vegetation are magnified in

[138] Crouch, G.L., 1979. Long-term changes in cottonwoods on a grazed and an ungrazed plains bottomland in northeastern Colorado (Vol. 370). US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

[139] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[140] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[141] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[142] Carothers, S.W., 1977. Importance, preservation, and management of riparian habitats: an overview. In *Importance, preservation, and management of riparian habitats: a symposium. USDA Forest Service General Technical Report RM-43* (pp. 2-4).

[143] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In *California Riparian Systems* (pp. 97-108). University of California Press.

[144] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.

[145] Kauffman, J.B., Krueger, W.C. and Vavra, M., 1983. Effects of late season cattle grazing on riparian plant communities. *Rangeland Ecology & Management/Journal of Range Management Archives*, *36*(6), pp.685-691.

[146] Carothers, S.W., 1977, July. Importance, preservation, and management of riparian habitats: an overview. In *Importance, preservation, and management of riparian habitats: a symposium. USDA Forest Service General Technical Report RM-43* (pp. 2-4).

[147] Ames, C.R., 1977. in Riparian Management: Grazing'. In *Importance, Preservation and Management of Riparian Habitat: A Symposium, Tucson, Arizona, July 9, 1977* (Vol. 43, p. 49). Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

[148] Ames, C.R., 1977. in Riparian Management: Grazing'. In *Importance, Preservation and Management of Riparian Habitat: A Symposium, Tucson, Arizona, July 9, 1977* (Vol. 43, p. 49). Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

[149] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[150] Kalischuk, A.R., Rood, S.B. and Mahoney, J.M., 2001. Environmental influences on seedling growth of cottonwood species following a major flood. *Forest Ecology and Management*, *144*(1-3), pp.75-89.

[151] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. *The Great Basin Naturalist*, pp.198-208.

arid and semi-arid regions.[152,153] Many bird species associated with mature cottonwood trees are rare or endangered in the Southwest.[154,155] Loss of riparian habitat regeneration caused by poorly managed grazing is acknowledged by USFWS as a prominent threat to WFC and YBC.[156]

Yellow-billed Cuckoo have disappeared throughout most of their former range due to habitat loss.[157,158] Southeastern Arizona now represents one of the strongholds for this declining species. For example,

> "The cuckoo is now very rare in scattered drainages in western Colorado, Idaho, Nevada, and Utah, with single, nonbreeding birds most likely to occur (79 FR 48548, 79 FR 59992). The largest remaining breeding areas are in southern and central California, Arizona, along the Rio Grande in New Mexico, and in northwestern Mexico (79 FR 59992). In Arizona, the species was a common resident in the (chiefly lower) Sonoran zones of southern, central, and western Arizona; scarce in the north-central part of the state; and very rare in the northeast (Phillips et al. 1964). In Arizona, the cuckoo now nests primarily in the central and southern parts of the state."[159]

According to USFWS,

> "the primary threat to the cuckoo is loss or fragmentation of high-quality riparian habitat suitable for nesting (USFWS 2014a, b). Habitat loss and degradation results from several interrelated factors, including alteration of flows in rivers and streams, mining, encroachment into suitable habitat from agricultural and other development activities on breeding and wintering grounds, stream channelization and stabilization, diversion of surface and ground water for agricultural and municipal purposes, livestock grazing,

[152] Raleigh, R.F., 1979. Grazing and the riparian zone: Impact and management perspectives. In Strategies for Protection and Management of Floodplain Wetlands and Other Riparian Ecosystems: Proceedings of the Symposium, December 11-13, 1978, Callaway Gardens, Georgia (No. 12, p. 263). Department of Agriculture, Forest Service.

[153] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation biology, 8(3), pp.629-644.

[154] Carriony, N.B. and Turner, R.M., 1977. Inventory of Riparian Habitats'. In Importance, Preservation, and Management of Riparian Habitat: A Symposium, Tucson, Arizona, July 9, 1977 (Vol. 43). Rocky Mountain Forest and Range Experiment Station, Forest Service, US Department of Agriculture.

[155] Engel-Wilson, R.W. and Ohmart, R.D., 1978. Floral and Attendant Faunal Changes on the Lower Rio Grande Between Fort Quitman and Presidio, Texas.

[156] Designation Of Critical Habitat For The Western Distinct Population Segment Of The Yellow-Billed Cuckoo Proposed Rules, Department of The Interior Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48555.

[157] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021.

[158] Biological Opinion on Ongoing Grazing on the Coronado National Forest, Graham, Cochise, Pima, Pinal, and Santa Cruz Counties, Arizona and Hidalgo County, New Mexico. AESO/SE, 2-21-98-F-399, 2-21-98-F-399R1, 02EAAZ00-2019-F-0867, September 30, 2021, p. 174.

[159] Diebolt, S., Chief, A.B. and Diebolt, D.M., 2018. Fish and Wildlife Service Arizona Ecological Services Office.

> wildfire, establishment of nonnative vegetation, drought, and prey scarcity due to pesticides."[160]

Also, according to USFWS,

> "reduction in riparian habitat (including mesquite bosques) in Arizona has been well documented and western yellow-billed cuckoos are no longer found in areas where riparian habitat no longer exists. Yet, remaining habitat within Arizona remains an important stronghold for breeding western yellow-billed cuckoos. As part of the core of the DPS, habitat in Arizona needs to be conserved to enable western yellow-billed cuckoos to produce young that may eventually disperse to other parts of the DPS's range."[161]

According to USFWS, "where tree regeneration and survival are lacking, suitable cuckoo habitat may cease to exist or may support fewer cuckoos when mature trees die."[162] In addition, "humidity, important for prey production and cuckoo nesting in southeastern Arizona, will decline and temperature and evapotranspiration will increase as habitat declines and fragmentation increases. These factors may reach a threshold in which cuckoos may no longer breed or may breed in reduced densities in some reaches."[163]

Putting this into context, it has been estimated that within the past one hundred years, 95 percent of riparian habitat in the West has been destroyed and this destruction is ongoing.

Cow impacts are often most severe in riparian areas because available water, shade and forage causes cattle to congregate in riparian areas 5-30 times longer than in adjacent uplands.[164] Without mechanisms of riparian exclusion, cows degrade riparian conditions by removing vegetation, preventing tree establishment, compacting soil, increasing surface runoff, and

[160] Biological Opinion on Ongoing Grazing on the Coronado National Forest, Graham, Cochise, Pima, Pinal, and Santa Cruz Counties, Arizona and Hidalgo County, New Mexico. AESO/SE, 2-21-98-F-399, 2-21-98-F-399R1, 02EAAZ00-2019-F-0867, September 30, 2021, p. 174.

[161] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20813.

[162] April 28, 2016, Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona, p. 244.

[163] *Ibid.*

[164] Skovlin, J.M. 1984. Impacts of grazing on wetlands and riparian habitat: a review of our knowledge. p. 1001-1103. In: Developing strategies for range management. Westview Press, Boulder, CO.

reducing water infiltration and bank stability.[165,166,167,168,169] In combination, such landscape alterations can eliminate and prevent the regeneration of native riparian plant communities, and can foster establishment of invasives.[170,171,172,173] Riparian zones suffering from long-term grazing effects are more susceptible to extreme flooding events resulting in accelerated rates of channel incision and a lack of sedimentation required to support sprouting trees.[174] This is certainly a problem along the Middle Gila. Although we failed to observe young cohorts of native riparian trees during our surveys, appropriate scour zones still occur and could be available for colonization by pioneer plant species if they are protected from cows and managed to allowed establishment of spring-germinating native trees.

The 2014 Yellow-billed Cuckoo ESA listing clearly states that "managing grazing so that native riparian trees and shrubs will regenerate on a regular basis is especially beneficial."[175] Unfortunately, managing grazing for regeneration is not the case in the Middle Gila allotments. As illustrated in this Notice, unauthorized cows were observed concentrated in riparian zones during the growing season, removing riparian vegetation down to the roots and leaving bare ground and dust-bowl conditions. Such impacts, as demonstrated in this Notice, reasonably fit the definition of overgrazing or poorly-managed grazing- especially in Critical Habitat designations that have different management priorities- and are causing direct and indirect harm to YBC populations by removing habitat structure and associated prey base.

To make matters worse, cow grazing impacts on the Gila District are measured using livestock forage standards with no ecological context.[176] Structural habitat requirements for

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[165] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation biology, 8(3), pp.629-644.

[166] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[167] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. Desert Plants.

[168] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[169] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[170] Dreesen, D., Harrington, J., Subirge, T., Stewart, P. and Fenchel, G., 2002. Riparian restoration in the Southwest: species selection, propagation, planting methods, and case studies. In: Dumroese, RK; Riley, LE; Landis, TD, technical coordinators. National proceedings: forest and conservation nursery associations-1999, 2000, and 2001. Proceedings RMRS-P-24. Ogden, UT: US Department of Agriculture Forest Service, Rocky Mountain Research Station. p. 253-272, 24.

[171] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[172] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation biology, 8(3), pp.629-644.

[173] Bock, Carl E., Victoria A. Saab, Terrell D. Rich, and David S. Dobkin. "Effects of livestock grazing on neotropical migratory landbirds in western North America." In: Finch, Deborah M.; Stangel, Peter W.(eds.). Status and management of neotropical migratory birds: September 21-25, 1992, Estes Park, Colorado. Gen. Tech. Rep. RM-229. Fort Collins, Colo.: Rocky Mountain Forest and Range Experiment Station, US Dept. of Agriculture, Forest Service: 296-309 229 (1993): 296-309.

[174] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[175] *Ibid.*

[176] According to the Interagency Technical Reference (1999), utilization measures the proportion or degree of current year's forage production that is consumed or destroyed. Utilization may refer either to a single plant species, a group of species, or the vegetation as a whole.

wildlife, including imperiled nesting birds like WFC and YBC, cannot be assessed or measured by utilization or stubble height measurements, according to rangeland experts. For example, according to a 2007 collaborative rangeland monitoring guide entitled '*Principles of obtaining and interpreting utilization data on rangelands',* "some types of residual cover guidelines (e.g., "structure" requirements or visual obstruction estimates for upland bird nesting) are neither utilization nor stubble height measurements."[177]

There are many impacts of cow grazing that utilization or stubble measurement do not capture, including cow use of preferentially selected and highly palatable forage species known as "ice cream species." This term has been used for exceptionally palatable plants since at least the 1930's.[178] According to the Arizona Grazing Lands Conservation Association's "Guide to Rangeland Monitoring and Assessment," an "ice cream species" is "an exceptionally palatable species sought and grazed frequently by livestock or game animals. Such species are often overutilized even under proper grazing."[179] Highly palatable and protein rich, cows selectively browse Fremont cottonwood seedlings and saplings[180, 181,182] and can wipe out entire seedling reestablishment sites in a single week through hoof action alone.[183]

In measuring utilization, Holecheck (1988) states "one to three plant species are used as key species. These plants should be abundant, productive, and palatable. They should provide the bulk of the forage for the grazing animals within the pasture. The ice-cream plants are not used because of their scarcity and low resistance to grazing."[184] Generally, when the key species and key area are considered properly used, the entire pasture is considered correctly used.[185] However, this conclusion is flawed and breaks down in describing riparian systems, where the highly palatable 'ice cream' species are the next cohorts of riparian trees, the very seedlings that ensure regeneration of the riparian forest itself. According to Holechek et al. (2001), "under the key-species approach, secondary

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[177] Smith, L., Ruyle, G.B., Maynard, J., Barker, S., Meyer, W., Stewart, D., Coulloudon, B., Williams, S. and Dyess, J., 2007. *Principles of obtaining and interpreting utilization data on rangelands*. University of Arizona, Cooperative Extension Serv.

[178] Standing, A.R., 1938. Uses of Key Species, Key Areas and Utilization Standards in Range Management. *Ames Forester*, *26*(1), p.3.

[179] Smith, L., Ruyle, G., Dyess, J., Meyer, W., Barker, S., Lane, C.B., Williams, S.M., Maynard, J.L., Bell, D., Stewart, D. and Coulloudon, A., 2012. Guide to rangeland monitoring and assessment, basic concepts for collecting, interpreting and use of rangeland data for management planning and decisions. Arizona Grazing Lands Conservation Association, Tucson, Arizona, USA.

[180] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[181] Martin, S.C., 1979. Evaluating the impacts of cattle grazing on riparian habitats in the National Forests of Arizona and New Mexico. In *Proceedings of the Forum-Grazing and Riparian/Stream Ecosystems. Trout Unlimited Inc., Denver, Colo* (pp. 35-38).

[182] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. *The Great Basin Naturalist*, pp.198-208.

[183] Kalischuk, A.R., Rood, S.B. and Mahoney, J.M., 2001. Environmental influences on seedling growth of cottonwood species following a major flood. *Forest Ecology and Management*, *144*(1-3), pp.75-89.

[184] Holechek, J.L., 1988. An approach for setting the stocking rate. Rangelands, 10(1), 10-14.

[185] *Ibid.*

forage species ... will receive light use (10% to 25%), key species ... will receive moderate use (30% to 40%), and the ice-cream plants ... may be used excessively (over 40%)."[186]

According to Holechek, "even under light grazing intensities, areas around watering points, salt grounds, valley bottoms, and driveways will often be intensely used. These preferred areas are referred to as "sacrifice areas" because setting stocking rates for proper use of these areas will result in underuse of the bulk of the pasture."[187] Here, it is directly implied that watering areas receive *improper* use, which is exactly what we tend to observe in our surveys. In many cases, the designated riparian Critical Habitat *is* the watering point or valley bottom where cows concentrate, and therefore is the "sacrifice area"! Again, these are not monitored. Monitoring efforts are focused ¼ to 1 mile away from these sacrifice areas, so that the true environmental impact of cows simply goes unrecorded. There should be no "sacrifice areas" in designated critical habitat. Full cow exclusion is warranted in these situations, especially when the habitat is impaired to the degree that we show in this Notice.

Besides 'utilization' being an inappropriate metric to manage endangered species, it appears there has been a complete lack of adherence to utilization limits on the Middle Gila allotments, and likewise no monitoring of cow consumption or trampling of cottonwood and willow seedlings. Additionally, it appears there is no monitoring of herbaceous cover pre- and post-monsoon, tree and shrub regeneration and growth, tree cohorts and age classes, and species composition. Such a management system, or lack of management, would not allow germination and critical growth periods of riparian trees to advance in size past the reach of cows. This would result in significant impairment of critical habitat to the point that its function as designated WFC and YBC critical foraging and breeding habitat is diminished.

Diminished riparian vegetation, as observed throughout the BLM-managed Middle Gila grazing allotments, negatively affects streamflow processes and impacts abundance and distribution of fine sediment deposited on floodplains, which is critical for the development, abundance, distribution, maintenance, and germination of trees in the riparian zone that become future habitat.[188] Riparian vegetation and intact grasses are required to capture sediment during rainy seasons that becomes seedbeds for germination and growth of the riparian vegetation upon which WFC and YBC depend. Significantly grazed riparian zones fail to capture sediment and instead begin to erode. This disruption of stream flow processes ultimately leads riparian forests to senesce, unable to sustain recruitment of the new trees and varied vegetative structure required for WFC and YBC nesting and foraging.[189] Therefore, grazing of the severity that we have observed on the Gila District has immediate short-term impacts on and WFC and YBC fitness as well as long-term impacts that cause the loss of riparian gallery forest.

Wohner et al. (2021) state explicitly that "specific management for early successional stage forest is needed to increase the probability of Cuckoo nesting and nest productivity" and "to encourage high quality Cuckoo nesting habitat, specific management practices may need to

[186] Holechek, J.L., R.D. Piper, and C.H. Herbel. 2001. Range Management: Principles and Practices. Prentice Hall, Upper Saddle River, N.J.

[187] Holechek, J.L., 1988. An approach for setting the stocking rate. Rangelands, 10(1), 10-14.

[188] *Ibid*., page 48552.

[189] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, Department of The Interior Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48552.

be adopted to encourage regeneration of young forest." [190] Not only does BLM's Gila District lack even a monitoring program with this management objective in mind, but we once again demonstrate in this Notice that current BLM cow management is preventing recovery of threatened and endangered species by blatantly prioritizing cows and practicing hands-off cow management with no enforcement of rules. The images of widespread livestock disturbances presented in this NOI should raise concern about widespread destruction and future condition of WFC and YBC habitat along the Middle Gila.

SEASONAL GRAZING IS NOT PROTECTIVE

For the seven BLM-managed allotments at issue in this Notice[191], cow grazing in WFC and YBC Critical Habitat is governed by cow forage utilization standards and seasonal restrictions that are 1) inadequate for the protection of threatened and endangered riparian species, and 2) unmonitored and unenforced. By allocating vital habitat constituents to cows during winter and spring, areas that are designated as critical habitat for WFC and YBC are left diminished at the time of breeding and over the long term. The photos in this Notice clearly illustrate this problem.

Livestock has long been identified as one of the major stressors on WFC habitat. Appendix G of the WFC recovery plan provides recommendations for livestock management in flycatcher habitat (Table 2 in Appendix G of the recovery plan). In summary for this proposed action and habitat type (All other habitat types), the plan recommends that livestock not be grazed in regenerating or suitable habitat during the growing season, that conservative grazing be implemented in these areas during the non-growing season, and that conservative utilization of herbaceous plants be implemented in the adjacent uplands.

As such, USFWS requires that:

> "The BLM will ensure that livestock are removed from occupied or unsurveyed suitable habitat before the start of each southwestern willow flycatcher breeding season (April 1); this could include sweeps (checking within exclosures for livestock and removing any livestock found)."[192]

We demonstrate in this Notice that this required removal does not occur. Thus, protection for WFC designated habitat here depends solely on vague, unenforced 'Conservation Measures' listed in the 2012 Biological Opinion which state:

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[190] Wohner, P.J., Laymon, S.A., Stanek, J.E., King, S.L. and Cooper, R.J. (2021), Early successional riparian vegetation is important for western Yellow-billed Cuckoo nesting habitat. Restor Ecol, 29: e13376. https://doi.org/10.1111/rec.13376

[191] A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments of the Gila District in Pinal County, Arizona.

[192] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion"), page 17.

> "2. Habitat Management Guidelines: The BLM will implement the following guidelines:
>
> a. Livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-September 1).
> b. Manage suitable flycatcher habitat so that suitable characteristics are not eliminated or degraded.
> c. Manage riparian areas to allow natural regeneration and, therefore, allow those sites with potential to progress into suitable habitat."[193]

We demonstrate in this Notice these Conservation Measures are simply not taken. Thus, the first glaring problem with this endangered species management strategy is that USFWS believes in good faith that the BLM will follow unenforceable measures and recommendations. They have not. As we demonstrate in this Notice, management strategies to promote and protect WFC habitat are ignored completely by the BLM on the ground.

Furthermore, USFWS states in the 2012 Biological Opinion:

> "On BLM lands with suitable or potential willow flycatcher habitat, restrict livestock grazing on riparian vegetation to winter use only from November 1 to March 30, and monitoring will be done to ensure utilization levels do not exceed 30 percent limits on apical meristems of woody vegetation 0-6 feet tall (e.g., cottonwoods and willows). Monitoring will be done prior to, during, and after the livestock have used a riparian pasture. Once the 30 percent utilization limit is met, all livestock will be removed from the pasture. To the extent feasible, the BLM shall offer to assist the permittee in managing livestock use in the non-BLM portions of the allotment for the benefit of the flycatcher."[194]

Firstly, these utilization limits described by USFWS do not address herbaceous ground cover, which is required by both WFC and YBC. The WFC Recovery Plan clearly imposes utilization limits on grasses and herbaceous plants.[195] Our photos certainly don't reflect conservative use of herbaceous ground cover. Instead, it appears to be completely removed.

Secondly, USFWS stated in the 2018 Biological Opinion that there is an "inability of native vegetation to regenerate under altered hydrological conditions" in this area. We observed no young cohorts of native riparian trees during our surveys (although still present are scour zones, which should be available for colonization by pioneer plant species and should be managed to allowed establishment of spring-germinating native trees). That there is an "inability of native vegetation to regenerate under altered hydrological conditions" should immediately

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[193] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion"), page 16.

[194] *Id.,* page 16.

[195] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Page 26.

preclude the use of this land as cow pasture, until such time as the native ecosystem can regenerate itself, as cow grazing furthers the degradation of this already severely impacted designated riparian zone.

When ground cover vegetation is extensively removed on an annual basis in critical habitat designations during spring, prior to summer rains, drainages will inevitably capture less rainwater through soil infiltration, will exhibit higher levels of runoff and erosion, will fail to recharge, and will exhibit higher ground temperatures during the hottest months of the year, which inhibits native plant recovery and reestablishment. All these effects hinder stream recovery and foster permanent degradation of water and wildlife resources on public lands. Not only is this irresponsible management that fails to consider the best available science of how to manage surface water during drought, it is also ignores the natural history requirements of ESA-listed wildlife. Like vegetation requirements for WFC, it is vitally important in that riparian and understory vegetation remain intact at the onset of YBC arrivals in Arizona for breeding starting at the end of May.

To corroborate this statement, USFWS species experts concluded that:

> "because the western yellow-billed cuckoo is listed as threatened, all the units are occupied during the breeding season and habitat would need to be protected during the nonbreeding season, the majority of actions necessary to conserve the species would be required based on the listing of the western yellow-billed cuckoo."[196]

Blatantly ignoring this management recommendation, the BLM floods designated critical habitat with cow herds during winter and spring, with USFWS' approval, ensuring that vital habitat constituents for breeding birds are diminished, allocated to cows, and removed or precluded at the very time that WFC and YBC arrive to reproduce. We demonstrate in this Notice that habitat components required by imperiled birds, including understory vegetation, are removed and/or diminished immediately prior to the birds' arrival to Arizona for breeding.

According to USFWS, "if an area with grazing activity degrades riparian habitat attributes and prevents long-term health and persistence of these systems, it is considered overgrazing."[197] In another example, USFWS defines overgrazing as grazing activities that reduce quality and quantity of breeding habitat.[198] USFWS identified "overgrazing in riparian (including xeroriparian) habitat as an ongoing threat to western yellow-billed cuckoo habitat that may require special management" and "where water is limited and recruitment events are infrequent, grazing at any level can impact riparian habitat."[199] YBC usually occupy wider, shallower portions of drainages with gradually sloped walls rather than the steeper narrower

[196] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20831.

[197] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20808.

[198] *Ibid.,* page 20853.

[199] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021.

portions of the canyons.[200] These are also areas that are more accessible and attractive to cows, necessitating the immediate and dire need for cow exclosures.

Full riparian cow exclusion is unquestionably required to sustain and promote WFC and YBC habitat on the Gila District. It is also the best way to mitigate for climate change and aridification. Seedlings of cottonwood, willow, and other riparian trees tend to recover rapidly after exclusion of livestock grazing.[201,202,203] Removal of cow grazing has been correlated with dramatic increases in dense willow thickets, necessary for WFC, YBC and other riparian species.[204,205,206] For example, in a comparison of perennial streams in Arizona including the Gila River, the San Francisco River, Bonita Creek, Mescal Creek and Aravaipa Creek, only Aravaipa Creek had been excluded from cows (since 1973) and was the only area with a dominant broadleaf riparian community and the only site that showed a trend towards maintenance of the riparian vegetative community.[207]

In another study in central California,

> "prior to removal of cattle in 1983, plots contained mature sycamores, one young sycamore, and five willows. By 1985, over 320 willows 16 sycamores and 1 cottonwood *Populus fremontii* had appeared and basal sprouts had developed on the mature sycamores. Young willows and sycamores grew slowly and establishment and growth generally ceased as surface flows disappeared. Because of slow growth at the sites a significant willow corridor is probably only possible in the absence of cattle browsing."[208]

[200] The December 4, 2017, Biological Opinion for Catalina-Rincon FireScape Project, AESO/SE 02EAAZ00-2016-F-0773, p. 57.

[201] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[202] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

[203] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In California Riparian Systems (pp. 97-108). University of California Press.

[204] Cannon, R.W. and Knopf, F.L., 1984. Species composition of a willow community relative to seasonal grazing histories in Colorado. *The Southwestern Naturalist*, *29*(2), pp.234-237.

[205] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[206] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[207] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In California Riparian Systems (pp. 97-108). University of California Press.

[208] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

Elimination of grazing in Little Ash Creek in Arizona quickly resulted in changes in tree size distribution, with many more younger cottonwoods on the ungrazed site as well as some stand reproduction.[209] In another local example, in Pima County's Cienega Creek, USFWS explains what happens when grazing threats are removed:

> "Response to Removal of Cattle Grazing on Empire Cienega and Cienega Creek.
>
> Prior to the establishment of the Pima County CCNP there was extensive cattle grazing on the site, but once cattle were removed from the system, vegetation height and volume increased significantly and likely plateaued in the early 2000s (unpublished data). Vegetation often responds positively to removal of cattle (Krueper et al. 2003), but since 2005 there has only been a slight increase in the extent of cottonwood canopies in the Pima County CCNP, though this analysis does not address the density of vegetation within the canopy. The extent and vigor of mesquite trees has declined since 2005. Removal of cattle grazing has resulted in increased vegetation in Empire Cienega and Upper Cienega Creek (M. Radke, pers. comm. January 27, 2016). Although effects of the drought are evident throughout Upper Cienega Creek, pockets of hydroriparian habitat continue to improve in suitability for both cuckoos and willow flycatchers."[210]

When creating mitigation sites for environmentally destructive projects, for example the nearby Ripsey Wash Tailings Storage Facility,[211] involved the establishment of cow-free zones in nearby locations so that native habitat can recover as mitigation. This is because cow exclusion is a vital first step of restoration, and arid-lands restoration cannot occur without this exclusion in place. When discussing YBC mitigation for Ripsey Wash Tailings Facility, USFWS explains that "management of mitigation sites A through D will exclude livestock grazing, off-road vehicle access, and wood harvesting, and routine maintenance and monitoring activities are expected to result in an overall benefit to the cuckoo within the site,"[212] USFWS adds that active restoration activities will include the control of non-native plant species (principally tamarisk), planting native trees and seeding native plant species.[213]

Here, the Service freely acknowledges that meaningful protection and restoration of remaining YBC habitat involves livestock exclusion and active restoration of native vegetation

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[209] Szaro, R.C. and Pase, C.P., 1983. Short-term changes in a cottonwood-ash-willow association on a grazed and an ungrazed portion of Little Ash Creek in central Arizona *Populus fremontii*, velvet ash, *Fraxinus velutina*, Goodding willow, *Salix gooddingii*. Rangeland Ecology & Management/Journal of Range Management Archives, 36(3), pp.382-384.

[210] April 28, 2016, Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona, p. 235.

[211] Correspondence to Sallie Diebolt, Chief, Arizona Branch, Department of the Army from USFWS Field Supervisor RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File #SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740, 02EAAZ00-2016-TA-0406.

[212] Correspondence to Sallie Diebolt, Chief, Arizona Branch, Department of the Army from USFWS Field Supervisor RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File #SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740, 02EAAZ00-2016-TA-0406, page 13.

[213] *Ibid.*

and trees. It is time to begin **mitigating** for significant grazing damages and **mitigating** for climate change and drought. Full exclusion from cows is required along the Middle Gila if this important stretch of perennial water is to ever recover.

DROUGHT

Public-land range conditions have generally worsened in recent decades,[214] perhaps due to the reduced productivity of these lands caused by past grazing in conjunction with a changing climate.[215] According to climate forecasters, prolonged and persistent drought is predicted for the West, where below-average precipitation and above-average temperatures are most likely to occur.[216] Putting this into context, it has been estimated that within the past one hundred years, 95 percent of riparian habitat in the West has already been destroyed.[217]

There has been no meaningful response to the prolonged, 1,200-year drought currently facing the southwestern United States in terms of grazing management, even though grazing is known to exacerbate the effects of climate change.[218] [219] In combination with dire climate projections that predict increasingly hotter and drier summers with less predictable precipitation,[220] status quo cow grazing continues to occur without revision and without evaluation of the near-term effect of prolonged drought on endangered species and designated Critical Habitat, particularly the loss of essential streamside vegetation. Instead, cows continuously harm future vegetation recovery, removing what little cover is available for wildlife requiring successional and regenerating vegetative structure. Managing for ecological integrity is non-existent yet should be common practice based on the best available conservation science, recognizing that integrity of natural resources depends upon mitigating consequences and contributions of climate change.

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[214] Donahue, D.L., 2006. Federal rangeland policy: perverting law and jeopardizing ecosystem services. J. Land Use & Envtl. L., 22, p. 299.

[215] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[216] Garfin, G., Jardine, A., Merideth, R., Black, M. and LeRoy, S. eds., 2013. Assessment of climate change in the southwest United States: a report prepared for the National Climate Assessment.

[217] Krueper, D.J., 1996. Effects of livestock management on Southwestern riparian ecosystems. *Shaw, DW, and Finch, DM, tech. coords. Desired future conditions for southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RM-GTR-272. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station*, pp.281-301.

[218] Stromberg, J.C., Setaro, D.L., Gallo, E.L., Lohse, K.A. and Meixner, T., 2017. Riparian vegetation of ephemeral streams. *Journal of Arid Environments*, *138*, pp.27-37

[219] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[220] Garfin, G., Jardine, A., Merideth, R., Black, M. and LeRoy, S. eds., 2013. Assessment of climate change in the southwest United States: a report prepared for the National Climate Assessment.

Cows affect ecosystem resources in ways that accentuate climate impacts.[221] The vast majority of grazed western riparian areas are already deficient in willow understory and nearly devoid of overstory cottonwood.[222,223] Foraging cows continue to reduce the density of willow and other shrubs, eliminate cottonwood and willow reproduction by feeding on and trampling seedlings, and modify habitat through soil compaction and other means.[224,225,226,227,228] This unwarranted ecological impact has resulted in doomed stands where old cottonwood trees in the overstory are dying with no new recruitment to replace themselves.[229,230,231,232] An obvious conclusion is that cow grazing can prevent riparian areas from yielding habitat for imperiled species in perpetuity in Arizona. Despite these dire climate circumstances, status quo cow grazing continues to occur without revision, continuously harming future vegetation recovery and removing what little cover is available for wildlife that require complex vegetative structure.

In addition, grazing by livestock can increase soil temperatures through vegetation removal, soil compaction and erosion. Water evaporation increases, water infiltration decreases, and these effects amplify the already hot conditions found close to the ground in desert areas. Effects of vegetation removal on soil temperature have been documented in the scientific literature for nearly a century. For example, a significant increase in soil temperature at depths of 2.5, 7.5, and 15 cm was observed in clipped versus unclipped plots in prairie ecosystems.[233]

The 2012 and 2018 Biological Opinions provide no discussion on climate change effects to WFC and YBC, and failed to include and consider the additive and cumulative impacts of

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[221] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[222] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.

[223] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[224] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[225] Belsky, A.J., Matzke, A. and Uselman, S., 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and water Conservation*, *54*(1), pp.419-431.

[226] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. *Desert Plants*.

[227] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation Biology, *8*(3), pp.629-644.

[228] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[229] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[230] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. *Desert Plants*.

[231] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[232] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[233] Steiger, T.L., 1930. Structure of prairie vegetation. *Ecology*, *11*(1), pp.170-217.

riparian cow grazing and climate change despite an extensive body of scientific literature that exists regarding climate change and cow grazing impacts.[234] In the context of YBC, USFWS' own recent conclusion in another Biological Opinion for the nearby Coronado National Forest (a relative stronghold for YBC) is that "[w]e also anticipate that climate change will degrade habitat to the point of being incapable of supporting the occurrence of yellow-billed cuckoos."[235]

Based on our observations in the field and the photos presented in this Notice, we are not observing 'riparian habitat in a dynamic successional riverine environment' as required by WFC and YBC.[236] Soil disturbances are rampant and significant and preclude vegetation recovery when combined with the effects of long-term drought and rising temperatures. Even worse, recent fires have eliminated mature, reproductive riparian trees along the Middle Gila in the allotments at issue here, further reducing the chances of future recruitment events (we also documented examples of mature mesquite trees deliberately cut down in Critical Habitat designations). Grazing exacerbates the spread of invasive species post-fire.[237]

Thus, to conserve and recover WFC and YBC and their required habitat, BLM management must stop the direct damage to Critical Habitat by improper grazing practices, which amplify climate change impacts and are a hindrance to post-fire recovery.

STATUTORY BACKGROUND

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[238] The statute's primary goal is "to provide a means

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[234] For example: Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild and Feral Ungulates; Robert L. Beschta, Debra L. Donahue, Dominick A. DellaSala, Jonathan J. Rhodes, James R. Karr, Mary H. O'Brien, Thomas L. Fleischner, and Cindy Deacon Williams, Environmental Management (2013) 51:474-491.; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192, Page 59992, October 3, 2014.; Livestock Production, Climate Change, and Human Health: Closing the Awareness Gap, Debra L. Donahue, Environmental Law Reporter, 45 ELR 11112, 12-2015, http://ssrn.com/abstract=2696741; citing: *See, e.g.*, Beschta et al., *supra* note 59, at 476-81; Ripple et al., *supra* note 2, at 2, 3. Almost nothing is known, however, about the ability of shrublands to sequester carbon. *See* Jack A. Morgan et al., *Carbon Sequestration in Agricultural Lands of the United States*, 65 J. Soil & Water Conservation 6A, 7A (2010), doi:10.2489/jswc.65.1.6A. This is a "critical research need," *see id.*, particularly since shrubs dominate large areas of the public lands.; Climate change scenarios of herbaceous production along an aridity gradient: vulnerability increases with aridity, Carly Golodets, Marcelo Sternberg, Jaime Kiegel, Bertrand Boeken, Azlmen Henkin, No'am G. Silgmean and Eugene D. Ungar, DOI 10.1007/s00442-015-3234-5, February 7, 2015.; Riparian vegetation of ephemeral streams, Stromberg, J.C., Setaro, D.L., Gallo, E.L., Lohse, K.A. and Meixner, T., *Journal of Arid Environments*, *138*, 2017, pages 27-37.

[235] April 28, 2016, Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona p. 242.

[236] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion") page 24.

[237] Keeley, J.E., 2006. Fire management impacts on invasive plants in the western United States. *Conservation Biology*, *20*(2), pp.375-384.

[238] Tenn. Valley Auth. v. Hill, 437 U.S. 153, 180 (1978).

whereby the ecosystems upon which endangered species and threatened species depend may be conserved."[239] The U.S. Supreme Court has recognized that "the plain intent of Congress in enacting the [ESA] was to halt and reverse the trend toward species extinction, whatever the cost."[240]

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.[241] 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.[242]

To receive the protection of the ESA, a species must first be listed by the Secretary of the Interior as "endangered" or "threatened."[243] After a species is listed, the substantive obligations of the ESA apply to that species. These include the prohibition on take, the duty of federal agencies to consult with USFWS, and the duty to ensure that those agencies' actions do not jeopardize the continued existence of listed species or adversely modify critical habitat.[244]

Within the ESA's statutory scheme, the designation and protection of Critical Habitat is especially important. Congress recognized the significance of habitat protection when it found that:

> "[C]lassifying a species as endangered or threatened is only the first step in insuring its survival. Of equal or more importance is the determination of the habitat necessary for that species' continued existence. . . . If the protection of endangered and threatened species depends in large measure on the preservation of the species' habitat, then the ultimate effectiveness of the Endangered Species Act will depend on the designation of critical habitat."[245]

Thus, the ESA requires USFWS to designate Critical Habitat at the same time a species is listed.[246] Any designation of Critical Habitat must be based on the "best scientific data available."[247]

Reflecting the statute's focus on species recovery, Critical Habitat may include both occupied and unoccupied areas that are "essential for the conservation of the species."[248] "Conservation," is defined in turn to include all methods that can be employed to "bring any endangered species or threatened species to the point at which" the protection of the ESA is "no longer necessary."[249] As such, "the purpose of establishing 'critical habitat' is for the

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[239] 16 U.S.C. § 1531(b).

[240] *Hill*, 437 U.S. at 184.

[241] 16 U.S.C. § 1533(a).

[242] 16 U.S.C. § 1533(f).

[243] *See* 16 U.S.C. § 1533.

[244] *See Hill*, 437 U.S. at 180-82.

[245] H.R. Rep. No. 94-887 at 3 (1976).

[246] 16 U.S.C. §§ 1533(a)(3)(A)(i), 1533(b)(6)(C).

[247] *Id.* § 1533(b)(2).

[248] *Ibid.*

[249] *Id.* § 1532(3).

government to carve out territory that not only is necessary for the species' survival but also is essential for the species' recovery."[250]

Once a species is listed and critical habitat designated, Section 7 of the ESA requires each federal agency, in consultation with a federal wildlife agency (in this case, USFWS), to ensure that any 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.[251] To "jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[252] "Destruction or adverse modification" of critical habitat means "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation or a listed species."[253] And "conservation," as noted, means recovery to the point where the ESA's protections are no longer needed.[254] Thus, the ultimate aim of consultation is to ensure that federal agency action does not impair the survival or recovery of a listed species.

For each proposed action, the action agency must request from USFWS whether any listed or proposed species may be present in the area of the proposed action.[255] 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.[256] If the agency determines that its proposed action may affect any listed species or critical habitat, the agency must engage in "formal consultation" with USFWS.[257]

When the "action agency" (the BLM in this case) determines that a proposed action may affect a listed species, it must engage in formal consultation with USFWS.[258] Formal consultation results in a biological opinion detailing "how the agency action affects the species or its critical habitat."[259]

It is essential that USFWS define the scope of formal consultation to encompass the entire proposed action.[260] The term "agency action" should be interpreted broadly because "caution can only be exercised if the agency takes a look at all the possible ramifications of the agency action."[261] USFWS is accordingly required to consider "all phases" of the agency action in its analysis.[262]

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[250] *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1070 (9th Cir. 2004).

[251] 16 U.S.C. § 1536(a)(2).

[252] 50 C.F.R. § 402.02.

[253] *Ibid.*

[254] 16 U.S.C. § 1532(3).

[255] 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12.

[256] *Ibid.*

[257] 50 C.F.R. § 402.14.

[258] 50 C.F.R. § 402.02.

[259] 16 U.S.C. 1536(b)(3)(A).

[260] *Conner v. Burford*, 848 F.2d 1441, 1453 (9th Cir. 1988) (citing *North Slope Borough v. Andrus*, 642 F.2d 589, 608 (D.C. Cir. 1980).

[261] *Ibid*.

[262] *Ibid.*

USFWS must also take a broad view of the action's impacts on listed species. Under Section 7's implementing regulations:

> "Effects of the action are *all consequences* to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. … Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action."[263]

Federal agencies must "use the best scientific and commercial data available" in assessing a proposed action's impact on a protected species.[264]

To complete formal consultation, USFWS must provide the action agency with a "biological opinion" explaining how the proposed action will affect the listed species or habitat.[265] The biological opinion "is required to address both the 'no jeopardy' and 'no adverse modification' prongs of Section 7."[266] If USFWS 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, USFWS must outline "reasonable and prudent alternatives" to the proposed action that USFWS believes would not jeopardize the listed species or result in the destruction or adverse modification of its Critical Habitat.[267]

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, USFWS must provide an "incidental take statement," specifying the amount or extent of such incidental taking on the species, any "reasonable and prudent measures" that USFWS 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.[268] In order to monitor the impacts of incidental take, the agency must report the impact of its action on the listed species to USFWS.[269] If during the course of the action the amount or extent of incidental taking is exceeded, the agency must reinitiate consultation immediately.[270]

After a species has been listed and with every action evaluated by a USFWS biological opinion where a listed species is likely to be adversely affected, it is prohibited to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect in any such conduct."[271] With a USFWS biological opinion where a listed species is likely to be adversely affected, USFWS must provide an Incidental Take Statement and Reasonable and Prudent Measures to ensure that any proposed action is not likely to jeopardize the continued

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[263] 50 C.F.R. § 402.02 (emphasis added).

[264] 16 U.S.C. § 1536(a)(2).

[265] 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14.

[266] *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).

[267] 16 U.S.C. § 1536(b)(3)(A).

[268] 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).

[269] 50 C.F.R. § 402.14(i)(3).

[270] 50 C.F.R. § 401.14(i)(4); *see also* 50 C.F.R. § 402.16.

[271] 16 U.S.C. § 1532, 50 CFR § 17.21, 16 U.S.C. § 1536(b)(4).

existence of a listed species, or result in the destruction or adverse modification of critical habitat.[272] Incidental Take Statements provide for mitigation measures that adequately address impacts on listed species consistent with ESA's protective intent,[273] that are causally linked between the action and the take of the species,[274] and that provides for a take-triggering metric that is finite and measurable.[275]

After the procedural requirements of consultation are complete, the ultimate duty to protect and conserve listed species lies with the action agency. Consequently, an action agency's reliance on an inadequate, incomplete, or flawed biological opinion is arbitrary, capricious, and unlawful.[276]

A biological opinion is a final agency action subject to judicial review under the federal Administrative Procedure Act, which requires federal courts to set aside agency action found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law."[277] A court's review under this standard, while "narrow," is also "searching and careful."[278]

Reinitiation of Section 7 consultation is required and shall be requested by the Federal action agency or by USFWS if (a) the amount or extent of taking specified in the incidental take statement is exceeded; (b) 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; (c) if the identified 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 (d) if a new species is listed or critical habitat designated that may be affected by the identified action.[279]

While a consultation is taking place, Section 7(d) prohibits Federal agencies from making "any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection 7(a)(2)"[280] [insuring any action is not likely to jeopardize the continued existence of an endangered species or result in the destruction or adverse modification of Critical Habitat].

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 USFWS, to "carry out programs for the conservation" of listed species.[281] This

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[272] 16 U.S.C. § 1536(a)(2).

[273] *Center for Biological Diversity v.* BLM, 698 F.3d 1101, 1115 (9th Cir. 2012).

[274] 50 C.F.R. 402.14(i)(1)(i); *Miccosukee Tribe of Indians of Fla. v. United States*, 566 F.3d 1257, 1275 (11th Cir. 2009).

[275] Center for Biological Diversity, et al., v. Donald H. Rumsfeld, Secretary of Defense, et al., CIV99-203 TUC ACM, *198 F. Supp. 2d 1139; 2002 U.S. Dist LEXIS 7419; 54 ERC (BNA) 1391; 32 ELR 20640*; April 8, 2002: "Mitigation measures must be reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards."

[276] *See, e.g.*, *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010).

[277] 5 U.S.C. § 706(2)(A); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 422 F.3d 782, 709 (9th Cir. 2005).

[278] *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 378 (1989).

[279] 50 CFR § 402.16 Reinitiation of formal consultation.

[280] 16 U.S.C. § 1536(d).

[281] 16 U.S.C. § 1536(a)(1).

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 are no longer necessary."[282] 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 v. Tom Vilsack,* 276 F. Supp. 3d 1015 (D.Nev. 2017).[283]

Section 7(a)(4) requires Federal agencies to confer with the Service 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 BLM-managed land, the law requires that the BLM consults with USFWS to ensure that BLM's activities will not jeopardize survival and recovery of these species.[284]

Section 7(d) prohibits Federal agencies from making "any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection 7(a)(2)"[285] [insuring any action is not likely to jeopardize the continued existence of an endangered species or result in the destruction or adverse modification of Critical Habitat].

Section 9 of the ESA and its implementing regulations prohibit the unauthorized "take" of 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).

The ESA commands federal agencies to "insure" listed species' survival *and* recovery. In addition to requiring consulting agencies to incorporate recovery concerns into project-specific consultations, Section 4 reinforces the Act's emphasis on ensuring recovery. There, Congress required that FWS "*shall* develop and *implement* [recovery] plans for the conservation and survival of endangered species . . . ." 16 U.S.C. § 1533(f)(1) (emphases added). "Conservation," as explained, is defined under the ESA as the "use of all methods and procedures which are necessary to bring [listed] species to the point at which the measures provided pursuant to this chapter are no longer necessary." *Id.* § 1532(3),

In using the word "shall," Congress could not have been clearer about its intent to require FWS to actually "implement" recovery plans. The Supreme Court has repeatedly provided that "when a statute uses the word 'shall,' Congress has imposed a mandatory duty upon the subject of the command." *Forest Guardians v. Babbitt*, 174 F.3d 1178, 1187 (10th

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[282] *Ibid*.

[283] Order, Center for Biological Diversity, et al., Plaintiffs, v. Tom Vilsack, et al., Defendants; Case No. 2?13-cv-01785-RFB-GWH; August 1, 2017.

[284] 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

[285] 16 U.S.C. § 1536(d)

Cir. 1999) (collecting cases). For this reason, courts have found that where recovery plans go beyond "general guidance" by "specif[ying] species-level and habitat-level recovery actions," Section 4(f) imposes a legal duty on FWS to implement those measures. *See Biodiversity L. Found. v. Norton*, 285 F. Supp. 2d 1, 13 (D.D.C. 2003); *see also Friends of the Blackwater v. Salazar*, 691 F.3d 428, 436-37 (D.C. Cir. 2012) (noting that "§ 4(f)(1) of the Act imposes mandatory obligations upon" FWS "to work toward the goals set in its recovery plan" by actually implementing the plan before delisting a species); *Sw. Center for Biological Diversity v. Bartel*, 470 F. Supp. 2d 1118, 1136 (S.D. Cal. 2006) (rejecting BiOp that was "inconsistent with the strategies and objectives in the [species'] recovery plan," and holding that FWS must, at minimum, "explain why it" departed from the plan in site-specific actions).

The Administrative Procedure Act requires that federal decisions are not "arbitrary, capricious, or an abuse of discretion."[286]

SOUTHWESTERN WILLOW FLYCATCHER BACKGROUND AND HABITAT NEEDS

The southwestern willow flycatcher (*Empidonax traillii extimus)* ("WFC") was listed as federally endangered in 1995 and received a Recovery Plan in 2002.[287] This small bird breeds in riparian habitats in the southwestern United States, requiring relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes and reservoirs.[288] Flycatchers are insectivores, foraging in dense shrub and tree vegetation along rivers, streams, and other wetlands.[289] In the Southwest, flycatchers arrive on territories in late April or early May, and nest building begins in mid-May.[290]

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

Specifically, these primary constituent elements include:

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

[286] 5 USC §706(2)(A).

[287] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico.

[288] *Id.,* page. iv.

[289] Correspondence to Sallie Diebolt, Chief, Arizona Branch, Department of the Army from USFWS Field Supervisor RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File #SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740, 02EAAZ00-2016-TA-0406, page 15.

[290] *Ibid.*

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

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

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

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

e. Dense patches of riparian forests that are interspersed with small openings of open water or marsh, or shorter/sparser vegetation that create a mosaic that is not uniformly dense. Patch size may be as small as 0.1 hectare (0.25 acre) or as large as 70 hectares (175 acres)."[291]

The problems facing southwestern willow flycatcher include extensive loss and modification of breeding habitat, which has resulted in a similarly extensive loss of individuals within the population. WFC is endangered primarily because land and water management actions associated with agriculture and urban development have reduced, degraded, and eliminated much of its riparian habitats. Other threats include human recreation along rivers and streams, livestock grazing, predation, brood parasitism by brown-headed cowbirds (*Molothrus ater*) associated with livestock grazing, invasion of the tamarisk-eating leaf beetle (*Diorhabda carinulata*), and unnatural wildfires that have become more frequent and destructive as a result of the proliferation of exotic vegetation and degraded watersheds also associated with livestock grazing. Nestling predation and brood parasitism are the most common forms of direct mortality. All existing threats are compounded by the risk of stochastic events because the subspecies' habitats are fragmented and because populations occur at low numbers.[292]

Along the Middle Gila, in the area at issue in this Notice, WFC occurrence on the Gila River and at Kelvin Bridge has been well documented since 1995 as a result of 1) increased

[291] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion") page 24.

[292] The May 11, 2018, Correspondence to Sallie Diebolt, RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File Number SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740; 02EAAZ00-2016-TA-0406, page 15.

monitoring efforts that followed the species' listing that year, 2) protocol surveys done specifically to assess the effects of the Kelvin Bridge replacement, and 3) protocol surveys done to assess authorized grazing, which have been performed since 2006.

Streamflow is the primary driver of WFC occupancy, abundance, colonization, and breeding and explains most of the annual variations in detections.[293] For example,

> "From 1998 to 1999, mean monthly streamflow from July to April was 327 cfs and territory numbers increased by 30% along the Gila River (Graber et al. 2009 Appendix I). A high of 69 flycatcher territories were detected in 1999. From 2000 to 2004, July to April streamflow at the Gila River study area decreased to 160 cfs and became inconsistent due to limited releases from Coolidge Dam (the years 2000-2004 were drought years; McPhee et al. 2004). In 2004, only 14 territories were confirmed. The drought ended in 2005, storage at the San Carlos Reservoir increased, along with downstream water demand, and mean monthly flows increased to 300 cfs, 88 percent higher than the 2000-2004 flows. Territory numbers increased to 39 in 2006 and to 62 in 2007. Graber et al. (2012) reported streamflows above 300 cfs every year from 2008-2011, and during that time flycatcher abundance continued to increase, from 63 to 188 pairs.[294]
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> "The importance of surface water to flycatchers and their streamside vegetation is also evident when we focus on flycatchers and habitat conditions (i.e., critical habitat) in the reach containing the Kelvin Bridge. Results of protocol surveys there from 1995-2015 show a pattern of occupancy and abundance similar to that of the critical habitat unit as a whole. Flycatchers were found at Kelvin from 1996 to 1999 (2 territories each year, 5 in 1999), in 2006 (1 territory), and from 2012-2016 (at least 2 territories each year, 5 in 2014 and 6 in 2016). Thus, flycatchers were present before the drought, were absent during the drought, and returned after the drought (one territory was found in 2006). Interestingly, flycatcher numbers at Kelvin did not increase steadily immediately after the drought, as they did in the critical habitat unit as a whole. Territory numbers at Kelvin did not reach pre-drought levels until 2014. The reason for this, we suspect, is that habitat conditions declined during the drought and did not fully recover until well after the drought ended."[295]

Although BLM's Biological Assessment reports increasing trends, the most current survey report for the Kelvin Bridge area is from 2017 when WFC detections crashed.[296] For

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[293] Graber, A.E. and T.J. Koronkiewicz. 2009. Southwestern willow flycatcher surveys and nest monitoring along the Gila River between Coolidge Dam and South Butte, 2008. Final 2008 summary report submitted to U.S. Bureau of Reclamation, Phoenix, Arizona by SWCA Environmental Consultants, Flagstaff, Arizona.

[294] The May 11, 2018, Correspondence to Sallie Diebolt, RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File Number SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740; 02EAAZ00-2016-TA-0406, page 24.

[295] The May 11, 2018, Correspondence to Sallie Diebolt, RE: Request for Formal Endangered Species Act Consultation on the Proposed Ripsey Wash Tailings Storage Facility, Pinal County, Arizona (File Number SPL-2011-1005-MWL) AESO/SE 02EAAZ00-2016-F-0740; 02EAAZ00-2016-TA-0406, page 24.

[296] Westland Resources, Inc. 2017. 2017 Willow flycatcher (WIFL) survey and detection form with figures. Submitted to U.S. Fish and Wildlife Service. Tucson.

example, in 2016 eleven WFC detections occurred in proximity to the Kelvin Bridge, including 5 confirmed pairs within 6 territories.[297] This number fell to only a single confirmed pair in 5 territories in 2017. Breeding status was considered likely but not confirmed for any of the individuals or pairs.[298]

Perhaps relatedly, numerous regional heat and drought records have recently been broken, beginning in 2017. For example, 2017 was the hottest year on record for the Phoenix area, and in second place for all-time heat was 2020.[299] 2018 was the 7th hottest year on record for Arizona.[300] Based on the percentage of Arizona in an 'exceptional drought' (category D4), drought in Arizona was by far the most severe this century from November 2020 to mid-July 2021.[301] These alarming trends are representative of the conditions we can likely expect in years to come.

Thus, relying on data whose collection ended in 2017 ignores the most extreme heat and drought records in Arizona recorded history. This arbitrary and capricious act forecloses any evaluation of the near-term effect of prolonged drought on endangered species and designated Critical Habitat, particularly the lost essential streamside vegetation. This vegetation loss is worsened using a grazing promotion and perpetuation scheme that is not relevant to the protection of endangered species and their designated riparian Critical Habitat. Reliance on data whose collection ended in 2017 is a violation of the Administrative Procedure Act, which is intended to stop conclusions that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[302] This act also violates the Endangered Species Act requirement to use "the best scientific . . . data available."[303]

While destruction and modification of riparian habitats have been caused by a variety of human actions, a significant threat that is ongoing and that exacerbates the effects of climate change is livestock grazing in riparian systems,[304] especially when this practice occurs in the riparian growing season or in the nesting season for WFC. The first and foremost recovery action listed in the 2002 WFC Recovery Plan is to increase and improve occupied, suitable, and potential breeding habitat.[305] While WFC numbers fluctuate annually with heat and drought variables, their overall distribution remains static and without expansion. For example,

> "While numbers have significantly increased in Arizona (145 to 495 territories from 1996 to 2005) (English *et al.* 2006), overall distribution of flycatchers

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[297] Westland Resources, Inc. 2016. 2016 Willow flycatcher (WIFL) survey and detection form with figures. Submitted to U.S. Fish and Wildlife Service. Tucson.

[298] *Id.,* page 22-23.

[299] https://www.azcentral.com/story/news/local/arizona-weather/2021/01/29/2020-was-2nd-hottest-2nd-driest-year-ever-recorded-for-arizona/4301588001/ accessed March 2023.

[300] https://www.weather.gov/psr/Year_in_Review_2018 accessed March 2023.

[301] National Drought Mitigation Center, 2023.

[302] Administration Procedures Act, 5 U.S. Code § 706(2)(A)

[303] 16 U.S.C. § 1536(a)(2).

[304] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico.

[305] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico, page. v.

> throughout the state has not changed substantially. Currently, population stability in Arizona is believed to be largely dependent on the presence of two large populations (Roosevelt Lake and San Pedro/Gila River confluence). Therefore, the result of catastrophic events or losses of significant populations either in size or location could greatly change the status and survival of the bird. Conversely, expansion into new habitats or discovery of other populations would improve the known stability and status of the flycatcher."[306]

Authorized allocation of vital habitat components to accommodate cows has led to removal of riparian vegetation and has adversely affected southwestern willow flycatchers via habitat loss. Immediately, the BLM has failed to perform any basic recovery action inside of designated WFC critical habitat. The BLM has instead aided in the destruction of occupied, suitable, and potential breeding habitat by allowing cows to degrade WFC critical habitat, in an area adjacent to the most substantial WFC population in the state of Arizona at the lower San Pedro River. The Middle Gila allotments should represent the first available expansion zone for dispersing WFC from the San Pedro River, but BLM's grazing program is helping to preclude this recovery scenario.

According to the Recovery Plan, "If livestock grazing is a major stressor, implement general livestock grazing guidelines from Appendix G[307] in currently suitable or potentially suitable habitat."[308] According to Appendix G and the recommendations of the WFC Technical Subgroup of experts on the species, there should be no grazing in any 'restorable or regenerating habitat', whether occupied or unoccupied, during the growing season for vegetation. Even during the non-growing season, there should be no grazing in nesting habitat characterized by low stature (3-4m willows) and only provisional grazing in all other habitat types (assuming that grazing is not a significant stressor).[309]

> "The primary responsibility of the Technical Subgroup is to chart the recovery of the southwestern willow flycatcher. The goal of a recovery plan is to recommend actions that will bring about recovery of a species. The evidence and field examples indicate that with respect to livestock grazing, southwestern willow flycatcher recovery would be most assured, and in the shortest time, with total exclusion of livestock grazing from those riparian areas that are deemed necessary to recover the flycatcher and where grazing has been identified as a principal stressor."

Therefore, despite the recommendations stated in the Recovery Plan for WFC, the BLM is ignoring its responsibilities to assist in the recovery of this imperiled bird by continually greenlighting destructive land use activities. We are certainly not observing 'riparian habitat in a

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[306] *Id*., page 24.

[307] In the 2002 WFC Recovery Plan, 'Appendix G' focuses specifically on "*Management of Livestock Grazing in the Recovery of the Southwestern Willow Flycatcher*".

[308] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico page. 114.

[309] *Id*., Table 2 at page G-27.

dynamic successional riverine environment'[310] along the BLM-managed allotments of the Middle Gila. Cows in these allotments have contributed to loss of habitat and reduced productivity of habitat through improper grazing, overgrazing, and harassment including potential displacement and reduced survivorship as a result of unauthorized grazing. Even worse, BLM has formally requested to be relieved of their flycatcher habitat mapping and to forego brown-headed cowbird management and control.[311]

Grazing cows out of season results in disturbance and harassment of flycatchers that arrive in the area during breeding season, including migrants and resident birds that would otherwise remain in the area to breed. Moreover, our surveys revealed large swaths of cottonwood gallery forest that has been burned in a recent fire. To reiterate, there should be no grazing in any 'restorable or regenerating habitat'.

Restoration in this area is critical, as the tamarisk leaf beetle (*Diorhabda* spp.) is rapidly expanding its territory and threatens to remove important nesting habitat for flycatchers before native tree species have a chance to regenerate into viable nesting areas. To mitigate this, replacement stands of native vegetation will need to be fostered immediately, and this cannot co-occur with cow grazing.[312,313,314,315,316,317,318,319,320,321]

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[310] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion"), page 24.

[311] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion").

[312] Crouch, G.L., 1979. Long-term changes in cottonwoods on a grazed and an ungrazed plains bottomland in northeastern Colorado (Vol. 370). US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

[313] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[314] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[315] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[316] Carothers, S.W., 1977. Importance, preservation, and management of riparian habitats: an overview. In *Importance, preservation, and management of riparian habitats: a symposium. USDA Forest Service General Technical Report RM-43* (pp. 2-4).

[317] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In *California Riparian Systems* (pp. 97-108). University of California Press.

[318] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.

[319] Kauffman, J.B., Krueger, W.C. and Vavra, M., 1983. Effects of late season cattle grazing on riparian plant communities. *Rangeland Ecology & Management/Journal of Range Management Archives*, *36*(6), pp.685-691.

[320] Carothers, S.W., 1977, July. Importance, preservation, and management of riparian habitats: an overview. In *Importance, preservation, and management of riparian habitats: a symposium. USDA Forest Service General Technical Report RM-43* (pp. 2-4).

[321] Ames, C.R., 1977. in Riparian Management: Grazing'. In *Importance, Preservation and Management of Riparian Habitat: A Symposium, Tucson, Arizona, July 9, 1977* (Vol. 43, p. 49). Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station.

YELLOW-BILLED CUCKOO BACKGROUND AND HABITAT NEEDS

The U.S. Fish and Wildlife Service listed YBC as a Threatened Species in 2014.[322] This listing, compiled by USFWS, included comprehensive coverage of Yellow-billed Cuckoo dramatic habitat loss, fragmentation and degradation, severe widespread population declines, climate change and the number and importance of associated cumulative impacts.[323]

Yellow-billed Cuckoo face precipitous population declines in western breeding grounds owing primarily to loss of native habitat.[324] Once a fairly common summer resident throughout Arizona, USFWS concluded that Arizona YBC populations declined significantly starting in the 1970's, directly paralleled by the decline of preferred breeding habitat, i.e. cottonwood-willow riparian communities.[325] Despite the extraordinary ecological and biodiversity values of riparian ecosystems, these places have been the most disturbed and degraded land type in the western United States.[326] Riparian cottonwood/willow forest is now considered the rarest forest type in North America.[327]

California historically possessed the greatest number of nesting YBC north of Mexico. California's YBC populations have been decimated predictably following the loss, fragmentation, and degradation of breeding habitat consisting of mature and contiguous cottonwood-willow riparian gallery forests. Arizona now maintains the largest YBC populations in the United States even though it is currently experiencing dramatic population declines.[328]

In the 2018 Biological Opinion, USFWS states:

> "The Arizona Breeding Bird Atlas indicates probable yellow-billed cuckoo breeding along the lower San Pedro River and possible breeding on the Gila River between Kearny and Kelvin (Corman and Wise-Gervais 2005)."[329]

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[322] Rules and Regulations. Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192. October 3, 2014.

[323] Rules and Regulations. Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192. October 3, 2014.

[324] Wallace, C.S., Villarreal, M.L. and van Riper III, C., 2013. Influence of monsoon-related riparian phenology on yellow-billed cuckoo habitat selection in Arizona. *Journal of Biogeography*, *40*(11), pp.2094-2107.

[325] USFWS. 2013. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus); Proposed Rule. 50 CFR Part 17. Federal Register, Vol. 78, No. 192, Part V. 3 October 2013. Pages 61621-61666.

[326] Bock, C.E., Saab, V.A., Rich, T.D. and Dobkin, D.S., 1993. Effects of livestock grazing on neotropical migratory landbirds in western North America. *Status and management of Neotropical migratory birds. USDA Forest Service, General Technical Report RM-229*, pp.296-309.

[327] Streams of Life, The Nature Conservancy, 1987.

[328] Krzysik 2014. Western Yellow-billed Cuckoo Critical Habitat in Arizona. Technical Report. Prescott, AZ 12 October 2014.

[329] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion"), page 5.

> "WestLand conducted yellow-billed cuckoo protocol surveys in 2012–2014 at the Kelvin Bridge; no individuals were detected. Survey data indicated detections of yellow-billed cuckoos upstream and downstream of Kelvin Bridge; however, no nests were detected. Detections upstream from the Kelvin Bridge project area ranged from 0.5 to 2.8 miles away, and detections downstream ranged from 1.7 to 2.5 miles away."[330]

The Gila River, with its pre-settlement extensive cottonwood-willow riparian gallery forests, historically possessed one of the largest concentrations of breeding YBC in the United States. It is currently severely degraded by agriculture and residential development, water drawdown, cow grazing, and numerous other impacts. [331] Federal agencies should strive to protect and recover as much critical habitat on the Gila River as possible because of its historical importance as both breeding and migratory habitat for YBC.

Optimal reproductive habitat and its micro-environments for YBC have been established, are well known, and are thoroughly documented. Optimal YBC reproductive habitat consists of very large non-fragmented landscapes of old growth mature cottonwood-willow gallery forest, with dense multistory layers of vegetation in both the subcanopy and ground layers, and the presence of perennial surface water.[332] Range-wide breeding habitat is composed of riparian woodlands within floodplains or in upland areas or terraces often greater than 325 ft (100 m) in width and 200 ac (81 ha) or more in extent ***with an overstory and understory vegetation component in contiguous or nearly contiguous patches*** adjacent to intermittent or perennial watercourses.[333]

According to USFWS in their 2021 final determination of critical habitat:

> "As described in the Critical Habitat section, features such as **understory and overstory components with high humidity** are considered important for habitat selection for breeding western yellow-billed cuckoos. This is especially true in ephemeral, tree-lined xeroriparian drainages."[334]

Food availability for Yellow-billed Cuckoo is largely influenced by the health, density, and species composition of understory and overstory vegetation.[335] USFWS has determined the presence of abundant, large insect fauna (for example, cicadas, caterpillars, katydids, grasshoppers, large beetles, and dragonflies) and tree frogs during nesting season

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[330] *Id.,* page 6.

[331] *Ibid*.

[332] Rosenberg, K.V., R.D. Ohmart, W.C. Hunter, and B.W. Anderson. 1991. Birds of the Lower Colorado River Valley. Univ. Arizona Press, Tucson, AZ. 416pp.; Johnson, M.J., S.L. Durst, C.M. Calvo, L. Stewart, M.K. Sogge, G. Bland, and T. Arundel. 2008. Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use Along the Lower Colorado River and its Tributaries, 2007 Annual Report. USGS, Open File Report 2008-1177. 274pp.

[333] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20939.

[334] *Id.,* page 20815.

[335] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48551.

to be an essential physical or biological feature for this species.[336] In terms of providing foraging opportunities that will ensure Yellow-billed Cuckoo nesting success, understory vegetation or ground cover may be as important as overstory vegetation to suitable western yellow-billed cuckoo habitat. For example:

> "At the ground level, increased forb cover was positively associated with cuckoo site occupancy… low vegetation may also provide an indirect source of food (i.e., an insect breeding and/or feeding ground)… in the South Fork Kern River, cuckoos nested at sites with significantly greater forb cover than was found in the forest at random. Yellow-billed cuckoos feed on a variety of prey, including large macroinvertebrates such as caterpillars, katydids, grasshoppers, crickets, and mantids (Laymon 1980; Halterman 2009), which can be found in this type of habitat (Borror et al. 1989).[337]

Despite the importance of understory vegetation and ground cover to YBC, especially in their breeding grounds in AZ that are protected with critical habitat designations, cow grazing degrades these important features in riparian and aquatic habitats throughout the arid Southwest.[338] Overgrazing in riparian (including xeroriparian) habitat has been identified by USFWS as an ongoing threat to Yellow-billed Cuckoo habitat that may require special management. Grazing at any level can impact riparian habitat according to USFWS.[339]

USFWS discusses the full suite of threats to Yellow-billed Cuckoo caused by cow grazing below:

> "(4) Actions that would result in alteration of western yellow-billed cuckoo habitat from overgrazing of livestock or ungulate (for example, horses, burros) management. Such activities could include, but are not limited to, unrestricted ungulate access and use of riparian vegetation; excessive ungulate use of riparian vegetation during the non-growing season (for example, leaf drop to bud break); overuse of riparian habitat and upland vegetation due to insufficient herbaceous vegetation available to ungulates; and improper herding, water development, or other livestock management actions. These activities could reduce the volume and composition of riparian

[336] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48552.

[337] Johnson, M.J., S.L. Durst, C.M. Calvo, L. Stewart, M.K. Sogge, G. Bland, and T. Arundel. 2008. Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use Along the Lower Colorado River and its Tributaries, 2007 Annual Report. USGS, Open File Report 2008-1177. 274pp.

[338] Bock, C.E., J.H. Bock, L. Kennedy, and Z.F. Jones. 2007. Spread of non-native grasses into grazed versus ungrazed desert grasslands. Journal of Arid Environments 71:229-235; Bock, C.E., V.A. Saab, T.D. Rich, and D.S. Dobkin. 1993. Effects of livestock grazing on Neotropical migratory land birds in Western North America. Pages 296-309 in Status and Management of Neotropical Migratory Birds. D.M. Finch and P.W. Stangel, editors. USDA, Forest Service, GTR RM-229. 422pp.; Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. Conservation Biology 8:629-644.; Krueper, D.J. 1993. Effects of land use practices on Western riparian ecosystems. Pages 321-330 in Status and Management of Neotropical Migratory Birds. D.M. Finch and P.W. Stangel, editors. USDA, Forest Service, GTR RM-229. 422pp.

[339] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20813.

vegetation, prevent regeneration of riparian plant species, physically disturb nests, alter floodplain dynamics, alter watershed and soil characteristics, alter stream morphology, and facilitate the growth of flammable nonnative plant species."[340]

The term overgrazing, used in the preceding paragraph, is defined by USFWS as "grazing activity (that) degrades riparian habitat attributes and prevents long-term health and persistence of these systems.[341] In another example, USFWS defines overgrazing as grazing activities that reduce quality and quantity of breeding habitat.[342]

Cow grazing in YBC critical habitat, as we document in this Notice, has significantly impacted riparian systems and has left little to no herbaceous food and cover for invertebrate communities. We demonstrate that abundant and healthy riparian vegetation is missing from the BLM grazing allotments that contain designated riparian YBC critical habitat along the Middle Gila. Indeed, according to USFWS, habitat degradation associated with poorly managed livestock grazing (generally identified as ''overgrazing'') is a recognized threat in 70 out of 72 (97%) of critical habitat units.[343]

Besides directly affecting YBC behavior and foraging opportunities, cow grazing causes loss of riparian regeneration. Loss of riparian habitat regeneration caused by poorly managed grazing is an acknowledged and prominent threat to YBC by USFWS,[344] and the 2014 YBC ESA listing clearly states that "managing grazing so that native riparian trees and shrubs will regenerate on a regular basis is especially beneficial."[345]

Unfortunately, managing grazing for regeneration is not the case in BLM's Gila District. As documented in this Notice, cows are concentrated in riparian zones during the growing season and are removing riparian vegetation down to the roots, leaving bare ground and dust-bowl conditions. These impacts, as demonstrated in this Notice, reasonably fit the definition of overgrazing or poorly-managed grazing and are causing direct and indirect harm to YBC populations by removing habitat structure and associated prey base.

Even if it was enforced, the disingenuous "seasonal grazing" system employed by the BLM and approved by USFWS leaves critical habitat designations fully utilized at the very onset of breeding season.

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[340] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48571.

[341] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20808.

[342] *Ibid*., page 20853.

[343] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48558.

[344] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48555.

[345] *Ibid*.

To reiterate, diminished riparian and upland vegetation, as observed throughout the 7 Middle Gila allotments at issue here, negatively affect streamflow processes and impact abundance and distribution of fine sediment deposited on floodplains which is critical for the development, abundance, distribution, maintenance, and germination of trees in the riparian zone that become future YBC habitat.[346] Riparian vegetation and intact grasses are required to capture sediment during rainy seasons that becomes seedbeds for germination and growth of the riparian vegetation upon which YBC depend. Significantly grazed riparian zones fail to capture sediment and instead begin to erode. This disruption of stream flow processes ultimately leads riparian forests to senesce, unable to sustain recruitment of the new trees and unable to provide for the varied vegetative structure required for YBC cuckoo nesting and foraging. [347] This also paves the way for further establishment of invasive species.

Therefore, grazing of the severity that we have observed on the Gila District has immediate short-term impacts on Yellow-billed Cuckoo fitness as well as long-term impacts that gradually cause the loss of riparian gallery forest.

In the 2018 Biological Opinion, USFWS explicitly expresses their concerns regarding cow grazing and the threat it poses to establishment cottonwood and willow trees (and to mesquite bosque understory). For example,

> "there will be modest, residual (i.e. not fully minimized) effects to riparian habitat for locations where the applicable standards have not yet been fully achieved, either through impacts to young cottonwood/willow vegetation during winter grazing and/or understory herbivory within mesquite bosqués"… "We are concerned, however, with one to two-year changes in riparian recruitment as young vegetation is subject to herbivory which could lead to diminished, longer-term (i.e. decadal) recruitment of riparian vegetation to replace habitat that has senesced"… "Our primary concerns are with grazing during the native riparian growing season, encompassed by Brock's (1994) bud break, leaf expansion, mature leaves, flowering, fruit development, and seed dispersal stages. Fremont cottonwood bud break begins in late February and concludes in early March. Seed dispersal from these existing cottonwood trees occurs in approximately mid to late May"… "It is therefore likely that winter-season grazing (October 1 to March 30) occurs during times when riparian trees are still actively growing in the late autumn to early winter, prior to freeze-driven cessation of evapotranspiration and subsequent leaf drop, and in early spring, during recruitment and bud-break." [348]

[346] *Id.,* page 48552.

[347] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48552.

[348] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion") page 11.

Yet despite these concerns, the ITS for YBC is as follows:

> "As stated above, we cannot be reasonably certain that the proposed action will harm or harass yellow-billed cuckoos occupying the action area and thus, we do not anticipate that individuals of the species will be incidentally taken."

The reasoning leading up to this conclusion are that potential grazing effects on riparian vegetation:

> "are not quantifiable, so we relied upon your agency's assessment of riparian condition trends (see above) as well as the proposed conservation measures pertaining to riparian ecosystems (1, 4, 10, 12, 13-17, and 19; see p. 13-15 in the 2012 BO) as well as conservation measures that are intended to minimize the effects of livestock grazing to the endangered southwestern willow flycatcher (see the southwestern willow flycatcher conservation measures in the BE, pp. 17-18 and 1 through 7 on pp. 15-17 in the 2012 BO). The flycatcher-specific conservation measures implement the general guidelines for livestock grazing in southwestern willow flycatcher habitat that in Table 2 in the Southwestern Willow Flycatcher Recovery Plan (FWS 2002; Appendix G, pp. 26-27). **These recommendations can serve as yellow-billed cuckoo grazing standards until species-specific recommendations are developed.**"[349]

The first problem here is that in the 2021 Final Rule for YBC critical habitat designation, USFWS states that "because the western yellow-billed cuckoo is listed as threatened, all the units are occupied during the breeding season **and habitat would need to be protected during the nonbreeding season**, the majority of actions necessary to conserve the species would be required based on the listing of the western yellow-billed cuckoo."[350] This is a clear violation of the Administrative Procedure Act, which is intended to stop conclusions that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[351] This act also violates the Endangered Species Act requirement to use "the best scientific . . . data available."[352]

BLM's reliance on the unlawful and arbitrary 2018 consultation document in allowing continued destructive cow grazing on the Gila District's Middle Gila grazing allotments also violates the law.

To make matters worse, BLM blatantly disregards the conservation measures for livestock grazing in WFC habitat that "can serve as yellow-billed cuckoo grazing standards until species-specific recommendations are developed."[353] YBC habitat protection exists only on paper, not in practice. Based on the impacts of current BLM cow management, or

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[349] *Id*., page 9-11.

[350] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20831.

[351] Administration Procedures Act, 5 U.S. Code § 706(2)(A)

[352] 16 U.S.C. § 1536(a)(2).

[353] *Id*., page 9-11.

lack thereof as illustrated in this Notice, Yellow-billed Cuckoo are reasonably expected to continue declining until an uplisting to "Endangered" ESA status will be required.

Functional fencing is direly needed along the Middle Gila to exclude livestock. Riparian vegetation should be fully allowed to propagate for the full course of the growing season and allowed to grow continuously to surpass browse height and compete with non-native trees. YBC critical habitat should be completely protected from livestock grazing, especially in exceptional drought years. Every valuable opportunity for native tree germination and seedling establishment should be ensured. Monitored and maintained cow exclosures of designated YBC riparian Critical Habitat are essential to ensure survival, much less recovery.

GENERAL ENDANGERED SPECIES ACT VIOLATIONS

Section 7 of the ESA requires federal agencies, in consultation with USFWS, to ensure that any action authorized, funded, or carried out by the agency is not likely to (1) jeopardize the continued existence of any threatened or endangered species, or (2) result in the destruction or adverse modification of the critical habitat of such species. 16 U.S.C. § 1536(a)(2). "Action" is broadly defined to include all activities or programs of any kind authorized, funded, or carried out by federal agencies, including actions directly or indirectly causing modifications to the land, water, or air; and actions intended to conserve listed species or their habitat. 50 C.F.R. § 402.02.

In addition to the obligation to avoid jeopardizing species or destroying or adversely modifying their critical habitat under Section 7(a)(2) of the ESA, Section 7(a)(1) imposes an obligation on all federal agencies, in consultation with the USFWS, to "carry[] out programs for the conservation" of listed species. 16 U.S.C. § 1536(a)(l). 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, 898 F.2d at 1416-17 (noting that federal agencies have "affirmative obligations to conserve under [S]ection 7(a)(1)"). "Conserve" is defined by the ESA 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 [in the ESA] are no longer necessary." 16 U.S.C § l 536(a)(1).

For each proposed federal action, the action agency must request from USFWS whether any listed or proposed species may be present in the area of the agency action. 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12. If listed or proposed species may be present in such area, the action agency must prepare a "biological assessment" to determine whether the listed species may be affected by the proposed action. Id. If the action agency determines that its proposed action may affect any listed species or critical habitat, the agency must engage in formal consultation with USFWS. 50 C.F.R. § 402.14. To complete formal consultation, USFWS 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.

If USFWS concludes that the proposed action will jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, the biological opinion must outline "reasonable and prudent alternatives." 16 U.S.C. § 1536(b)(3)(A). If USFWS concludes in the biological opinion that the action is not likely to jeopardize the continued existence of a listed species, and will not result in the destruction or adverse modification of critical habitat, USFWS must provide an "incidental take statement", specifying the amount or extent of such incidental taking on the listed species, any "reasonable and prudent measures" that USFWS considers necessary or appropriate to minimize such impact, and setting forth the "terms and conditions" that must be complied with by the BLM to implement those measures. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).

The reinitiation of consultation is required and must be requested by the action agency or USFWS if discretionary federal involvement or control over the action has been retained or is authorized by law and (1) the amount or extent of taking specified in the ITS has been exceeded; (2) new information reveals effects of the action that may affected listed species or critical habitat in a manner or to an extent not previously considered; (3) the action is modified in a manner that causes an effect to a listed species or critical habitat that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action. 50 C.F.R. § 402.16(a).

To monitor the impacts of incidental take, the action agency must monitor and report the impact of its action on the listed species to USFWS as specified in the ITS. 16 U.S.C. § 1536(b)(4); 50 C.F.R. §§ 402.14(i)(1)(iv), 402.14(i)(3). If during the course of the action, the amount or extent of incidental taking is exceeded, the action agency must reinitiate consultation with USFWS immediately. 50 C.F.R. § 401.14(i)(4).

Section 9 of the ESA and its implementing regulations prohibit the unauthorized "take" of listed species. 16 U.S.C. § 1538(a)(1); 16 U.S.C. § 1533(d); 50 C.F.R. § 17.31. "Take" is defined broadly 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). Taking that is in compliance with the terms and conditions specified in a biological opinion is not considered a prohibited taking under Section 9. 16 U.S.C. § 1536(o)(2).

In addition, action agencies, such as BLM must ensure their own compliance with the ESA; an action agency "cannot abrogate its responsibility to ensure that its actions will not jeopardize a listed species" merely by relying upon a BiOp, concurrence, or other consultation document issued by the USFWS. Pyramid Lake Paiute Tribe v. U.S. Dep't of Navy, 898 F.2d 1410, 1415 (9th Cir. 1990).

The BLM and USFWS have violated and remain in ongoing violation of the ESA by failing to reinitiate consultation on the impacts of BLM's livestock grazing program on the seven Middle Gila allotments at issue here, considering that the authorized action has adversely affected, is currently adversely affecting, and will continue to adversely affect threatened and endangered species and their critical habitat in a manner and to an extent not considered.[354] This Notice details new information and substantiates that chronic and excessive overuse continues to occur on precious and protected riparian zones within the Middle Gila.

[354] 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.16(a).

When such new information becomes available, or when take has been exceeded, agencies such as the BLM and USFWS who fail to reinitiate consultation violate 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14. Besides violating the ESA, such a scheme also violates the Administrative Procedure Act requirement that federal decisions are not "arbitrary, capricious, or an abuse of discretion."[355]

Herein, the Center provides field survey results, impact analyses, and photographic evidence of allegations. The following are a sampling of photos taken by Center staff between April 4- December 7, 2022, within designated WFC and YBC critical habitat on A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments along the Gila River in Pinal County, Arizona.

SPECIFIC ESA VIOLATIONS

The following descriptions and photos, from cow impact surveys completed within the BLM's Middle Gila allotments from April 4 through December 7, 2022, represent new information that indicate that BLM's cow grazing program is diminishing and degrading designated riparian Critical Habitat. Reinitiation of consultation must take place based on new information presented in this Notice,[356] in order to fulfil the action agency's **duty to protect and conserve** listed species.

The purpose of our Cow Impact Survey (CIS) surveys was to determine and quantify cow impacts in designated critical habitat within the Middle Gila allotments. Trained surveyors carefully investigated critical habitat areas for evidence of livestock presence including feces, trails, wallows, as well as extent and severity of grazing pressure on vegetation. Data were recorded and multiple georeferenced photo points were taken along each survey segment to document evidence of livestock impacts. These data represent comprehensive and quantifiable inspections of riparian and xeroriparian conditions on BLM's Middle Gila allotments. Added to the descriptions and photo for each allotment are CIS maps.

Following field surveys, each stream segment's "overall impact level" (defined as absent, light, moderate or significant) was calculated. To determine overall impact level, condition severity scores for each segment endpoint were collated and weighted. Generally, if specific category impacts were light or limited in four categories, the overall impact was considered light. If impact severity in five or more categories were light, then the overall impact was evaluated as moderate. Overall impact scores of moderate also included combinations of limited, light and moderate scores in all six categories. If three or more category conditions were moderate, then the overall impact level rose to significant. If at least one impact category was severe or pervasive, then the overall impact level was evaluated as significant. Color-coded survey segments follow river centerline on all maps. Colors correspond to grazing impact level.

[355] 5 USC §706(2)(A).

[356] 16 U.S.C. § 1532, 50 CFR § 17.21, 16 U.S.C. § 1536(b)(4).

In the 2018 BO, USFWS states that BLM's

> "management practices reduce the likelihood of measureable effects on yellow-billed cuckoos, their habitat, and their prey base. We do, however, anticipate there will be modest, residual (i.e. not fully minimized) effects to riparian habitat for locations where the applicable standards have not yet been fully achieved, either through impacts to young cottonwood/willow vegetation during winter grazing and/or understory herbivory within mesquite bosqués."[357]

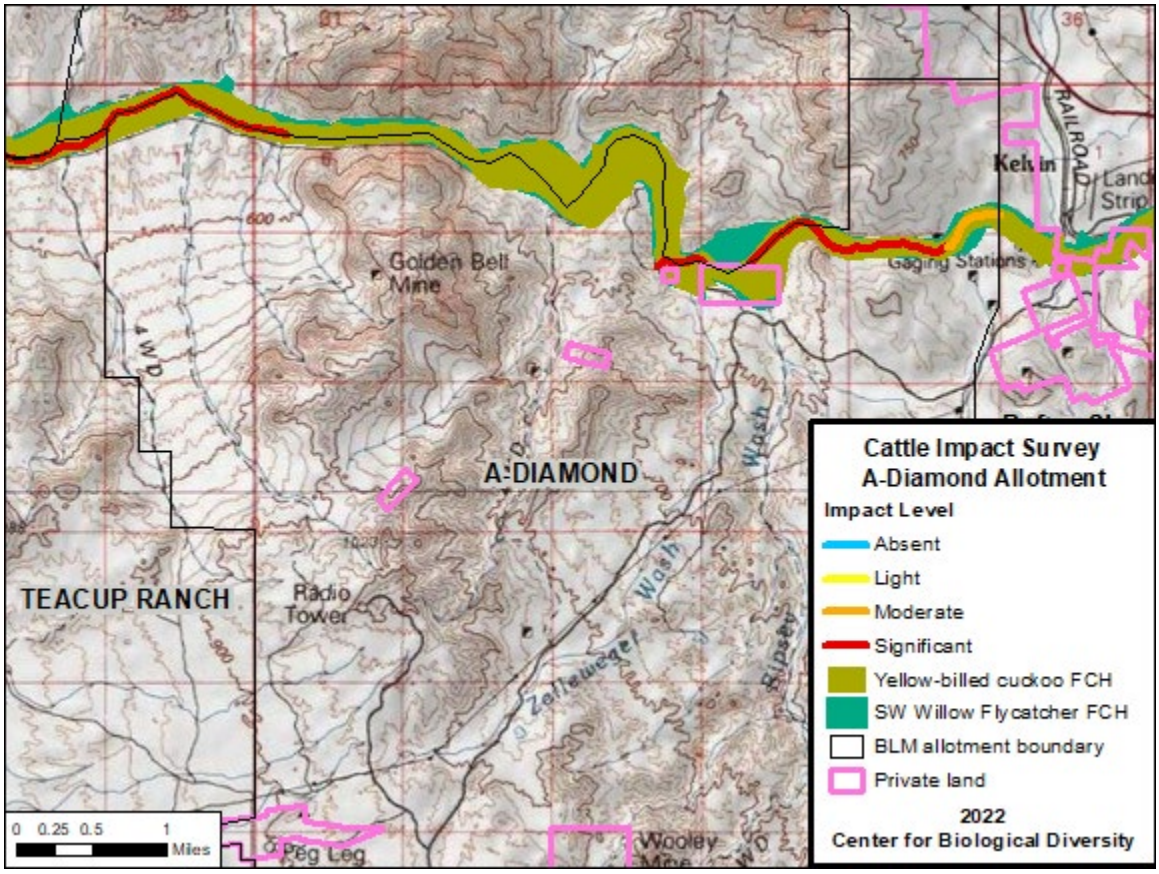
The following photographs of designated Critical Habitat presented in this Notice not only corroborate this sentiment, but illustrate widespread, significant cow impacts. This information represents new information revealing that BLM-authorized cow grazing is harming WFC and YBC Critical Habitat to an extent not previously considered. Reinitiation of consultation must follow.[358]

The following documentation of allotment conditions support our contention that reinitiation of ESA Section 7(a)(2) consultation is required to prepare new Incidental Take Statements that are not arbitrary and capricious, and that have objective, clear, and enforceable triggers for reinitiation of consultation, and to adopt reasonable and prudent measures that are tethered to habitat conditions caused by the permitted activities (i.e., grazing).

[357] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion") page 9.

[358] 50 CFR 402.16.

A-Diamond allotment



Cow Impact Surveys (CIS) were conducted by the Center on the **A-Diamond allotment** on April 4, 2022, and again on December 3rd and 6th, 2022. We began surveying for cow impacts just west of Kelvin bridge. Impacts on the A-Diamond allotment, near Kelvin, began as light and transient. Riparian vegetation was predominantly thick, and riverbanks were steep. Impacts appeared mostly older and transient. Though the area was not currently being utilized by cows, the riparian zone had clearly been grazed and browsed, with soils compacted and bosques containing numerous examples of cow trails and feces. Fecal loads were observed on the Arizona Trail.

Heading further downstream, cow impacts intensified dramatically. The area was characterized by numerous examples of significantly impacted and denuded mesquite bosques littered with cow sign including numerous cow trails, heavy fecal loads, soil disturbances and a virtually absent understory. Mature mesquite branches have been sawn to allow cows better access to the river. The degree of vegetation removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.


Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.102251, -111.008309 (1); 33.101868, -111.009783 (2). April 4, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.102335, -111.019918 (1). 33.101185, -111.016821 (2). December 3, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in an unallotted area immediately north of the A-Diamond allotment, Pinal County. 33.117612, -111.073169. December 3, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.101706, -111.018666 (1); 33.101167, -111.019439 (2). December 3, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.116912, -111.072833. December 3, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.116912, -111.072833. December 3, 2022.


Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.116912, -111.072833 (1); 33.117786, -111.075493 (2). December 3, 2022.

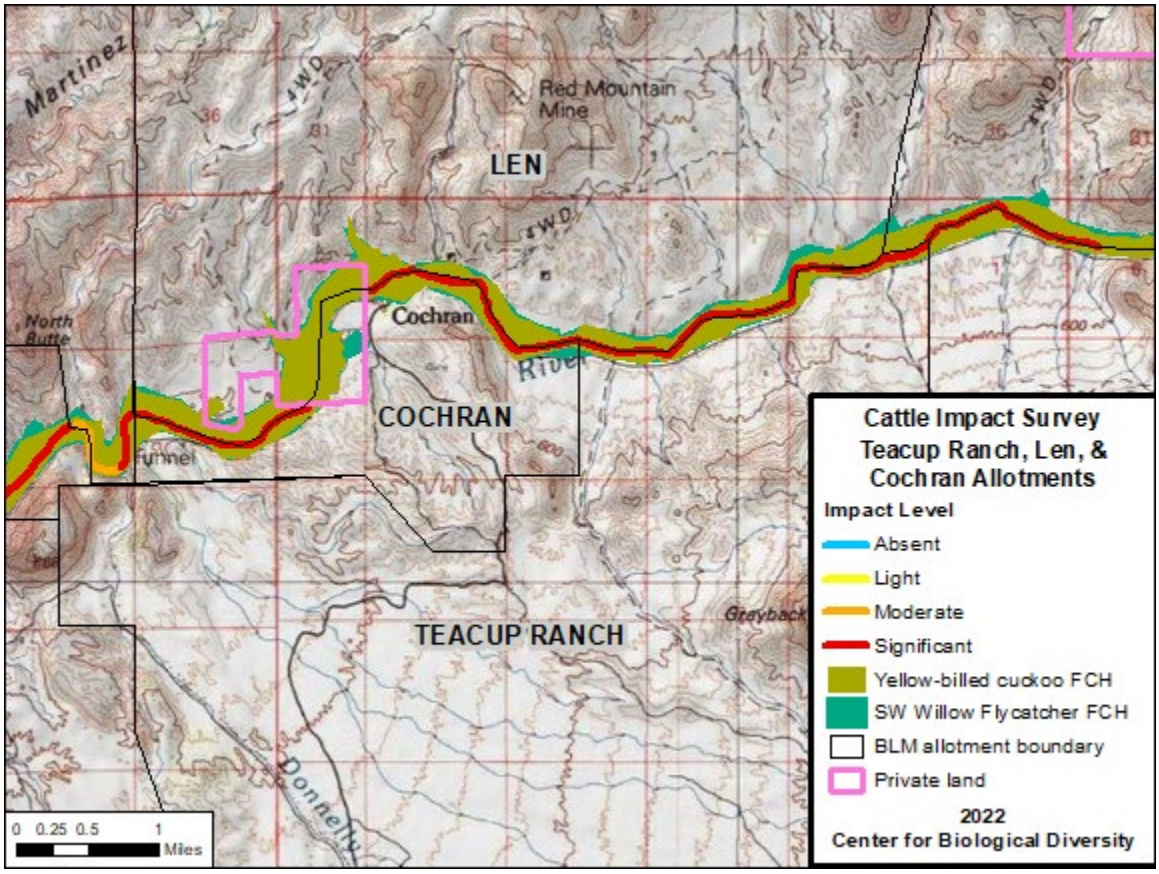

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.107242, -110.983469 (1); 33.106901, -110.98452 (2). December 3, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.116955, -111.079281. December 6, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.101724, -111.018859 (1); 33.101292, -111.016091 (2). December 3, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat in the A-Diamond allotment, Pinal County. 33.115928, -111.082861. December 6, 2022.

Teacup Ranch allotment



Cow Impact Surveys (CIS) were conducted by the Center on the **Teacup Ranch allotment** on April 4-5, 2022, and again in December 6-7, 2022. We documented significant impacts and unauthorized cows actively grazing in the riparian corridors of the Gila outside of their permitted season of use. During our April surveys, two separate and unauthorized groups of cows were observed within critical habitat designations. Fence lines were compromised where the first group was seen moving north across the train tracks and into the riparian zone. The second group included >25 head. A third group of approximately 20 head of cows was observed on the nearby LEN allotment across the river.

In December, we noted significant cow impacts in the uplands. Numerous wallows were recorded in open uplands and in significantly impacted mesquite bosques. In the riparian zone, brushy vegetation was thick, but obvious cow trails indicate that they crash through it to access water. Cow impacts on Teacup Ranch were characterized as severe and pervasive (aka 'significant'). Cows were trampling and shearing streambanks contributing to sedimentation and erosion. Consistent significant impacts in riparian zones were observed, except in a few places where cows avoided thick brush. The degree of vegetation removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.

Unauthorized cows and fresh feces in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.112153, -111.09691 (1); 33.112018, -111.099044 (2). April 5, 2022.

Unauthorized cows in grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.105756, -111.112316. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.105747, -111.112873 (1); 33.103371, -111.123073 (2). April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.105253, -111.113206. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.108835, -111.100685. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.107311, -111.104398. April 5, 2022.

Grazed yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.108722, -111.10591. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.102934, -111.119447. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.113147, -111.089013. December 6, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.111856, -111.099838. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.111731, -111.100226. December 7, 2022.

Browsed *Tamarix* (w/ closeup) in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.111299, -111.099888. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.109789, -111.100532. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.109267, -111.100213. December 7, 2022.


Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.107427, -111.104097 (1); 33.109024, -111.100417 (2). December 7, 2022.

Browsed mesquite saplings on the Teacup Ranch allotment, Pinal County. 33.106852, -111.105975. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.106646, -111.110184. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.106439, -111.108886. December 7, 2022.


Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.103281, -111.116410. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.106043, -111.112015. December 7, 2022.

Grazed yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.109024, -111.100417. December 7, 2022.

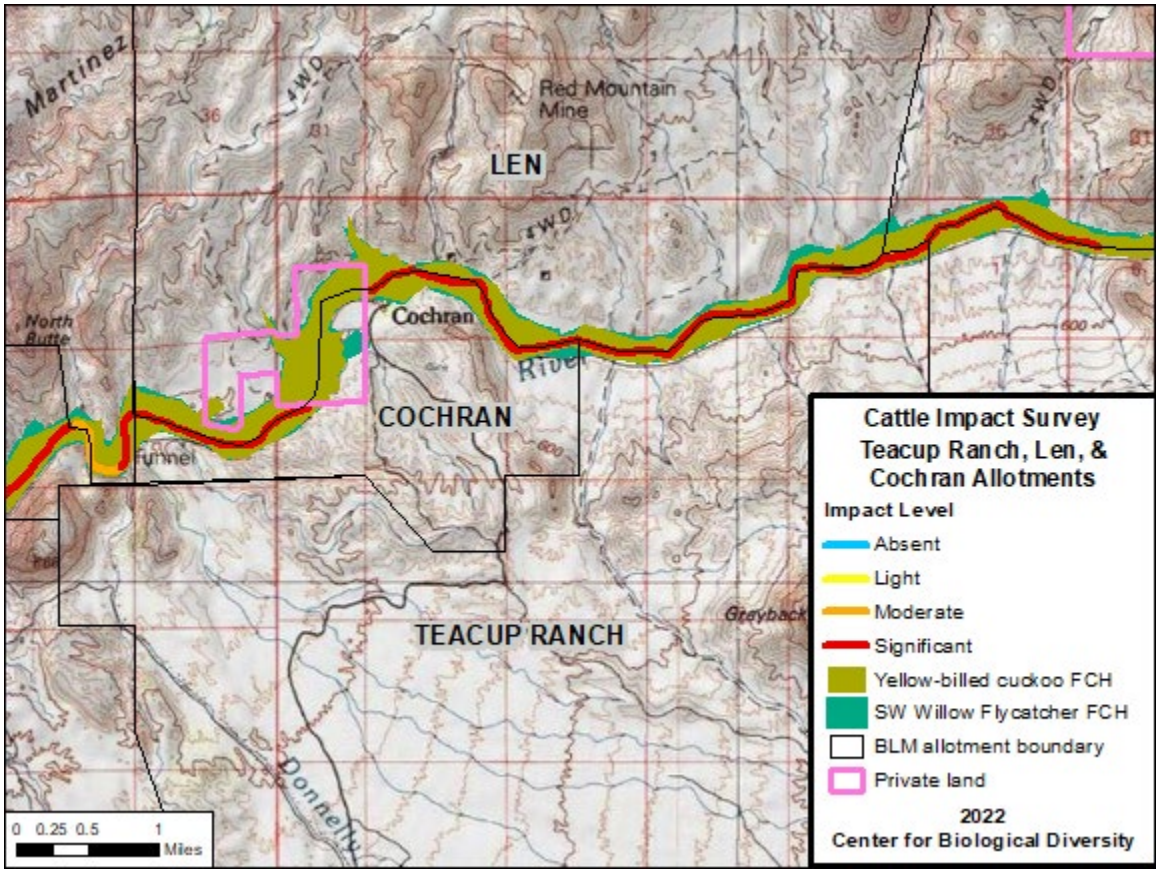
Grazed yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.103167, -111.117744. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.102952, -111.120337. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.10374, -111.122751. December 7, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County. 33.103997, -111.124979. December 7, 2022.

LEN allotment



Cow Impact Surveys (CIS) were conducted by the Center on the **LEN allotment** on April 5, 2022. We documented significant impacts and unauthorized cows actively grazing in the riparian corridors of the Gila outside of their permitted season of use. Multiple groups of cows were observed with long-term disturbances apparent. The first herd consisted of approximately 20 head, with horns and equipped with bells. A very well-used crossing point was observed on the river. Fences were down and fresh damage was pervasive. The LEN allotment appeared heavily burdened by cows.

Cow impacts on LEN allotment were characterized as severe and pervasive (aka 'significant'). We documented trails, rutting, wallows, soil compaction and trampling of streambanks contributing to sedimentation and erosion. Mesquite bosques generally lacked an herbaceous understory. The degree of vegetation removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.112369, -111.143812. April 5, 2022.

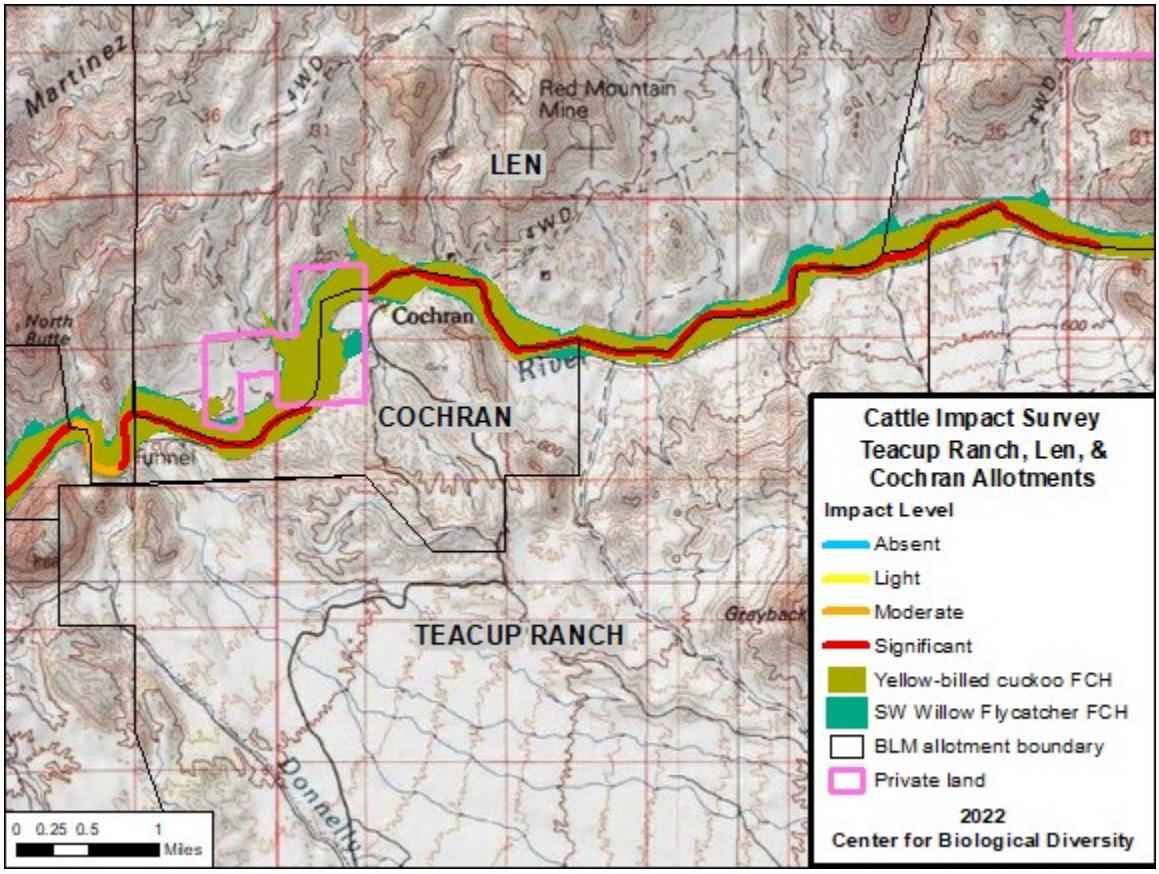
Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.110646, -111.138898 (1); 33.108244, -111.104151 (2). April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.108909, -111.103994 (1); 33.114217, -111.092821 (2). April 5, 2022.

An open and a fallen fence on grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.112557, -111.099988 (1), 33.112881, -111.098014 (2). April 5, 2022.

Unauthorized cows on grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.112881, -111.098014. April 5, 2022.

Cochran allotment



Cow Impact Surveys (CIS) were conducted by the Center on the **Cochran allotment** on April 5-6, 2022, and again on December 2, 2022. We documented significant impacts and unauthorized cows actively grazing in the riparian corridors of the Gila outside of their permitted season of use. For example, riparian zones in the Cochran allotment were still inundated with cows in April, detected visually and audibly throughout the entirety of the survey. The allotment was defined by cow damage both old and new, indicative of chronic grazing pressure within critical habitat designations. Numerous trails were observed from uplands down to riparian zones. Feces were ubiquitous. Fencing was compromised with many points of entrance and exit. The fence between Horsetrack and Cochran allotments was down in numerous places. No boundaries appeared in place to keep cows on private land; they were free to roam and graze at will. Critical habitat had also been burned by fire on the Cochran allotment.

In December, we recorded continued significant cow impacts. Cow impacts on Cochran critical habitat were characterized as severe and pervasive (aka 'significant'), including in designated uplands and mesquite bosques. Numerous examples of wallows, trails, and soil disturbances were recorded. Cows were trampling and shearing streambanks contributing to sedimentation and erosion. Mesquite bosques generally lacked an herbaceous understory. Mature mesquite trees were observed having been cut and removed by humans. The degree of vegetation

removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.

Burned southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. Unauthorized cows were present during surveys. 33.095916, -111.162237. April 6, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.11014, -111.139334. April 5, 2022.

Cow and vehicle impacts in grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.110571, -111.141995. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.108019, -111.139077. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.105251, -111.136502. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.103921, -111.135343. April 5, 2022.

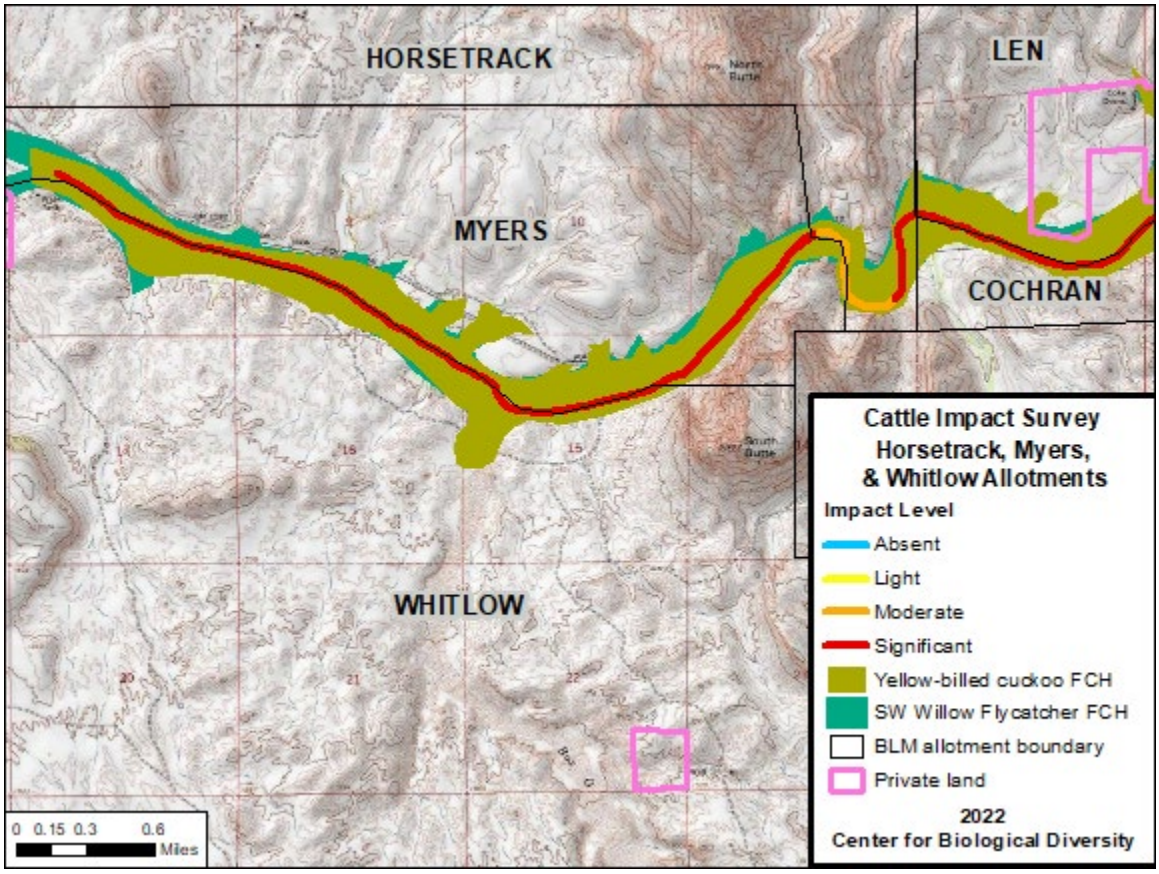
Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.108019, -111.139077. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.103873, -111.130065. April 5, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.095224, -111.174046, 4-6 (1), 33.096608, -111.176792 (2). December 2, 2022.

Mature mesquite trees cut to stumps in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County. 33.096105, -111.179389. December 2, 2022.

Horsetrack allotment



Cow Impact Surveys (CIS) were conducted by the Center on the **Horsetrack allotment** on April 6, 2022, and again on December 2, 2022. We documented moderate to significant impacts and unauthorized cows actively grazing in the riparian corridors of the Gila outside of their permitted season of use. Fresh cow impacts were evident and ongoing into WFC breeding season. Significantly impacted riparian zones were littered with feces and stream banks were trampled and heavily eroded. Numerous instances of bare ground were noted leading to chiseled stream banks.

No fence was observed at the boundary of Horsetrack and Myers allotments, and the fence between Horsetrack and Cochran was down in numerous places. Consistent significant impacts in riparian zones were observed, except in a few places where cows avoided thick brush. The degree of vegetation removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.093329, -111.182023. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.093527, -111.184269. April 6, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.095798, -111.188168. December 2, 2022.

Feces in the water in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.091244, -111.184784. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.093329, -111.182066. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.091316, -111.184012 (1); 33.094599, -111.182338 (2). December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.091855, -111.18354 (1); 33.093352, -111.181913 (2). December 2, 2022.

Trampled sediment banks in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.091602, -111.184238 (1); 33.09437, -111.186491 (2). December 2, 2022.

Open fence lines in trampled southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.093352, -111.181913. December 2, 2022.

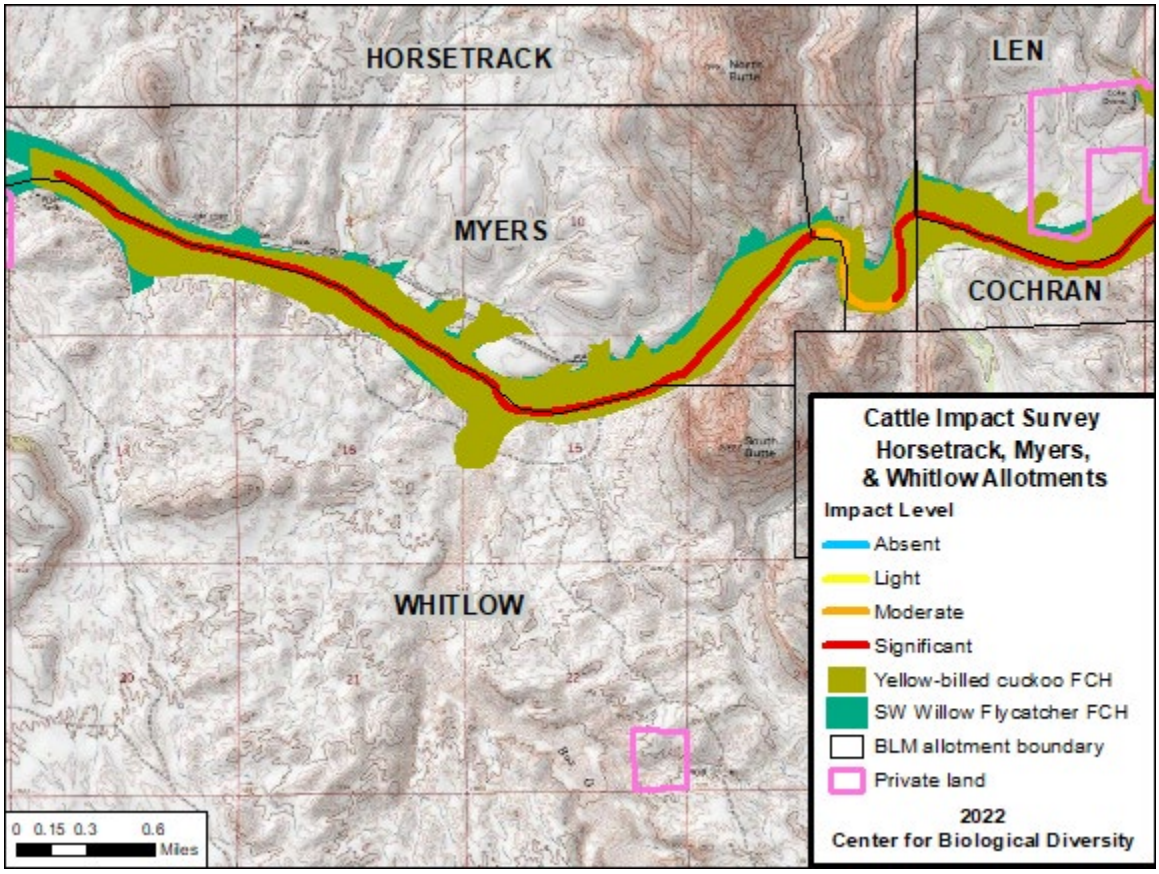
Open fence lines in trampled southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.093352, -111.181913. December 2, 2022.

Browsing of fresh shoots on riparian trees (including *Tamarix*) was a common sight in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.093892, -111.181966 (1); 33.093329, -111.182066 (2). December 2, 2022.

Bank shearing in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.094641, -111.182323. December 2, 2022.

Downed fence behind cut mesquite tree at Horsetrack/ Cochran boundary in grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County. 33.094887, -111.182252. December 2, 2022.

Myers allotment



Cow Impact Surveys (CIS) were conducted by the Center on the **Myers allotment** on April 6, 2022, and again on December 2, 2022. We documented significant impacts and unauthorized cows actively grazing in the riparian corridors of the Gila outside of their permitted season of use. Cows were observed crossing from Meyers allotment into Whitlow, and both fresh and long-term disturbances were apparent. The riparian corridor on Myers allotment burned last season. The ground was unstable and dangerous with evidence of underground fires apparent. There was clear sign that cows have not been seasonally excluded, and cow damage to burn grow-back was pervasive.

Cow impacts throughout the Myers allotment were characterized as severe and pervasive (aka 'significant'). We documented trails, rutting, wallows, soil compaction and trampling of streambanks contributing to sedimentation and erosion. Mesquite bosques generally lacked an herbaceous understory. No fence was observed at the boundary of Horsetrack and Myers allotments. The degree of vegetation removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.

Burned and grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.092316, -111.196178. April 6, 2022.

Burned and grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.092256, -111.193046 (1); 33.091573, -111.193432 (2). December 2, 2022.

Burned and grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.089386, -111.19828. April 6, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.091969, -111.193067. December 2, 2022.

Grazed and eroding southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.091573, -111.193432 (1); 33.091117, -111.193703 (2). December 2, 2022.

Eroding banks in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.090614, -111.194411. December 2, 2022.

Browsing of fresh shoots on riparian trees (including *Tamarix*) was a common sight in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.094827, -111.189448. December 2, 2022.

Browsing of fresh shoots on riparian trees was a common sight in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.093102, -111.192345. December 2, 2022.

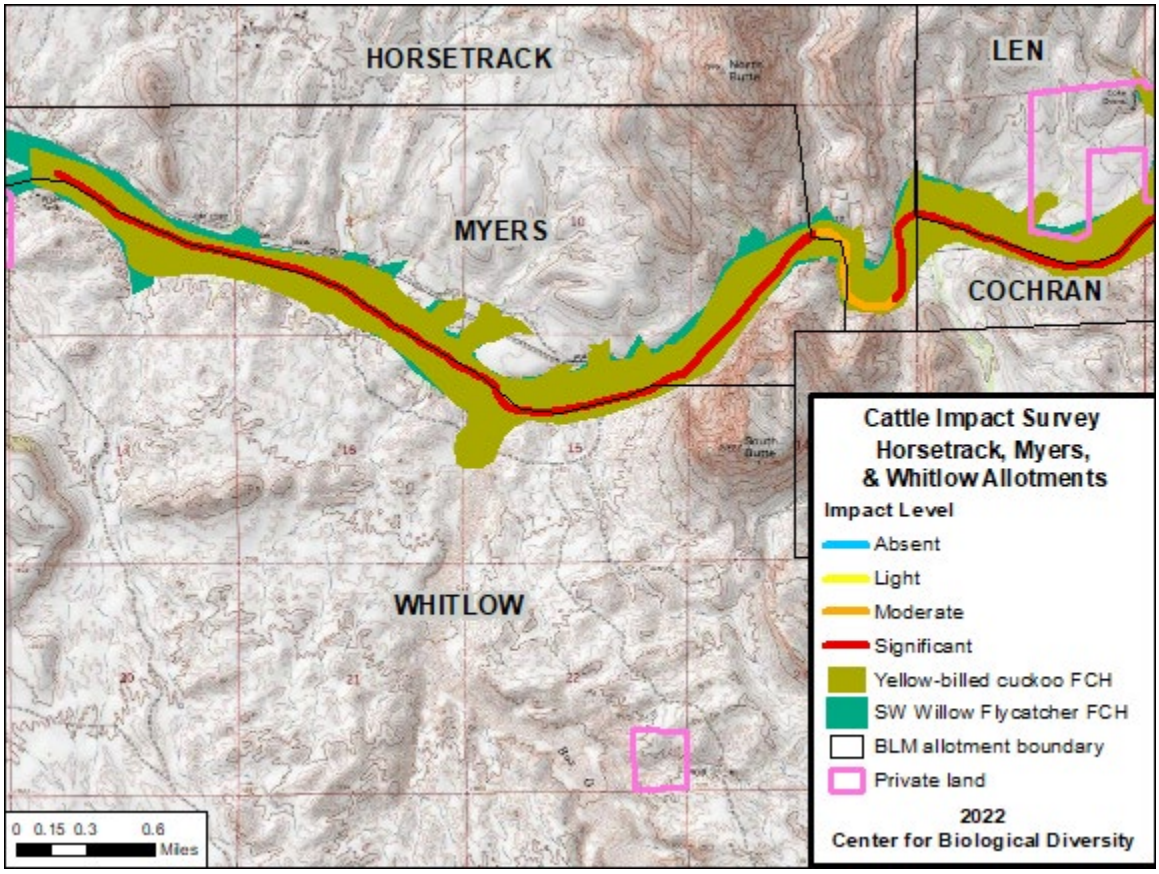
Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.084803, -111.209107. December 2, 2022.

Large cow trail in grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.084803, -111.209494. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.098993, -111.244713. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County. 33.095618, -111.189984. December 2, 2022.

Whitlow allotment



Cows Impact Surveys (CIS) were conducted by the Center on the **Whitlow allotment** on April 6, 2022, and again on December 2, 2022. We documented significant impacts and unauthorized cows actively grazing in the riparian corridors of the Gila outside of their permitted season of use. Impacts were recent during both surveys, and generally scattered as river access is limited by steep banks and dense vegetation (see photos). The mouth of Box O Wash allows access and cows were observed here during surveys. The floodplain here is significantly impacted and probably has been for a very long time. A heavy cow trail heads upstream on the Gila from the confluence of Box O Wash. Cows were observed on the Myers allotment from the Whitlow side of the river; it's clear that cows can easily move between these allotments by wading the river.

Cow impacts throughout the Whitlow allotment were characterized as severe and pervasive (aka 'significant'). We documented trails, rutting, wallows, soil compaction and trampling of streambanks contributing to sedimentation and erosion. Mesquite bosques generally lacked an herbaceous understory. The degree of vegetation removal and soil disturbances has diminished the conservation role of this designated habitat for both WFC and YBC.

Unauthorized cows crossing the Gila in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment on April 6, 2022 (1). This fence line was down on December 2, 2022 (2). 33.085658, -111.201885.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.084587, -111.211125. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.084695, -111.211961. December 2, 2022.

The heavily impacted mouth of Box O Wash in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.084713, -111.212712. December 2, 2022.


Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.089693, -111.220337 (1); 33.083382, -111.214379 (2). December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.089753, -111.221617. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.097063, -111.242252. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.096668, -111.242381. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.095949, -111.239377. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.096111, -111.240364. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.095338, -111.23942. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.093971, -111.239377. December 2, 2022.

Grazed southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment. 33.093702, -111.239763. December 2, 2022.

CONCLUSION

Nearly all designated WFC and YBC Critical Habitat surveyed by the Center on the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments on BLM's Gila District, in Pinal County, were significantly damaged by authorized and unauthorized cows. Riparian zones are being managed by BLM in a way that will ensure acute and chronic degradation instead of fostering WFC and YBC habitat recovery. Riparian and upland vegetation has been significantly impacted with very little riparian forest regeneration observed. The law prohibits any action that reduces "appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species."[359] The law also prohibits any action causing "direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species."[360]

[359] 50 CFR § 402.02; 16 U.S.C. 1531 *et seq*.

[360] *Ibid.*

In this Notice, we've established that livestock impacts to WFC are well-known and well-documented.[361] We've also presented new information regarding cow grazing and recent wildfires have dramatically changed circumstance on the ground. Our findings are consistent with USFWS Critical Habitat publication findings that Yellow-billed Cuckoo are in decline due to "well documented"[362] habitat loss, that cows preclude regeneration of cuckoo habitat (which is well documented in the scientific literature), and that cuckoo habitat in AZ "needs to be conserved".[363] We've also established that BLM does not follow grazing rules and Conservation Measures, and that ITS in the 2012 and 2018 Biological Opinions are ineffectual.

The purpose of this Notice is to (1) compel reinitiation of ESA Section 7(a)(2) consultation[364] to remedy BLM authorized grazing activities that are impairing WFC and YBC and destroying their designated Critical Habitat in a manner or to an extent not previously considered, and to incorporate new information and the best available conservation and climate science to support and achieve a land management strategy that fosters ecosystem recovery; (2) to compel reinitiation of ESA Section 7(a)(2) consultation to prepare new Incidental Take Statements ("ITS") that are not arbitrary and capricious, and that have objective, clear, and enforceable triggers for reinitiation of consultation, and to adopt reasonable and prudent measures that are tethered to habitat conditions caused by the permitted activities (i.e., grazing); (3) to force compliance with your ESA Section 7(a)(1) obligation of "carrying out programs for the conservation of endangered species,";[365] (4) to halt ongoing violations of Section 9 of the ESA and its implementing regulations that prohibit the unauthorized "take" of any endangered or threatened species of fish or wildlife; and, (5) to enforce the Endangered Species Act Section 7(d) which prohibits Federal agencies from making "any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection 7(a)(2)"[366] [insuring any action is not likely to jeopardize the continued existence of an endangered species or result in the destruction or adverse modification of Critical Habitat].

The May 21, 2012, and August 20, 2018, Biological Opinions require reinitiation to meaningfully incorporate the information presented in this Notice, and to meaningfully incorporate the best available climate predictions that foretell the extreme conditions that are only beginning to occur here in the southwest.

To summarize our concerns:

1. The 2012 and 2018 Biological Opinions are inadequate and illegal because:
    a. The 2012 and 2018 Biological Opinions allow designated riparian Critical Habitat along the Middle Gila to be managed by a disingenuous scheme that provides no riparian exclosures and instead uses unenforced seasonal

[361] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico.

[362] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20813.

[363] *Ibid.*

[364] 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

[365] 16 U.S.C. § 1536(a)(1)

[366] 16 U.S.C. § 1536(d).

restrictions and disregarded cow grazing utilization metrics that do not protect riparian dependent endangered species;

b. The 2012 Biological Opinion's Incidental Take Statement for WFC is not related to the habitat impacts associated BLM's authorized cow grazing action, and only (weakly) deals with unauthorized livestock and parasitism that can only occur within the seasonal exclusion time (WFC nesting season). It provides no enforceable protection for WFC designated riparian Critical Habitat essential for long-term survival and recovery.

c. Likewise, the 2018 Biological Opinion's Incidental Take Statement for yellow-billed cuckoo contains no protection at all for essential habitat features required for YBC recovery and makes it impossible for authorized grazing to ever result in a 'Take'.

d. The 2012 and 2018 Biological Opinions provide no discussion on climate change effects to WFC and YBC, and failed to include and consider the additive and cumulative impacts of riparian cow grazing and climate change for despite an extensive body of scientific literature that exists regarding climate change and cow grazing impacts.[367]

e. The authorized livestock grazing season occurs during times when native riparian trees are still actively growing in the late autumn to early winter, during recruitment and bud-break[368] and during winter/spring germination of native riparian trees[369], leaving sprouts and seedlings vulnerable to consumption by cows.

2. Reinitiation of consultation must take place expeditiously based on the facts above as well as that:

   a. the new information presented in this Notice documents effects of the BLM's cow grazing program that is affecting listed species and designated riparian Critical Habitat in a manner and to an extent not considered in the 2012 and 2018 Biological Opinions; and,

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[367] For example: Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild and Feral Ungulates; Robert L. Beschta, Debra L. Donahue, Dominick A. DellaSala, Jonathan J. Rhodes, James R. Karr, Mary H. O'Brien, Thomas L. Fleischner, and Cindy Deacon Williams, Environmental Management (2013) 51:474-491.; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192, Page 59992, October 3, 2014.; Livestock Production, Climate Change, and Human Health: Closing the Awareness Gap, Debra L. Donahue, Environmental Law Reporter, 45 ELR 11112, 12-2015, http://ssrn.com/abstract=2696741; citing: *See, e.g.*, Beschta et al., *supra* note 59, at 476-81; Ripple et al., *supra* note 2, at 2, 3. Almost nothing is known, however, about the ability of shrublands to sequester carbon. *See* Jack A. Morgan et al., *Carbon Sequestration in Agricultural Lands of the United States*, 65 J. Soil & Water Conservation 6A, 7A (2010), doi:10.2489/jswc.65.1.6A. This is a "critical research need," *see id.*, particularly since shrubs dominate large areas of the public lands.; Climate change scenarios of herbaceous production along an aridity gradient: vulnerability increases with aridity, Carly Golodets, Marcelo Sternberg, Jaime Kiegel, Bertrand Boeken, Azlmen Henkin, No'am G. Silgmean and Eugene D. Ungar, DOI 10.1007/s00442-015-3234-5, February 7, 2015.; Riparian vegetation of ephemeral streams, Stromberg, J.C., Setaro, D.L., Gallo, E.L., Lohse, K.A. and Meixner, T., *Journal of Arid Environments*, *138*, 2017, pages 27-37.

[368] *Ibid.*

[369] Stromberg, J.C., 1997. Growth and survivorship of Fremont cottonwood, Goodding willow, and salt cedar seedlings after large floods in central Arizona. The Great Basin Naturalist, pp.198-208.

b. the new information presented in this Notice documents that cow grazing on BLM allotments along the Middle Gila has been and continues to be modified in a manner that is causing an effect to listed species and their Critical Habitat that was not considered in the 2012 and 2018 Biological Opinions.[370]

c. the new information presented in this Notice documents that a significant area along the Middle Gila is now in post-fire recovery, yet continues to receive authorized and unauthorized cow impacts. Fire has eliminated mature, reproductive riparian trees further reducing the chances of future recruitment events. BLM must now consider the additive and cumulative impacts of riparian cow grazing and climate change in combination with fire recovery and spread of invasive species.

3. Destructive cow grazing in designated riparian Critical Habitat along the Middle Gila continues currently. This destructive cow grazing must cease during the new consultation to prevent the BLM from further jeopardizing WFC and YBC and from further destroying their designated riparian Critical Habitat.; and,

4. The BLM's reliance on the 2012 and 2018 Biological Opinions in allowing continued cow grazing along the Middle Gila's designated riparian Critical Habitat on the 7 allotments[371] noted in this Notice is not legal. The BLM must ensure its own compliance with the Endangered Species Act as action agency "cannot abrogate its responsibility to ensure that its actions will not jeopardize a listed species" merely by relying upon a Biological Opinion issued by USFWS.[372]

To reiterate the importance of the conservation issues presented here, the allotments in this Notice are immediately adjacent to what is considered the core area of WFC recovery in Arizona, which is the lower San Pedro River. In other words, the Middle Gila is the first available expansion area for WFC dispersing out from the core population on the lower San Pedro. The ecosystem here is legally required to be managed in a manner that will foster and promote WFC recovery and population expansion, and not be sacrificed unjustifiably to the cow industry for private profit.

Considering the documentation and images presented in this Notice, we reiterate that YBC breeding habitat consists ideally of large, non-fragmented landscapes of successional cottonwood-willow gallery forest, with dense multistory layers of vegetation in both the subcanopy and ground layers, and the presence of perennial surface water.[373] Range-wide breeding habitat is composed of riparian woodlands within floodplains or in upland areas or

[370] 50 C.F.R. § 402.16(a).

[371] A-Diamond, Teacup Ranch, LEN, Cochran, Horesetrack. Myers, and Whitlow allotments, BLM Gila District, Tucson Field Office.

[372] *Pyramid Lake Paiute Tribe v. U.S. Dep't of Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).

[373] Rosenberg, K.V., R.D. Ohmart, W.C. Hunter, and B.W. Anderson. 1991. Birds of the Lower Colorado River Valley. Univ. Arizona Press, Tucson, AZ. 416pp.; Johnson, M.J., S.L. Durst, C.M. Calvo, L. Stewart, M.K. Sogge, G. Bland, and T. Arundel. 2008. Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use Along the Lower Colorado River and its Tributaries, 2007 Annual Report. USGS, Open File Report 2008-1177. 274pp.

terraces with an overstory and understory vegetation component in contiguous or nearly contiguous patches adjacent to intermittent or perennial watercourses.[374]

USFWS also stated that YBC habitat "would need to be protected during the nonbreeding season, the majority of actions necessary to conserve the species would be required based on the listing of the western yellow-billed cuckoo."[375] What should be an obvious point, it is especially important in designated WFC and YBC breeding habitat that riparian and understory vegetation remain intact by the onset of breeding season. But once again, we document blatant and illegal mismanagement of natural resources by the BLM. Overall, our habitat surveys found that WFC and YBC critical habitat extensively lacked the vegetative structure needed to serve its intended purpose in supporting WFC and YBC recovery and that livestock grazing is a primary driver of these circumstances.

According to climate forecasters, prolonged, persistent drought is predicted for the West, where below-average precipitation and above-average temperatures are most likely to occur. [376] Putting this into context, it has been estimated that within the past one hundred years, 95 percent of riparian habitat in the West has already been destroyed[377] and this destruction is ongoing. The images of widespread livestock disturbances presented in this Notice should raise concern about widespread destruction and future condition of WFC habitat in one of their few remaining strongholds. According to USFWS, "if an area with grazing activity degrades riparian habitat attributes and prevents long-term health and persistence of these systems, it is considered overgrazing."[378] In another example, USFWS defines overgrazing as grazing activities that reduce quality and quantity of breeding habitat.[379] USFWS identified "overgrazing in riparian (including xeroriparian) habitat as an ongoing threat to western yellow-billed cuckoo habitat that may require special management" and "where water is limited and recruitment events are infrequent, grazing at any level can impact riparian habitat."[380] These statements support and necessitate the need for cow exclosures along the Middle Gila.

Therefore, in the context of ongoing and worsening drought trends in the region, there is no longer room for additional and significant ecological stressors such as cow grazing in what little remains of our native desert riparian ecosystems. An important contention, illustrated by the photos in this Notice, is that by authorizing grazing all winter long until April, critical habitat designations are left with full grazing impacts at the very onset of WFC breeding season. It is an ineffective strategy for federal agencies to only consider the direct impacts of cows to ESA-listed

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[374] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20939.

[375] *Ibid.,* page 20831.

[376] Garfin, G., Jardine, A., Merideth, R., Black, M. and LeRoy, S. eds., 2013. Assessment of climate change in the southwest United States: a report prepared for the National Climate Assessment.

[377] Krueper, D.J., 1996. Effects of livestock management on Southwestern riparian ecosystems. *Shaw, DW, and Finch, DM, tech. coords. Desired future conditions for southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RM-GTR-272. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station*, pp.281-301.

[378] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20808.

[379] *Ibid*., page 20853.

[380] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, Department of The Interior Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021.

birds, such as direct nest disturbances. The indirect effects of cows on vital habitat characteristics, namely the fully utilized herbaceous vegetation at the onset of breeding seasons, must be taken into account. This is made worse by a lack of adherence to seasonal restrictions and utilization limits. Simply put, cow management on the Middle Gila allotments is abhorrent.

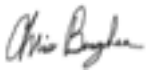
Full cow exclusion is required to sustain and promote WFC and YBC designated critical breeding habitat, as well as habitat for every other native species that depends on undisturbed successional riparian and upland habitats. Supported by the best available science, full exclusion is the best way to mitigate for climate change and increasing aridification. In the ongoing and escalating climate and extinction crises, public land managers must begin meaningfully adapting to circumstances. They must manage public lands for water, wildlife, and functional ecosystems, which represent the greatest good for the greatest number of people.

Thank you for your attention to this Notice of legal violations. We will continue to be available to discuss these matters at your convenience; however, as destructive illegal cow grazing continues, we are not willing to further delay filing a lawsuit should USFWS and BLM continue failing to correct these violations within 60 days.

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,



Chris Bugbee
Southwest Conservation Advocate

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

CC: Arizona Game and Fish Department Director Ty Gray

APPENDIX A

Attached is 'Appendix G' from the WFC Recovery Plan. To view the document, right click on the image, select "Acrobat Document Object" … ' and "Open."

Appendix G.

Management of Livestock Grazing in the Recovery of the Southwestern Willow Flycatcher

A. Introduction

Breeding habitat for the southwestern willow flycatcher is restricted to riparian ecosystems. As a result of multiple factors, southwestern riparian ecosystems are among the most endangered in North America. In arid western North America, livestock overgrazing has detrimental effects on riparian ecosystems (Ames 1977, Knopf and Cannon 1982, Kaufman and Krueger 1984, Skovlin 1984, Fleischer 1996, Ohmart 1996, Belsky et al. 1999), including many of the attributes of southwestern willow flycatcher nesting habitat (USFWS 1995). However, the effects of livestock grazing vary over the range of the flycatcher, due to variations in grazing practices, climate, hydrology, ecological setting, habitat quality, and other factors. Also, other stressors affect the flycatcher's habitat to varying degrees, including water management practices, stream channel control, recreational use, and agricultural activities. In some situations, these and other factors may aggravate livestock impacts, and are sometimes difficult to separate from grazing effects. Livestock grazing has been a prevalent industry in the region for 200 years or more, but there exists a limited body of rigorous industry records or scientific research that documents livestock grazing affects on the environment (Larsen et al. 1998). Most of the available research has shown negative impacts to a host of biological resources. Addressing the issue of livestock management in the context of recovery of the southwestern willow flycatcher is therefore complicated.

Ideally, this issue would be approached by examining information that specifically compares the effects of various grazing practices on the southwestern willow flycatcher and its habitat. Because this information remains to be researched, the Technical Subgroup was compelled to approach the question indirectly by reviewing literature pertaining to grazing within riparian areas. Questions we tried to address included: What direct effects does grazing have on southwestern willow flycatchers? What are the effects of grazing on southwestern riparian ecosystems? On riparian vegetation specifically? On the plants and other habitat attributes that are key components of flycatcher habitat? On riparian birds that are ecologically similar to the flycatcher?

A large body of literature related to livestock grazing and impacts to riparian habitats, the willow flycatcher, and other riparian birds was reviewed. Much of this literature came from more mesic areas of the West where ecological conditions and riparian recovery potential differ from the arid Southwest. Convincing evidence from within and outside of the flycatcher's range comes from exclosure studies such as the San Pedro River (Krueper 1992), where after major stressors – principally livestock grazing – were removed, the riparian habitat, channel morphology, and riparian bird fauna improved substantially within five years (Figures 1- 4). Although these studies lack experimental rigor, they provide evidence that in riparian habitats where livestock grazing is the major stressor, exclosure may be the quickest method of accomplishing recovery. A critical question for the Technical Subgroup is – after full recovery of flycatcher habitat and

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May 1, 2023

Deb Haaland, Secretary of the Interior
U.S. Dept. of the Interior
1849 C Street, N.W.
Washington, D.C. 20240
exsec@ios.doi.gov

Tracy Stone-Manning, Director
U.S. Bureau of Land Management
1849 C Street, N.W.
Washington, D.C. 20240
tstonemanning@blm.gov

Martha Williams, Director
U.S. Fish and Wildlife Service
1849 C Street, N.W
Washington D.C. 20240
martha_williams@fws.gov

Raymond Suazo, State Director
U.S. Bureau of Land Management
Arizona State Office
One North Central Ave., Suite 800
Phoenix, AZ 85004-4427
blm_az_asoweb@blm.gov

Colleen Dingman, Field Manager
U.S. Bureau of Land Management
Gila District, Tucson Field Office
3201 E. Universal Way
Tucson, AZ 85756
blm_az_tfoweb@blm.gov

Amy Lueders, Regional Director
U.S. Fish and Wildlife Service
P.O. Box 13062321
Albuquerque, NM 87102
RDLueders@fws.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
West Royal Palm Road, Suite 103
Phoenix, AZ 85021
heather_whitlaw@fws.gov

Dear Secretary Haaland, Directors Stone-Manning and Williams, State Director Suazo, Field Manager Dingman, Regional Director Lueders, and Supervisor Whitlaw,

ADDENDUM TO THE APRIL 10, 2023, Sixty-Day Notice of Intent to Sue the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service for Endangered Species Act Violations for Failing to Ensure that Bureau of Land Management Authorized Cow Grazing Does Not Continue Destroying Southwestern Willow Flycatcher and Western Yellow-Billed Cuckoo Critical Habitat.[1]

[1] https://biologicaldiversity.org/programs/public_lands/grazing/pdfs/blm-noi-MIDDLE-GILA-NOI-20230410.pdf

We file this Addendum in connection with the April 10, 2023, Sixty-Day Notice of Intent to Sue ("NOI") the Bureau of Land Management ("BLM") and the U.S. Fish and Wildlife Service ("USFWS") for Endangered Species Act ("ESA") violations regarding BLM's "Middle Gila" cow grazing allotments, specifically concerning (1) USFWS' May 21, 2012, Biological Opinion on the Gila District Livestock Grazing Program ("2012 Biological Opinion")[2], (2) USFWS' August 20, 2018, Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona ("2018 Biological Opinion")[3], and (3) BLM's reliance on these unlawful and arbitrary consultation documents in allowing continued destructive cow grazing, as we present in this Addendum, on the Gila District's "Middle Gila" grazing allotments.

This Addendum provides additional new and pertinent information that we intend to use to (1) challenge the 2012 and 2018 Biological Opinion's failure to protect designated riparian Critical Habitat by failing to utilize "the best scientific . . . data available."[4], and (2) force reinitiation of consultation to redo the illegal 2012 and 2018 Biological Opinions to incorporate new information documenting that Gila District cow grazing is affecting Southwestern Willow Flycatcher and Yellow-billed Cuckoo and their designated riparian Critical Habitat in a manner and to an extent not considered in the 2012 and 2018 Biological Opinions.

Between April 11-12, 2023, the Center again conducted Cattle Impact Surveys ("CIS") of designated Critical Habitat for (1) southwestern willow flycatcher (*Empidonax traillii extimus*, "WFC"), and (2) western yellow-billed cuckoo (*Coccyzus americanus occidentalis*, "YBC") within the BLM's seven "Middle Gila" allotments, located in Pinal County, AZ. These allotments include, the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, and Whitlow allotments.

The Center's professional field biologists documented livestock grazing impacts to standing waters, streambanks, riparian vegetation, upland vegetation, and soils and examined condition of cattle fencing. The photos presented in this Addendum show that significant levels of grazing are still occurring outside of authorized seasons. We documented active grazing in each of the 7 allotments surveyed, occurring well past the April 1 seasonal cutoff[5] and into WFC breeding season. The total head of cattle observed during these surveys numbered >100.

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[2] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion").

[3] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion")

[4] 16 U.S.C. § 1536(a)(2).

[5] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from USFWS Field Supervisor RE: Biological Opinion on the Gila District Livestock Grazing Program. AESO/SE, 22410-2006-F-0414 02-21-04-F-0022; 02-21-92-F-0070 02-21-04-F-0454; 02-21-96-F-0160 02-21-05-F-0086; 02-21-96-F-0422 22410-2007-F-0119; 02-21-96-F-0423 22410-2007-F-0225; 02-21-00-F-0029 22410-2007-F-0233; 02-21-03-F-0462 22410-2008-F-0103, May 21, 2012 ("2012 Biological Opinion") page. 16.

Cattle continue to damage riverbanks, floodplains, and vegetation resources outside of their authorized seasons, during vegetative growing seasons, and during WFC nesting season on BLM's "Middle Gila" allotments. Throughout the 2023 survey, numerous instances of downed/nonfunctional fences were documented, as well as gates left open. We observed no vegetative regrowth on the innumerable cattle trails and wallows throughout the critical habitat designations along the Gila River.

In combination with recent fires which have eliminated swaths of reproducing adult native trees, and the backdrop of ongoing drought and unpredictable rainfall, we assert that permanent exclusion of cattle in WFC and YBC critical habitat designations along the Middle Gila is required so that authorized agency actions (1) are in compliance with the legal requirements and intent of the Endangered Species Act, (2) are in line with the intent of the WFC Recovery Plan, and (3) fulfill the affirmative duty of the BLM to conserve listed species.

To reiterate, protection for WFC designations here depend solely on the ineffectual and unenforced 'Conservation Measures' listed in the 2012 Biological Opinion, which state:

> "2. Habitat Management Guidelines: The BLM will implement the following guidelines:
>
> a. Livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-September 1).
>
> b. Manage suitable flycatcher habitat so that suitable characteristics are not eliminated or degraded.
>
> c. Manage riparian areas to allow natural regeneration and, therefore, allow those sites with potential to progress into suitable habitat."[6]

And with these ineffectual and unenforced measures, USFWS seems assured that:

> "The recovery potential of critical habitat will not be compromised by the proposed action. As stated in the previous paragraph, it is unlikely that any effects to the PCEs will significantly reduce the current or future suitability for flycatcher in the Middle Gila River/San Pedro River MU. The BLM will manage the allotments that have or are near critical habitat to meet both Standard 1 (uplands) and Standard 2 (riparian). To accomplish this, the BLM will exclude livestock grazing in flycatcher habitat on BLM lands from April 1 to September 1 (the breeding season and most of the growing season), will manage livestock to enhance the survival of willow and cottonwood seedlings, and manage the uplands to maintain vegetative cover. These actions will meet the intent of the recovery plan for livestock management for flycatcher habitat and thus provide for the recovery of the flycatcher."[7]

The observations presented in this Addendum provide further support that cow grazing operations along the Middle Gila are reckless, improper, illegal and constitute a significant stressor in this ecosystem. Furthermore, we document in this Addendum that BLM's gross

[6] *Id*., page 16.

[7] *Id.*, page 75.

mismanagement has spilled over onto public lands which are not part of any active grazing allotment. For example, we recorded unauthorized cattle and substantial bank degradation along the northern shore of the Gila, across from and outside of the A-Diamond and Teacup Ranch allotment boundaries.

Cattle in the Middle Gila allotments have contributed to loss of habitat and reduced productivity of habitat through overgrazing, and harassment, including potential displacement and reduced survivorship of ESA-listed avifauna. Therefore, cattle management is undoubtedly not in line with the intent of the WFC recovery plan and is not providing for the recovery of the flycatcher. According to the table on page 26 of Appendix G of the WFC Recovery Plan, no grazing should commence in these WFC designations as they reasonably fit the definition of 'restorable or regenerating' especially in combination with recent fires. For example,

> "Restorable" means riparian systems that are degraded but have the appropriate hydrological and ecological setting to be restored to suitable flycatcher habitat, and could be restored with reasonable costs and actions. Lack of regeneration due to grazing is one factor contributing to habitat degradation; conditions in each habitat should include adequate plant regeneration to ensure habitat sustainability into the future. At these sites, flycatcher habitat is precluded largely or solely by livestock impacts. "Restorable" habitats are those that would be suitable if not for grazing, alone or in combination with other major stressors. This means cessation of grazing is a necessary, but not necessarily a sufficient action."[8]

What's worse, while BLM turns a blind eye to written grazing restrictions, they've simultaneously requested to be relieved of their flycatcher habitat mapping obligations and to forego brown-headed cowbird management and control.[9]

Ironically, USFWS stated in the August 20, 2018, Biological Opinion that there is an "inability of native vegetation to regenerate under altered hydrological conditions" in this area. This statement alone should preclude the use of this land as cattle until such time as the native ecosystem can perpetuate itself, as cattle grazing furthers the degradation of this already severely impacted designated riparian zone. This is especially true where grazing is irresponsibly administered to the extent that it is along the Middle Gila. Reinitiation of consultation must follow.[10]

Both the May 21, 2012, Biological Opinion and the August 20, 2018, Biological Opinion failed at the time of publication to provide a legal evaluation of the environmental baseline, cumulative effects, and jeopardy, and now, with new information provided in our April 10, 2023, Notice, and here, these deficiencies will need to be remedied in the new reinitiated consultation.

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[8] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Page 26.

[9] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from USFWS Field Supervisor RE: Reinitiated Review and Conference on Eight Grazing Lease Renewals, Pinal County, Arizona. AESO/SE, 22410-2006-F-0414R1; 02-21-00-F-0029, August 20, 2018. ("2018 Biological Opinion"), page 1.

[10] 50 CFR 402.16.

In this Notice, we incorporate the summary of new information regarding Yellow-billed Cuckoo environmental baseline, cumulative effects and jeopardy, that we submitted to BLM and USFWS in our April 26, 2023, Notice regarding your November 23, 2022, Biological Opinion for San Pedro Riparian National Conservation Area Grazing Lease Renewal.[11] The new information regarding Cuckoo documents the fact that BLM cow grazing actions on the Babocomari Allotment are affecting Yellow-billed Cuckoo and Northern Mexican Gartersnake and their designated Critical Habitat in a manner and to an extent not considered in the November 23, 2022, Biological Opinion. This new information is additionally on point for both the May 21, 2012, Biological Opinion and the August 20, 2018, Biological Opinion challenged in our April 10, 2023, Notice and in this Addendum. Consequently, reinitiation of consultation must take place here, if for no other reason alone.[12]

In addition, since there is so much overlap of designated Southwestern Willow Flycatcher Critical Habitat with designated Yellow-billed Cuckoo Critical Habitat, and since the Flycatcher demonstrates such nest site fidelity, the new information summarized in our April 26, 2023, Notice and incorporated here, also applies to the new environmental baseline, cumulative effects and jeopardy analysis for Southwestern Willow Flycatcher.

[11] https://www.biologicaldiversity.org/programs/public_lands/grazing/pdfs/NOI-20230321-SPRNCA-TRESPASS-GRAZING-FINAL.pdf

[12] 16 U.S.C. § 1532, 50 CFR § 17.21, 16 U.S.C. § 1536(b)(4).

A-Diamond allotment

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.105229, -111.005542. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.103115, -111.007256. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.102267, -111.00964. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on non-allotment public lands adjacent to the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.102215, -111.010121. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.10230, -111.019676. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on non-allotment public lands adjacent to the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.117722, -111.079786 (1); 33.116071, -111.083675 (2). April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the A-Diamond allotment, Pinal County, during flycatcher breeding season. 33.114317, -111.057856. April 11, 2023.

Teacup Ranch allotment

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.113485, -111.088549. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.113274, -111.089481. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on non-allotment public lands adjacent to the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.11442, -111.089002. April 11, 2023.

Fresh feces surrounding a cut and browsed willow tree in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.113303, -111.090094. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.103715, -111.122716. April 11, 2023.

Trampled riverbed adjacent to a nonfunctional fence line in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.113044, -111.090351. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.112271, -111.095573. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.109938, -111.100776. April 11, 2023. Here, a herd of ≥8 cows scattered upon arrival.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.103439, -111.116171. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.103412, -111.123561. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.104613, -111.12612. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Teacup Ranch allotment, Pinal County, during flycatcher breeding season. 33.104629, -111.126625. April 11, 2023.

LEN allotment

A downed fence and access point for unauthorized cattle within southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.112816, -111.095211. April 11, 2023.

An example of a cow wallow on which vegetation regrowth does not occur, in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.112732, -111.09560. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.112661, -111.095031. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.112649, -111.095338. April 11, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.112589, -111.099113. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.10829, -111.103604. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.104314, -111.134093. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.107091, -111.136709. April 11, 2023.

A nonfunctional fence with approx. 2 meters of clearance underneath, in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County. 33.111129, -111.139082. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.095284, -111.174156. April 11, 2023.

More unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.096471, -111.176834. April 11, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the LEN allotment, Pinal County, during flycatcher breeding season. 33.10411, -111.133679. April 11, 2023.

Cochran allotment

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County, during flycatcher breeding season. 33.10404, -111.133132. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County, during flycatcher breeding season. 33.097662, -111.160975. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County, during flycatcher breeding season. 33.095085, -111.165754. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Cochran allotment, Pinal County, during flycatcher breeding season. 33.096291, -111.178403. April 12, 2023.

Horsetrack allotment


Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.096652, -111.181795 (1); 33.096101, -111.182609 (2). April 12, 2023.


Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.093677, -111.18207 (1); 33.093258, -111.181788 (2). April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.093199, -111.182163. April 12, 2023.

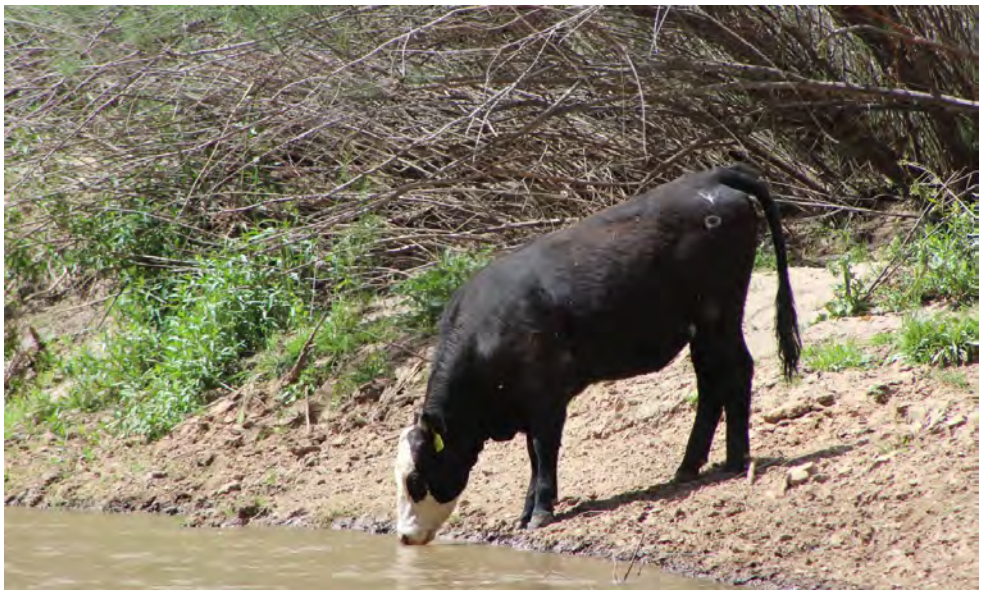
Unauthorized browsing of woody plants in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.092754, -111.182206. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.091954, -111.182602. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.091845, -111.183078. April 12, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.091992, -111.182639. April 12, 2023.

More unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat, behind an open gate to the Gila River on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.09173, -111.182804. April 12, 2023.



Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.09112, -111.184136. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.092149, -111.186725. April 12, 2023.

Fresh feces and bank damage from unauthorized grazing in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.09620, -111.187553. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Horsetrack allotment, Pinal County, during flycatcher breeding season. 33.094199, -111.186253. April 12, 2023.

Myers allotment

Unauthorized, trespass cattle consuming post-burn riparian regrowth in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.093448, -111.192121. April 12, 2023.

Hoof damage to banks by unauthorized cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.090026, -111.195096. April 12, 2023.

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.088428, -111.197671. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.086504, -111.199972. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.084976, -111.207085. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.084837, -111.207589. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.084944, -111.207882. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.090276, -111.218886. April 12, 2023.

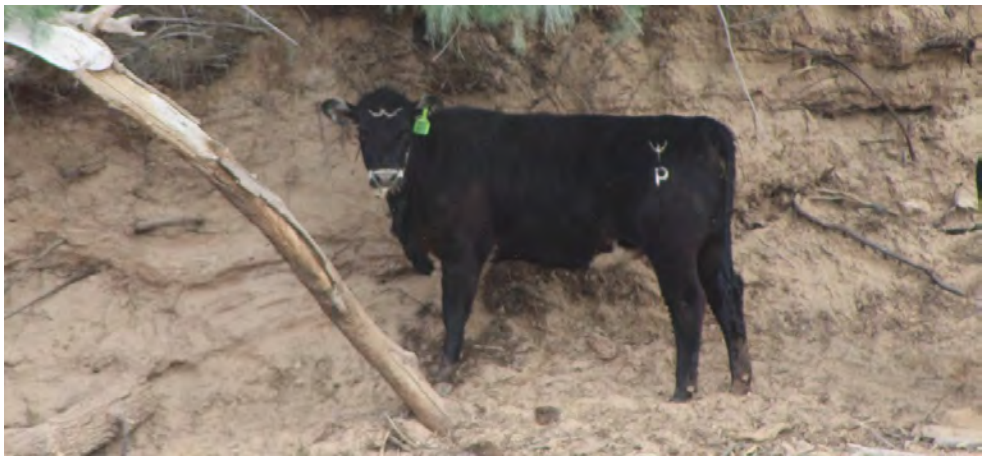
Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.084976, -111.207085. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Myers allotment, Pinal County, during flycatcher breeding season. 33.091589, -111.223177. April 12, 2023.

Whitlow allotment

Unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.084929, -111.205473. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.084656, -111.21144. April 12, 2023.



A herd of approx. 40-50 unauthorized, trespass cattle in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.084744, -111.212751. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.091938, -111.225335. April 12, 2023.

Unauthorized, trespass cattle and associated grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.094434, -111.237419. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 3.095231, -111.237765. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.092667, -111.228227. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.094977, -111.238043. April 12, 2023.

A group of cattle travelling down an unfenced road that leads directly to critical habitat designations along the river. The road comes out from a private parcel. 33.097127, -111.246755. April 12, 2023.

Another large herd of unauthorized, trespass cattle and associated grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.095943, -111.239735. April 12, 2023.

Unauthorized, trespass cattle and associated grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.097044, -111.242255. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.09715, -111.242435. April 12, 2023.

Unauthorized grazing impacts in southwestern willow flycatcher and yellow-billed cuckoo critical breeding habitat on the Whitlow allotment, Pinal County, during flycatcher breeding season. 33.097857, -111.243602. April 12, 2023.

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,

Chris Bugbee
Southwest Conservation Advocate

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

CC: Arizona Game and Fish Department Director Ty Gray

CENTER for BIOLOGICAL DIVERSITY Because life is good.

March 20, 2024

Anthony Feldhausen, Gila District Manager
U.S. Bureau of Land Management
3201 E. Universal Way
Tucson, AZ 85756
afeldhausen@blm.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
9828 N 31st Ave., Phoenix, AZ 85051
Heather_whitlaw@fws.gov

Re: Documentation of Continued Livestock Damage on GBRNCA– Immediate Action and Response Requested

Dear District Manager Feldhausen and Supervisor Whitlaw,

On October 27, 2021, the Center for Biological Diversity (the Center) and Maricopa Audubon Society (MAS) filed a complaint alleging violations of the Administrative Procedures Act and the Endangered Species Act (ESA) with respect to management of livestock grazing in the Gila Box Riparian National Conservation Area (Gila Box). The Center and MAS subsequently entered into a Stipulated Settlement Agreement with BLM and FWS on August 11, 2022, to resolve the litigation. The federal agencies stipulated that riparian areas within the Bonita Creek, Johnny Creek, Zorilla, Gila, Morenci and Bull Gap Community grazing allotments would be monitored for the presence of unauthorized livestock and damaged fences, with the former removed and the latter repaired expeditiously, during the pendency of the agreement, which would expire with the issuance of a new biological opinion. That opinion was issued on January 31, 2024.

The intent of the settlement was to minimize cattle damage to riparian areas, to ensure that areas excluded from cattle grazing would remain free of cattle, and to ensure that if unauthorized livestock were observed, BLM would promptly take steps to have those livestock removed.[1] But since the beginning of 2021, 198 unauthorized cattle were removed from riparian areas excluded from permitted livestock grazing within the Gila Box.[2] In 2023 alone, 132

[1] FWS, Draft Reinitiated Biological Opinion on Livestock Grazing on BLM Administered Land in the Gila District, Tucson and Safford Field Offices (Jan. 31, 2024) ("2024 Biological Opinion"), page 136.
[2] The October 2023 Biological Evaluation (BE) Re: Reinitiation of Section 7 Consultation for the Livestock Grazing Program on BLM-Administered Lands, Gila District (Safford Field Office, Tucson Field Office) ("BLM 2023 BE"), page 205.

unauthorized cattle were observed in the Gila Box.[3] Thus, not only did cattle damage continue throughout the course of the settlement, but it also apparently worsened, with 2023 marking the highest number of unauthorized livestock observed and removed since BLM began tracking these numbers in 2011.[4]

The January 2024 Biological Opinion continues to mandate that livestock are excluded from riparian areas within the Gila Box, and that BLM take prompt action to remove unauthorized cattle. One mandatory conservation measure states that BLM will:

> Work to remove unauthorized livestock from areas excluded or otherwise closed to grazing that provide a benefit to listed species and their habitat (see Table 4 in 2012 BO for a current list of exclosures). The BLM will contact the owner, if the owner is identifiable, of the livestock as soon as possible after the unauthorized use is reported and request removal. The BLM will work as quickly as practical to repair exclosure fences and/or notify permittees to repair fences. Where unauthorized use is a recurrent problem, alteration or additional barriers to livestock movement will be considered.[5]

On March 3-5, 2024, Center surveyors observed fresh cattle sign and impacts within riparian areas of the Zorilla allotment, Gila allotment, Morenci allotment, Bull Gap Community allotment, and Bonita Creek allotment, from which BLM has prohibited cattle since 1998, and within sections of the cattle-excluded Gila Box that are not grazing allotments at all.[6] At least three different herds were observed, including some combination of ear-tagged cows with calves and untagged feral cattle. We urge BLM to comply with the terms of the 2024 Biological Opinion by immediately removing these livestock, repairing fences and constructing additional barriers to prevent additional unauthorized livestock in these areas, and to report to us promptly if and when the agency has acted on these observations.

Our surveys revealed that, despite the river being swollen with many adjacent terraces inundated with water, cattle presence and impacts were readily apparent on nearly every exposed terrace or river access point, with browsed woody recruitment encountered ubiquitously throughout the Gila Box, where BLM has prohibited livestock grazing.

[3] *Ibid.*
[4] *Ibid.*
[5] 2024 Biological Opinion, page 20.
[6] BLM 2023 BE at 8 ("The 1998 GBRNCA Management Plan decision excludes livestock grazing from the riparian areas within the GBRNCA for the Johnny Creek, Bonita Creek, Bull Gap Community, Turtle Mountain, Twin C, County Line, Gila, Smuggler Peak, Zorilla, and Morenci Allotments for the life of the plan.").

Designated yellow-billed cuckoo critical habitat on Zorilla allotment. 32.966311,-109.313864. March 3, 2024.

Designated yellow-billed cuckoo critical habitat on Gila allotment. 32.972224,-109.350014. March 4, 2014.

Designated yellow-billed cuckoo critical habitat on Morenci allotment. 32.959123, -109.410088. March 5, 2024.

A herd of unauthorized permitted cattle in designated yellow-billed cuckoo critical habitat on Morenci allotment. 32.959931, -109.405902. March 5, 2024.

Bull Gap Community allotment in the Gila Box RNCA. 32.933318, -109.449907. March 5, 2024.

A non-allotment yellow-billed cuckoo critical habitat designation in between Twin C and Bull Gap Community allotments. 32.915995, -109.454242. March 5, 2024.

Equally concerning as the chronic cattle-caused degradation of the Gila Box is the lack of meaningful protections afforded to listed species, and their critical habitat designations that occur within the RNCA, according to the 2024 Biological Opinion.

For example, while USFWS anticipates in the 2024 Biological Opinion that livestock grazing "is likely to result in adverse effects to cuckoo breeding habitat and its recovery"[7], the Opinion fails to set a level of 'take' for that species throughout the Gila District.

The 2024 Biological Opinion also fails to set a level of 'take' for Southwestern willow flycatchers across the entire Gila District, except on three allotments, none of which occur within the Gila Box.[8]

USFWS bases its "no jeopardy" conclusions on the faulty assumption that livestock are excluded from the Gila Box[9], which is obviously not the case. BLM observed hundreds of cattle in the Gila Box in 2023, while FWS completed its 2024 Biological Opinion.

And because the USFWS has explicitly refused to consider the effects of chronic, well-documented, unauthorized grazing degradation in Gila Box, and in a multitude of locations throughout the Gila District, as part of the proposed action, the entire 2024 consultation document falls short of its very purpose in protecting listed species.

Until USFWS analyzes the actual impacts of chronic cattle degradation throughout the Gila Box, as we continue to demonstrate, such conclusions, and indeed the 2024 Biological Opinion itself, must reasonably be judged arbitrary and capricious.

Please advise concerning what action the BLM will take to address these issues.

Sincerely,

Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
rsilver@biologicaldiversity.org

[7] 2024 Biological Opinion, page 179.
[8] *Id.*, page 165.
[9] *Ibid.*

CC: USFWS Director Martha Williams (martha_williams@fws.gov)
USFWS Regional Director Amy Lueders (rdlueders@fws.gov)
BLM Deputy Director Nada Culver (nculver@blm.gov)
BLM Arizona State Director Raymond Suazo (rmsuazo@blm.gov)

CENTER for BIOLOGICAL DIVERSITY Because life is good.

April 23, 2024

Anthony Feldhausen, Gila District Manager
U.S. Bureau of Land Management
3201 E. Universal Way
Tucson, AZ 85756
afeldhausen@blm.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
9828 N 31st Ave., Phoenix, AZ 85051
Heather_whitlaw@fws.gov

Re: Documentation of Unauthorized Livestock on the Gila River– Immediate Action and Response Requested

Dear District Manager Feldhausen and Supervisor Whitlaw,

On April 14, 2024, surveyors for the Center for Biological Diversity ("the Center") observed unauthorized cattle, fresh cattle sign and impacts within riparian areas of the A-Diamond, Teacup Ranch, LEN, and Cochran allotments along the Gila River within BLM's Gila District. According to the 2024 Biological Opinion for continued grazing within BLM's Gila District[1], there is no authorized grazing in these allotments past April 1st.

Multiple herds were observed throughout the survey, including a large group estimated to consist of approximately 30 animals. A continual bellowing of unauthorized cattle could be heard throughout the valley. Despite prolonged winter/spring rains this year, significant levels of cattle impacts were recorded where cattle were loafing and watering. Unauthorized consumption of vegetative ground cover is presently occurring daily.

This is the second time since the issuance of the January 31, 2024, Biological Opinion that we have documented unauthorized cattle along the Gila River.

We urge you to remove unauthorized livestock from the A-Diamond, Teacup Ranch, LEN, and Cochran allotments, and from neighboring allotments to the west where cattle have continued, unrestricted access via nonfunctional fence lines. We urge you to repair riparian fences and remove attractants such as mineral licks from riparian critical habitat.

The photos below were all taken within areas seasonally closed to livestock (from April 1- November 1) to protect riparian habitat, pursuant to the 2024 biological opinion.

[1] FWS, Draft Reinitiated Biological Opinion on Livestock Grazing on BLM Administered Land in the Gila District, Tucson and Safford Field Offices (Jan. 31, 2024) ("2024 Biological Opinion"), page 23.

Unauthorized cattle in cuckoo and flycatcher critical habitat on LEN allotment 33.112506, -111.095293. April 14, 2024.

Fresh, unauthorized cattle impacts in cuckoo and flycatcher critical habitat on Teacup Ranch allotment. 33.112459, -111.098329. April 14, 2024.

Cattle chute leading to water in cuckoo and flycatcher critical habitat on Teacup Ranch allotment. 33.108746, -111.100599. April 14, 2024.

An open fence leading to riparian cuckoo and flycatcher critical habitat on Teacup Ranch allotment. 33.102974, -111.123192. April 14, 2024.

Another non-functional riparian fence on LEN allotment. 33.112895, -111.098496. April 14, 2024.

Significant, unauthorized impacts to uplands on Teacup Ranch allotment. 33.107013, -111.10566. April 14, 2024.

Continued fresh, unauthorized cow sign in cuckoo and flycatcher critical habitat on Cochran allotment. 33.106808, -111.137448. April 14, 2024.

An unauthorized mineral lick (100m from the Gila River) being used by unauthorized cattle in cuckoo and flycatcher critical habitat on A-Diamond allotment. 33.109998, -111.035825. April 14, 2024.

Fresh, unauthorized cattle impacts in cuckoo and flycatcher critical habitat on Cochran allotment. 33.110855, -111.14282. April 14, 2024.

The January 2024 Biological Opinion continues to mandate that livestock are excluded from important riparian areas within the Gila District, including the A-Diamond, Teacup Ranch, LEN, and Cochran allotments at issue here. It also mandates that BLM take prompt action to remove unauthorized cattle. For example,

> For those allotments with exclusion fencing, livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-November 1).[2]

and,

> Upon receipt of information regarding unauthorized livestock in sensitive riparian areas, BLM will take action as described in GCM 4 to address unauthorized livestock in a timely manner.[3]

This letter serves as your receipt of information regarding unauthorized livestock in sensitive riparian areas where livestock are prohibited after April 1 and until November. The mandatory conservation measure #4 (referenced above as "GCM 4") states that the BLM must now:

> Work to remove unauthorized livestock from areas excluded or otherwise closed to grazing that provide a benefit to listed species and their habitat (see Table 4 in 2012 BO for a current list of exclosures). The BLM will contact the owner, if the owner is identifiable, of the livestock as soon as possible after the unauthorized use is reported and request removal. The BLM will work as quickly as practical to repair exclosure fences and/or notify permittees to repair fences. Where unauthorized use is a recurrent problem, alteration or additional barriers to livestock movement will be considered.[4]

The January 2024 Biological Opinion also mandates, through additional conservation measures, that the BLM must:

> 10. Avoid, to the extent possible, impacts to native riparian vegetation.
>
> 11. Coordinate with the permittee on installation and repair of exclosure fence that exist on BLM-managed riparian areas/pastures as needed and outside of sensitive breeding seasons when possible.
>
> 12. At the time of permit renewal, add terms and conditions to place livestock supplements, including salt, at least a quarter mile away from riparian areas.[5]

Our surveys show that BLM is failing to implement these conservation measures.

We remain rightfully concerned of the chronic cattle-caused degradation of the Gila River, and the lack of meaningful protections afforded to listed species according to the 2024 Biological Opinion.

---

[2] 2024 Biological Opinion, page 23.
[3] *Ibid.*
[4] *Id.,* page 20.
[5] *Ibid.*

And while USFWS anticipates in the 2024 Biological Opinion that livestock grazing "is likely to result in adverse effects to cuckoo breeding habitat and its recovery"[6], the Opinion fails to set a level of 'take' for cuckoos throughout the Gila District.

Likewise, the 2024 Biological Opinion fails to set a level of 'take' for Southwestern willow flycatchers across the entire Gila District, except on three allotments, none of which occur in this area.[7]

An important assumption of the 2024 Biological Opinion is that livestock have been excluded from flycatcher habitat on grazing allotments during the breeding season. BLM is failing to ensure that this assumption is true. The BLM and USFWS were made aware of these same issues on the same allotments in our April 10, 2023, Notice of Intent to file suit pursuant to the citizen suit provision of the ESA,[8] as well as our May 1, 2023, addendum to that Notice.

Not only did the BLM and USFWS choose to disregard that information during the process of developing the new 2024 Biological Opinion, but they obviously have yet to repair fences or in any way meaningfully address the chronic, unauthorized presence of cattle in the allotments along the Middle Gila.

Therefore, continued documentation of unauthorized livestock, and the damage they cause to ESA-listed wildlife, paints a different picture than what is discussed and analyzed in the 2024 Biological Opinion. Reinitiation of formal consultation is required if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion.[9] Until USFWS analyzes the actual impacts of chronic cattle degradation throughout the Gila District, as we continue to demonstrate, then the 2024 Biological Opinion is failing to fulfill its fundamental purpose in protecting ESA-listed species and must reasonably be judged arbitrary and capricious.

Please advise concerning what action the BLM will take or has taken to address these issues. We will be following up on these issues as we get closer to flycatcher nesting season and to the annual arrival of breeding cuckoos to Arizona.

Sincerely,

Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org

[6] 2024 Biological Opinion, page 179.
[7] *Id.,* page 165.
[8] 16 U.S.C. § 1540(g)
[9] 50 C.F.R. § 402.16

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
rsilver@biologicaldiversity.org

CC: USFWS Director Martha Williams (martha_williams@fws.gov)
USFWS Regional Director Amy Lueders (rdlueders@fws.gov)
BLM Deputy Director Nada Culver (nculver@blm.gov)
BLM Arizona State Director Raymond Suazo (rmsuazo@blm.gov)

CENTER for BIOLOGICAL DIVERSITY Because life is good.

April 10, 2025

Lance Brady, Gila District Manager
U.S. Bureau of Land Management
3201 E. Universal Way
Tucson, AZ 85756
Lrbrady@blm.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
9828 N 31st Ave., Phoenix, AZ 85051
Heather_whitlaw@fws.gov

Re: Documentation of Unauthorized Livestock on the Gila River– Immediate Action and Response Requested

Dear District Manager Brady and Supervisor Whitlaw,

On April 4, 2025, surveyors for the Center for Biological Diversity ("the Center") observed unauthorized cattle and/or fresh cattle sign and significant impacts within riparian areas of the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers and Whitlow allotments along the Gila River within BLM's Gila District. According the 2024 Biological Opinion for continued grazing within BLM's Gila District[1], there is no authorized grazing in these allotments past April 1st.

We have provided documentation of unauthorized cattle in this reach of the Gila River since 2022, along with documentation of significant levels of cattle impacts where cattle linger past their cut-off date. We have documented numerous instances of unauthorized cattle along the Gila River since the issuance of the January 31, 2024, Biological Opinion that assumes flycatcher and cuckoo critical habitat is protected through cattle exclusion fencing. Unauthorized consumption of vegetative ground cover and riparian tree regeneration, required by flycatchers and cuckoos, is presently occurring daily in designated flycatcher and cuckoo critical habitat.

The following is a small subset of photos from our 2025 surveys, all taken within areas closed to livestock between April 1 and November 1 each year, to protect riparian habitat pursuant to the 2024 biological opinion.

[1] FWS, Draft Reinitiated Biological Opinion on Livestock Grazing on BLM Administered Land in the Gila District, Tucson and Safford Field Offices (Jan. 31, 2024) ("2024 Biological Opinion"), page 23.

Significant cattle impacts, including fresh feces and understory removal in cuckoo and flycatcher critical habitat on A-Diamond allotment. 33.113662, -111.021961. April 4, 2024.

Significant cattle impacts in designated cuckoo and flycatcher critical habitat on the LEN allotment. 33.096733, -111.178496. April 4, 2024.

Unauthorized bull in designated cuckoo and flycatcher critical habitat on the LEN allotment. 33.107899, -111.108575. April 4, 2025.

Significant cattle impacts, including cattle-stunted riparian regeneration in cuckoo and flycatcher critical habitat on Whitlow allotment. 33.085102, -111.213061. April 4, 2025.

Significant cattle impacts including fresh feces, consumption of riparian regeneration and bank shearing in cuckoo and flycatcher critical habitat on the Cochran allotment. 33.095040, -111.173500. April 4, 2025.

An unauthorized herd of cattle on Cochran allotment. 33.097272, -111.162822. April 4, 2025.

An open gate with fresh cattle tracks leading to excluded, designated critical habitat along the Gila River after the April 1 cutoff date on the Teacup Ranch allotment. 33.103021, -111.123129. April 4, 2025.

Immediately downslope from the open gate (previous photos) is a significantly impacted critical habitat designation, continually degraded by unauthorized cattle on the Teacup Ranch allotment. 33.103021, -111.123129. April 4, 2025.

Continued significant, unauthorized cattle impacts on Teacup Ranch allotment. 33.110272, -111.100168. April 4, 2025.

Significant degradation within the riparian exclsoure on Horsetrack allotment. 33.093473, -111.182044. April 4, 2025.

Significant, unauthorized cattle impacts including bank shearing and consumption of riparian regeneration in designated critical habitat on Cochran allotment. 33.097775, -111.160905. April 4, 2025.

Significant, off-allotment impacts from trespass cattle in designated flycatcher and cuckoo critical habitat. 33.110479, -111.033763. April 4, 2025.

Significant, off-allotment impacts including severe bank-shearing from trespass cattle in designated flycatcher and cuckoo critical habitat. 33.102170, -111.017283. April 4, 2025.

The January 2024 Biological Opinion continues to mandate that livestock are excluded from important riparian areas within the Gila District, including the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers and Whitlow allotments at issue here. It also mandates that BLM take prompt action to remove unauthorized cattle. For example,

> For those allotments with exclusion fencing, livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-November 1).[2]

and,

> Upon receipt of information regarding unauthorized livestock in sensitive riparian areas, BLM will take action as described in GCM 4 to address unauthorized livestock in a timely manner.[3]

This letter serves as your receipt of information regarding unauthorized livestock in sensitive riparian areas where livestock are prohibited after April 1. The mandatory conservation measure #4 (referenced above as "GCM 4") states that the BLM must now:

> Work to remove unauthorized livestock from areas excluded or otherwise closed to grazing that provide a benefit to listed species and their habitat (see Table 4 in 2012 BO for a current list of exclosures). The BLM will contact the owner, if the owner is identifiable, of the livestock as soon as possible after the unauthorized

[2] 2024 Biological Opinion, page 23.
[3] *Ibid.*

use is reported and request removal. The BLM will work as quickly as practical to repair exclosure fences and/or notify permittees to repair fences. Where unauthorized use is a recurrent problem, alteration or additional barriers to livestock movement will be considered.[4]

The January 2024 Biological Opinion also mandates, through additional conservation measures, that the BLM must:

> 10. Avoid, to the extent possible, impacts to native riparian vegetation.
>
> 11. Coordinate with the permittee on installation and repair of exclosure fence that exist on BLM-managed riparian areas/pastures as needed and outside of sensitive breeding seasons when possible.
>
> 12. At the time of permit renewal, add terms and conditions to place livestock supplements, including salt, at least a quarter mile away from riparian areas.[5]

Our surveys show that BLM is, once again, failing to implement these conservation measures.

We remain rightfully concerned of the chronic cattle-caused degradation of the Gila River, and the lack of meaningful protections afforded to listed species according to the 2024 Biological Opinion.

And while USFWS anticipates in the 2024 Biological Opinion that livestock grazing "is likely to result in adverse effects to cuckoo breeding habitat and its recovery"[6], the Opinion fails to set a level of 'take' for that cuckoos throughout the Gila District.

Likewise, the 2024 Biological Opinion fails to set a level of 'take' for Southwestern willow flycatchers across the entire Gila District, except on three allotments, none of which occur in this area.[7]

An important assumption of the 2024 Biological Opinion is that livestock have been excluded from flycatcher habitat on grazing allotments during the breeding season. BLM is failing to ensure that this assumption is true. The BLM and USFWS were made aware of these same issues on the same allotments in our April 10, 2023, Notice of Intent to file suit pursuant to the citizen suit provision of the ESA,[8] our May 1, 2023, addendum to that Notice, and a follow-up letter from last year sent on April 23, 2024.

After this fourth year of documentation, BLM has yet to ensure that cattle are removed from riparian critical habitat along these Middle Gila allotments by the mandated cut-off date

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[4] *Id.,* page 20.
[5] *Ibid.*
[6] 2024 Biological Opinion, page 179.
[7] *Id.,* page 165.
[8] 16 U.S.C. § 1540(g)

and has yet to meaningfully address the chronic, unauthorized presence of cattle in these allotments at issue here again in 2025.

Therefore, continued documentation of unauthorized livestock, and the damage they cause to ESA-listed wildlife, paints a different picture than what is discussed and analyzed in the 2024 Biological Opinion. Reinitiation of formal consultation is required if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion.[9] Until USFWS analyzes the actual impacts of chronic cattle degradation throughout the Gila District, as we continue to demonstrate, then the 2024 Biological Opinion is failing to fulfill its fundamental purpose in protecting ESA-listed species and must reasonably be judged arbitrary and capricious.

Please advise concerning what action the BLM will take or has taken to address these issues. As you know, flycatcher and cuckoo recovery depends directly upon regeneration of riparian forest that is being precluded by cattle along the Middle Gila and throughout the region. We will be following up on these issues as we get closer to flycatcher nesting season and to the annual arrival of breeding cuckoos to Arizona.

Sincerely,

Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
rsilver@biologicaldiversity.org

CC: USFWS Regional Director Amy Lueders (rdlueders@fws.gov)
BLM Arizona State Director Raymond Suazo (rmsuazo@blm.gov)

[9] 50 C.F.R. § 402.16

April 15, 2025

Lance Brady, Gila District Manager
U.S. Bureau of Land Management
3201 E. Universal Way
Tucson, AZ 85756
Lrbrady@blm.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
9828 N 31st Ave., Phoenix, AZ 85051
Heather_whitlaw@fws.gov

Re: Addendum- Documentation of Unauthorized Livestock on the Gila River– Immediate Action and Response Requested

Dear District Manager Brady and Supervisor Whitlaw,

On April 7-8, 2025, surveyors for the Center for Biological Diversity ("the Center") observed unauthorized cattle and/or fresh cattle sign and significant damage within riparian areas of the Mescal Mountain, Christmas, and Hidalgo allotments along the Gila River within BLM's Gila District. This damage included degraded streambanks, trampled and grazed riparian understory vegetation, denuded riparian terraces, and consumption of cottonwood and willow regeneration. Virtually every riparian access point for cows showed significant and ongoing damage. A cow carcass was even observed decomposing in the river channel. According to the 2024 Biological Opinion for continued grazing within BLM's Gila District[1], there is no authorized grazing in these allotments past April 1st.

We have provided documentation of unauthorized cattle along this stretch of the Gila River since 2022. This letter serves as a follow-up to our April 10, 2025, letter and documents additional, unauthorized cattle in reaches of the Gila River upstream from the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers and Whitlow allotments that were discussed in the previous letter from April 10, 2025.

Again, the January 31, 2024, Biological Opinion assumes that flycatcher and cuckoo critical habitat throughout the subject allotments is protected through cattle exclusion fencing.

[1] FWS, Draft Reinitiated Biological Opinion on Livestock Grazing on BLM Administered Land in the Gila District, Tucson and Safford Field Offices (Jan. 31, 2024) ("2024 Biological Opinion"), page 23.

Unauthorized consumption of vegetative ground cover and riparian tree regeneration, required by flycatchers and cuckoos, is presently occurring daily in designated flycatcher and cuckoo critical habitat.

The following is a small subset of photos from our April 7-8, 2025, surveys. All photos were taken within areas closed to livestock between April 1 and November 1 each year, to protect riparian habitat pursuant to the 2024 Biological Opinion. The photos below show herds of unauthorized, trespass cattle on the Christmas allotment and the ecological damage they've caused and continue to cause without authorization.

Unauthorized herd of cattle in designated yellow-billed cuckoo critical habitat on the Christmas allotment. 33.114303, -110.656738. April 7, 2025.

Unauthorized herd of cattle in designated yellow-billed cuckoo critical habitat on the Christmas allotment. 33.119273, -110.662554. April 7, 2025.

Significant cattle degradation of designated yellow-billed cuckoo critical habitat on the Christmas allotment. Nearly every accessible riparian terrace and water access point was defined by significant damage. 33.088555, -110.693174. April 7, 2025.

Another unauthorized cow in designated yellow-billed cuckoo critical habitat on the Christmas allotment. 33.119656, -110.663355. April 7, 2025.

More unauthorized cattle in designated yellow-billed cuckoo critical habitat on the Christmas allotment. 33.088781, -110.686011. April 7, 2025.

Significant degradation of yellow-billed cuckoo critical habitat, including removal of understory and cattle-stunted woody regeneration on the Christmas allotment. 33.089725, -110.682813. April 7, 2025.

Continued, significant degradation of yellow-billed cuckoo riparian critical habitat on the Christmas allotment. 33.078313, -110.696422. April 7, 2025.

Unauthorized cattle in designated southwestern willow flycatcher and yellow-billed cuckoo critical habitat on the Christmas allotment. 33.078777, -110.712013. April 8, 2025.

A herd of unauthorized cattle just outside the northern terminus of designated yellow-billed cuckoo critical habitat on the Christmas allotment. 33.118181, -110.653357. April 7, 2025.

More unauthorized cattle just outside the northern terminus of designated yellow-billed cuckoo critical habitat on the Christmas allotment. 33.119525, -110.65230. April 7, 2025.

Although not designated as critical, the Gila River within Mescal Mountain allotment- located immediately upstream of Christmas allotment- is occupied habitat for flycatchers and is potentially occupied by cuckoos during nesting season. According to the 2024 Biological Opinion, regarding the Mescal Mountain allotment, "this area supports most flycatchers in the action area."[2] As such, the BLM's 2023 Biological Evaluation (upon which the 2024 Biological Opinion is based) claims that in the Mescal Mountain allotment a "fence prevents cattle's access to Gila River."[3]

The 2023 Biological Evaluation also states "For those allotments with exclusion fencing, livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-November 1).[4] The following photos show herds of unauthorized, trespass cattle on the Mescal Mountain allotment and the ecological damage they've caused and continue to cause without authorization.

[2] 2024 BiOp at 163.
[3] 2023 Biological Evaluation at 202.
[4] 2023 Biological Evaluation at 164.

Unauthorized cattle and significant flycatcher-occupied habitat degradation on the Mescal Mountain allotment. 33.144241, -110.618558. April 7, 2025.

Unauthorized cattle and significant flycatcher-occupied habitat degradation on the Mescal Mountain allotment. 33.142013, -110.60810. April 7, 2025.

Unauthorized cattle and significant flycatcher-occupied habitat degradation on the Mescal Mountain allotment. 33.134917, -110.591159. April 7, 2025.

Another unauthorized cow in flycatcher-occupied habitat on the Mescal Mountain allotment. 33.144695, -110.581579. April 7, 2025.

An identifying brand on an unauthorized cow in flycatcher-occupied habitat on the Mescal Mountain allotment. 33.153791, -110.549790. April 7, 2025.

Regarding the Hidalgo allotment, downstream of the Christmas allotment, BLM's 2023 Biological Evaluation also claims that a "fence prevents cattle's access to Gila River".[5] Although no cattle were seen during the survey, significant cattle damage continued downstream in critical habitat for flycatchers and cuckoo in the Hidalgo allotment along the Gila River.

[5] 2023 BE at 202.

Significant cattle damage in critical habitat for flycatchers and cuckoo in the Hidalgo allotment. 33.023995, -110.732717. April 8, 2025.

The Mescal Mountain, Christmas, and Hidalgo allotments are all claimed to have exclusion fencing along the Gila River and therefore have a grazing cut-off date of April 1st. As such, the above photos and subsequent damage to designated and/or potentially occupied habitat for flycatcher and cuckoo documented here are from unauthorized and/or trespass livestock, almost certainly a direct result of authorized grazing within other portions of these allotments. We continue to demonstrate that unauthorized livestock is a ubiquitous and significant problem throughout BLM's Gila District.

The January 2024 Biological Opinion continues to assume that livestock are excluded from important riparian areas within the Gila District, including the Mescal Mountain, Christmas, and Hidalgo allotments at issue here. It also mandates that BLM take prompt action to remove unauthorized cattle. For example,

> For those allotments with exclusion fencing, livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-November 1).[6]

and,

[6] 2024 Biological Opinion, page 23.

> Upon receipt of information regarding unauthorized livestock in sensitive riparian areas, BLM will take action as described in GCM 4 to address unauthorized livestock in a timely manner.[7]

This letter serves as your receipt of information regarding unauthorized livestock in sensitive riparian areas where livestock are prohibited after April 1. The mandatory conservation measure #4 (referenced above as "GCM 4") states that the BLM must now:

> Work to remove unauthorized livestock from areas excluded or otherwise closed to grazing that provide a benefit to listed species and their habitat (see Table 4 in 2012 BO for a current list of exclosures). The BLM will contact the owner, if the owner is identifiable, of the livestock as soon as possible after the unauthorized use is reported and request removal. The BLM will work as quickly as practical to repair exclosure fences and/or notify permittees to repair fences. Where unauthorized use is a recurrent problem, alteration or additional barriers to livestock movement will be considered.[8]

Please advise concerning what action the BLM will take or has taken to address these issues. As you know, flycatcher and cuckoo recovery depends directly upon regeneration of riparian forest that is being precluded by cattle along the Middle Gila and throughout the region. We will be following up on these issues as we get closer to flycatcher nesting season and to the annual arrival of breeding cuckoos to Arizona.

We look forward to your reply.

Sincerely,

Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
rsilver@biologicaldiversity.org

[7] *Ibid.*
[8] *Id.,* page 20.

CC: USFWS Regional Director Amy Lueders (rdlueders@fws.gov)
BLM Arizona State Director Raymond Suazo (rmsuazo@blm.gov)

Grazed to Death:

Livestock Production Adversely Modifying Majority of Drought-Stricken Western Yellow-Billed Cuckoo Critical Habitat on Public Lands in Arizona and New Mexico

Center for Biological Diversity

June 2024

Summary - *Livestock grazing has adversely modified at least 57% of designated critical habitat of western yellow-billed cuckoo ("cuckoo") within public lands grazing allotments in Arizona and New Mexico. In those states the U.S. Fish and Wildlife Service ("FWS") has designated 55,550 acres of critical habitat for cuckoo within grazing allotments managed by the U.S. Forest Service ("FS") and Bureau of Land Management ("BLM"). From 2021-2023, Center for Biological Diversity field biologists surveyed 39,170 (70%) of those acres for adverse modification from livestock grazing immediately prior to, or during, the cuckoo nesting and breeding season. Surveys found moderate to significant impacts and adverse modification across 31,509 acres, which is 80% of critical habitat surveyed, and 57% of the critical habitat within public lands grazing allotments in Arizona and New Mexico.*

Many bird species associated with cottonwood trees (*Populus fremontii*) are rare or endangered in the Southwest.[1,2] Among them is the western yellow-billed cuckoo ("cuckoo"), a tropical bird that migrates from South America to the western United States ahead of summer monsoons to build nests and raise chicks. Cuckoo have disappeared throughout most of their former breeding range due to habitat loss.[3,4] Following dramatic population declines in California, southeastern Arizona now supports the largest remaining breeding population of cuckoo in the United States, although steady decline continues throughout their range.[5]

In 2014 the U.S. Fish and Wildlife Service ("FWS") listed the cuckoo as a threatened species under the Endangered Species Act[6] due to precipitous population declines that directly paralleled decline of its preferred breeding and nesting habitat, cottonwood-willow riparian forest.[7,8] Despite the extraordinary ecological and biodiversity values of riparian ecosystems, upon which most desert species directly depend for survival, these places are among the most disturbed and degraded land type in the western United States.[9]

Optimal cuckoo breeding habitat consists of riparian woodlands with an overstory, a subcanopy, and contiguous patches of vegetative understory adjacent to intermittent or perennial watercourses.[10,11] In arid Arizona, even ephemeral (xeroriparian) drainages can serve as cuckoo nesting habitat if they support higher vegetation volume and diversity, proportionally higher moisture content, and higher potential for prey abundance than surrounding uplands.[12] These specific habitat components help maintain high prey densities and higher relative humidity, which are important criteria for cuckoos as they arrive in May and June to select nest locations. Nesting site selection is based on the foraging potential of the immediate vicinity,[13] where food

[1] Johnson, R.R., Haight, J.T., Simpson, J.M. 1977. Endangered Species vs. Endangered Habitats: A Concept. *In* Importance, Preservation, and Management of Riparian Habitat: A Symposium, Tucson, Arizona, July 9, 1977 (Vol. 43). Rocky Mountain Forest and Range Experiment Station, Forest Service, US Department of Agriculture.

[2] Engel-Wilson, R.W. and Ohmart, R.D., 1978. Floral and Attendant Faunal Changes on the Lower Rio Grande Between Fort Quitman and Presidio, Texas.

[3] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021.

[4] Biological Opinion on Ongoing Grazing on the Coronado National Forest, Graham, Cochise, Pima, Pinal, and Santa Cruz Counties, Arizona and Hidalgo County, New Mexico. AESO/SE, 2-21-98-F-399, 2-21-98-F-399R1, 02EAAZ00-2019-F-0867, September 30, 2021, p. 174.

[5] Krzysik 2014. Western Yellow-billed Cuckoo Critical Habitat in Arizona. Technical Report. Prescott, AZ 12 October 2014.

[6] Rules and Regulations. Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), Federal Register, Vol. 79, No. 192. October 3, 2014.

[7] Wallace, C.S., Villarreal, M.L. and van Riper III, C., 2013. Influence of monsoon-related riparian phenology on yellow-billed cuckoo habitat selection in Arizona. *Journal of Biogeography*, *40*(11), pp.2094-2107.

[8] USFWS. 2013. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus); Proposed Rule. 50 CFR Part 17. Federal Register, Vol. 78, No. 192, Part V. 3 October 2013. Pages 61621-61666.

[9] Bock, C.E., Saab, V.A., Rich, T.D. and Dobkin, D.S., 1993. Effects of livestock grazing on neotropical migratory landbirds in western North America. *Status and management of Neotropical migratory birds. USDA Forest Service, General Technical Report RM-229*, pp.296-309.

[10] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20939.

[11] Rosenberg, K.V., R.D. Ohmart, W.C. Hunter, and B.W. Anderson. 1991. Birds of the Lower Colorado River Valley. Univ. Arizona Press, Tucson, AZ. 416pp.; Johnson, M.J., S.L. Durst, C.M. Calvo, L. Stewart, M.K. Sogge, G. Bland, and T. Arundel. 2008. Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use Along the Lower Colorado River and its Tributaries, 2007 Annual Report. USGS, Open File Report 2008-1177. 274pp.

[12] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20815.

[13] Wallace, C.S., Villarreal, M.L. and van Riper III, C., 2013. Influence of monsoon-related riparian phenology on yellow-billed cuckoo habitat selection in Arizona. *Journal of Biogeography*, *40*(11), pp.2094-2107.

availability such as macroinvertebrates and amphibians[14] is ensured and provided by monsoonal rains and an intact vegetative community.[15,16]

Despite the known importance of understory vegetation and ground cover in cuckoo breeding grounds, especially as cuckoo chicks are hatched and raised at the hottest time of year, beef cattle production on national forests, national conservation lands, and other public lands removes and degrades these vital habitat components in riparian ecosystems throughout the arid Southwest.[17]

Cattle consumption of herbaceous plants in riparian drainages rapidly reduces vegetative cover important for temperature amelioration, humidity, and insect production.[18,19] Cattle remove riparian seedlings and saplings, precluding young cohorts of trees from developing into future riparian gallery forest. Chronic plant removal and trampling ultimately leads to increased erosion, channel incision, and ecological type changes. These damages occur at a broad spatial scale, and riparian drainages specifically and legally set aside for protection and recovery of cuckoos (i.e., designated "critical habitat") are no exception.

Grazing at any intensity can impact riparian habitat, according to FWS,[20] which defines overgrazing as "grazing activity [that] degrades riparian habitat attributes and prevents long-term health and persistence of these systems."[21] Or, specifically in the context of cuckoos, grazing that "reduces quality and quantity of breeding habitat."[22] Overgrazing in riparian (and xeroriparian) habitat has been identified by the agency as an ongoing threat to 97% of cuckoo critical habitat units.[23]

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[14] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48552.

[15] *Id*., page 48551.

[16] Johnson, M.J., S.L. Durst, C.M. Calvo, L. Stewart, M.K. Sogge, G. Bland, and T. Arundel. 2008. Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use Along the Lower Colorado River and its Tributaries, 2007 Annual Report. USGS, Open File Report 2008-1177. 274pp.

[17] Bock, C.E., J.H. Bock, L. Kennedy, and Z.F. Jones. 2007. Spread of non-native grasses into grazed versus ungrazed desert grasslands. Journal of Arid Environments 71:229-235; Bock, C.E., V.A. Saab, T.D. Rich, and D.S. Dobkin. 1993. Effects of livestock grazing on Neotropical migratory land birds in Western North America. Pages 296-309 in Status and Management of Neotropical Migratory Birds. D.M. Finch and P.W. Stangel, editors. USDA, Forest Service, GTR RM-229. 422pp.; Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. Conservation Biology 8:629-644.; Krueper, D.J. 1993. Effects of land use practices on Western riparian ecosystems. Pages 321-330 in Status and Management of Neotropical Migratory Birds. D.M. Finch and P.W. Stangel, editors. USDA, Forest Service, GTR RM-229. 422pp.

[18] Skovlin, J.M. 1984. Impacts of grazing on wetlands and riparian habitat: a review of our knowledge. p. 1001-1103. In: Developing strategies for range management. Westview Press, Boulder, CO.

[19] Krueper, D.J., 1996. Effects of livestock management on Southwestern riparian ecosystems. Shaw, DW, and Finch, DM, tech. coords. Desired future conditions for southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RM-GTR-272. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, pp.281-301.

[20] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20813.

[21] *Id.*

[22] *Id.*, page 20853.

[23] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48558.

Surveys for Adverse Modification of Critical Habitat by Livestock Grazing

In Arizona and New Mexico, approximately 55,550 acres of designated critical cuckoo breeding habitat overlaps with public lands cattle grazing allotments, managed by the U.S. Forest Service ("FS") and Bureau of Land Management ("BLM"). Following designation of cuckoo critical habitat in 2021,[24] the Center for Biological Diversity began systematically surveying and quantifying cattle impacts to designated cuckoo critical habitat on public lands in Arizona and New Mexico. The rationale for this effort was 1) the well-known negative effects of livestock grazing on cuckoo habitat, and 2) the fact that neither BLM nor FS systematically surveys and assesses the public lands they manage for the health of riparian ecosystems in the context of the habitat needs of threatened and endangered species.

On an annual basis, professional field biologists document livestock impacts to standing waters, riparian vegetation, soils, and streambanks within designated critical habitat and examine protective fencing where applicable. Using a standardized protocol, surveyors record 1) severity of grazing impacts on herbaceous vegetation and grasses, 2) severity of browsing impacts on streamside woody regeneration, 3) severity and 4) extent of ground disturbances from trailing, trampling, and wallowing, and 5) severity and 6) extent of streambank degradation. Multiple georeferenced photo points are taken along each segment to document evidence of livestock impacts.

Each survey is broken down into ¼- ½ mile field-delineated segments of cuckoo critical habitat based on topography, access, and trends in severity of adverse modification. At each segment endpoint, a condition score is recorded for each of the six impact categories along a range of 0 to 4 based on the severity and extent of the impact. A segment is rated 0 for a particular category if no evidence of impact is observed, 1 if impacts are limited, 2 if impacts are light and scattered, 3 if impacts are moderate and widespread, and 4 if impacts are severe and pervasive. Following field surveys of cuckoo-designated stream reaches, each segment's "overall impact level" (defined as absent, light, moderate or significant) is calculated. To determine overall impact level, the condition severity scores for each segment endpoint are collated and weighted.

Linear critical habitat survey segments were used to clip yellow-billed cuckoo critical habitat polygons using a buffer (avg=600m). Buffer-clipped critical habitat polygons were then joined with survey impact attributes to generate polygons of impact class. Impact class polygons were used to characterize acres of critical habitat surveyed and acres for each impact class. Surveys were prioritized by most recent year where survey years overlapped.

From 2021-2023, the Center surveyed approximately 70% of cuckoo designated acreage for cattle impacts (39,170 acres). Of the total acres surveyed, 80% (31,509 acres) were found to have moderate to significant adverse modification immediately prior to, or during, cuckoo nesting and breeding season.

The Center's assessments of cuckoo critical habitat on public lands in Arizona and New Mexico consistently reveal that sufficient riparian vegetation is lacking from most grazing allotments, and at a critical time when cuckoo arrive to select nesting sites. Cattle consistently

[24] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20808.

concentrate in riparian zones, often leaving bare, denuded ground and polluted, fecal-laden water. Survey results reasonably fit FWS's own definition of overgrazing or poorly managed grazing, where cattle have created conditions that compromise or eliminate habitat structure required for successful cuckoo reproduction.

Surveys conducted on Coronado and Tonto national forests, Gila Box Riparian National Conservation Area, San Pedro Riparian National Conservation Areas, Agua Fria National Monument, and several other important public land riparian areas managed by the BLM have all led to subsequent litigation over the state and quality of cuckoo breeding habitat as affected by cattle grazing. Even on lands specifically designated by Congress to protect riparian values, the majority of streamside habitat showed significant damage from livestock.

The following figures, with photographic examples, demonstrate the vast extent of cattle damage to designated cuckoo critical habitat across Arizona. Publicly available interactive maps are also available at the following website: https://center.maps.arcgis.com/apps/instant/basic/index.html?appid=52860d7317bb4148ad2a9ac5a90ab118.

Figure 1. Cattle impacts on cuckoo critical habitat on public land in eastern Arizona and southwestern New Mexico

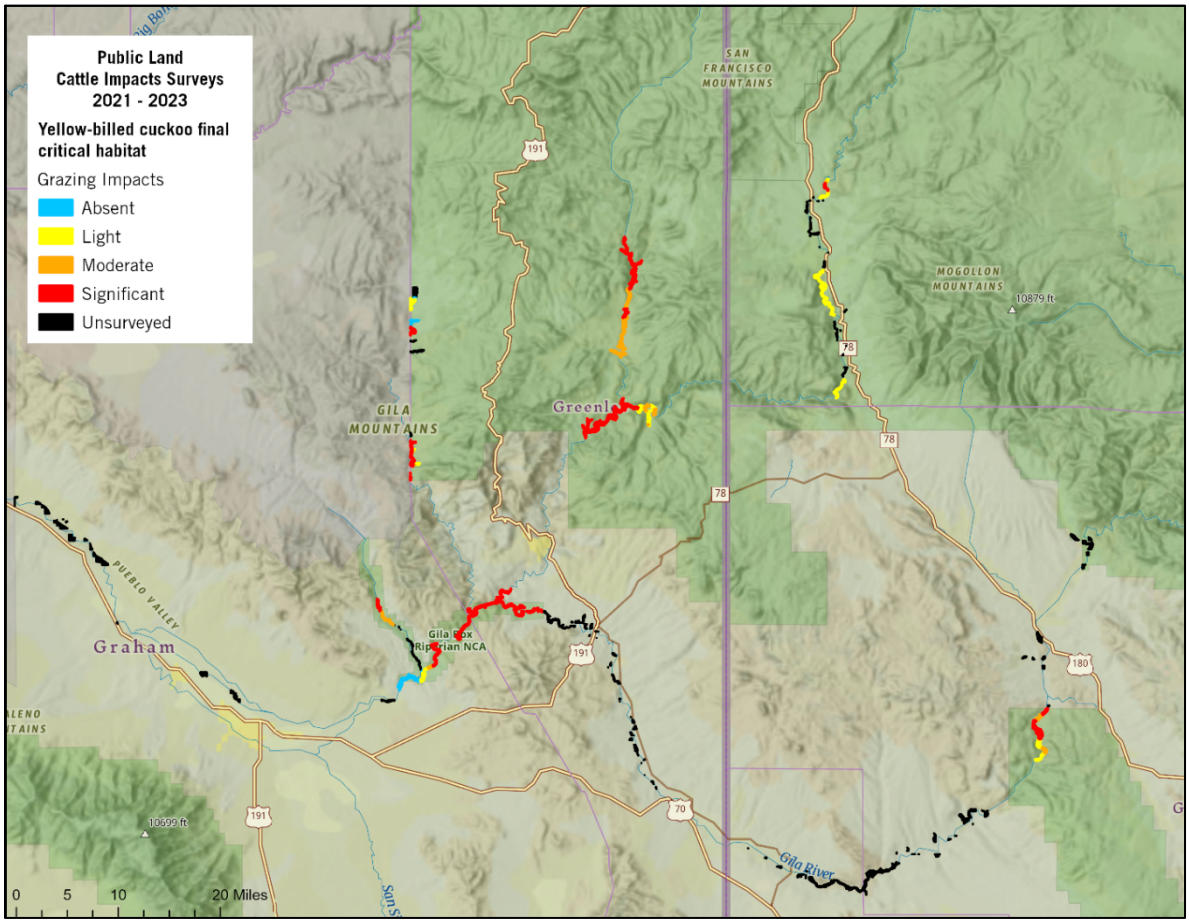

Figure 2. Designated yellow-billed cuckoo critical habitat in the Gila Box Riparian National Conservation Area, where no cattle grazing is allowed. 33.010634, -109.555424, June 1, 2021 (1); 32.972224,-109.350014, March 4, 2024 (2)

Figure 3. Cattle impacts on cuckoo critical habitat on public land in southern Arizona

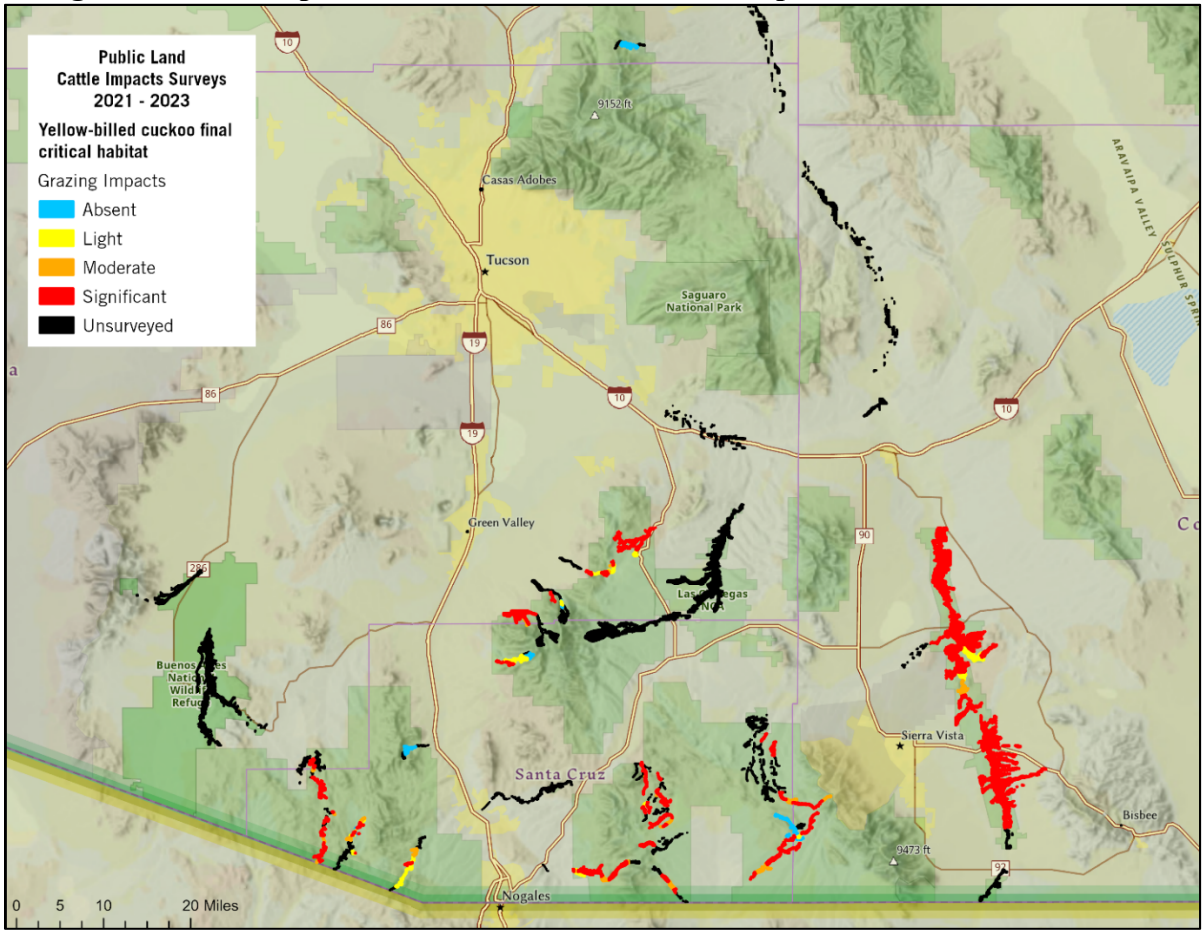

Figure 4. Grazed cuckoo critical habitat in the Coronado National Forest as it appeared prior to the arrival of nesting cuckoos in May 2022, and where pink flags mark heavily stunted ash saplings (*Fraxinus* sp.) 31.413335, -110.705831 (1), 31.409226, -111.237916 (2)

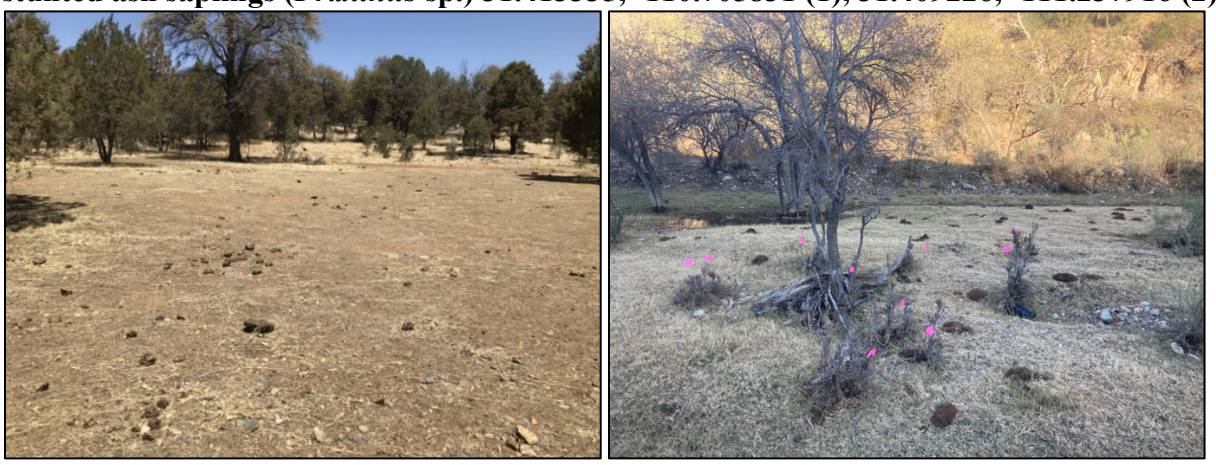

Figure 5. Cattle impacts on cuckoo critical habitat on public land in central Arizona

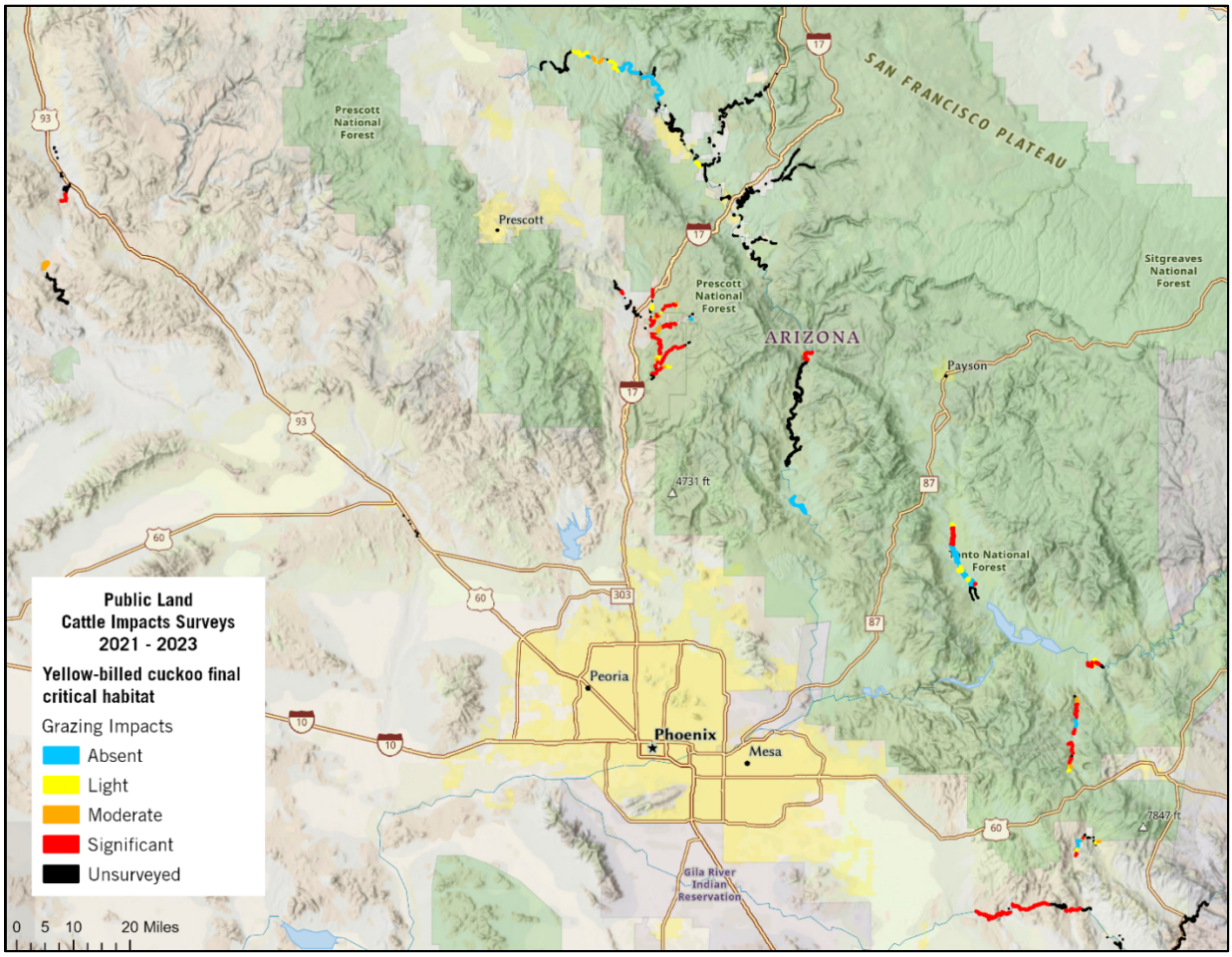

Fig. 6. Grazed yellow-billed cuckoo critical breeding habitat along Little Ash Creek, 34.361028, -112.061924, March 29, 2023 (1); and along the Agua Fria River, 34.240435, -112.06380, April 6, 2023 (2) in Agua Fria National Monument

Discussion

FWS designates critical habitat pursuant to the Endangered Species Act ("ESA") so that such habitat can be managed with the primary goal of recovering threatened and endangered species. The law requires that each federal agency "shall … insure that any action authorized, funded, or carried out by such agency … is not likely to … result in the destruction or adverse modification" of critical habitat.[25] For cuckoo, according to FWS, "managing grazing so that native riparian trees and shrubs will regenerate on a regular basis is especially beneficial."[26] In designating their critical habitat, the agency stated that "[b]ecause the western yellow-billed cuckoo is listed as threatened, all the units [that] are occupied during the breeding season and habitat would need to be protected during the nonbreeding season, the majority of actions necessary to conserve the species would be required based on the listing of the western yellow-billed cuckoo."[27] Finally the agency stated that "habitat in Arizona needs to be conserved to enable western yellow-billed cuckoos to produce young that may eventually disperse to other parts of the DPS's range."[28]

Despite these conclusions Center survey data show adverse modification and destruction of critical habitat from BLM and Forest Service-managed livestock grazing in most designated cuckoo habitat within livestock grazing allotments. In violation of the ESA and other laws, federal agencies continue to authorize cattle grazing in cuckoo critical habitat, often without any enforceable measures of protection and with no numeric limits on the amount of "take" (harm or death) to cuckoos. Despite the quoted statements above, FWS supervisors routinely conclude that cattle grazing does not meaningfully conflict with cuckoos' resource needs. The agency reasons that since cuckoo have not been completely extirpated from livestock-degraded areas, there is no real harm. In a recent Biological Opinion from 2021, it stated that "the cuckoo is currently widespread throughout its range and in the action area, where ongoing livestock grazing has occurred for many decades and continues."[29] A more accurate statement is that livestock grazing has occurred for many decades and continues,[30] resulting in cuckoo now being listed under the ESA, due primarily to habitat loss,[31] and rare throughout their range.[32]

The majority of grazed western riparian areas are already grossly deficient of willow understory and nearly devoid of overstory cottonwood.[33,34] Foraging cattle continue to reduce the density of willow and other shrubs, eliminate cottonwood and willow reproduction by feeding on

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[25] 16 U.S.C. § 1536(a)(2).

[26] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Proposed Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 158, August 15, 2014, page 48555.

[27] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021, page 20831.

[28] *Id.,* page 20813.

[29] Biological Opinion on Ongoing Grazing on the Coronado National Forest, Graham, Cochise, Pima, Pinal, and Santa Cruz Counties, Arizona and Hidalgo County, New Mexico. AESO/SE, 2-21-98-F-399, 2-21-98-F-399R1, 02EAAZ00-2019-F-0867, September 30, 2021, p. 188.

[30] *Ibid.*

[31] Designation of Critical Habitat for the Western Distinct Population Segment of the Yellow-Billed Cuckoo Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register Vol. 86, No. 75, Wednesday, April 21, 2021.

[32] Diebolt, S., Chief, A.B. and Diebolt, D.M., 2018. Fish and Wildlife Service Arizona Ecological Services Office.

[33] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.

[34] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

and trampling seedlings, and modify habitat through soil compaction and other means.[35,36,37,38,39] This ecological impact has resulted in doomed stands of riparian forest where old cottonwood trees in the overstory are dying with no new recruitment to replace themselves.[40,41,42,43]

Ecological conditions on western public lands have worsened recently[44] mainly due to reduced productivity caused by livestock production in conjunction with a changing climate and an historically unprecedented "megadrought."[45,46] Using public lands for livestock production is known to exacerbate the effects of climate change and has a disproportionately negative effect on rare riparian ecosystems.[47] Within the past 100 years, an estimated 95% of riparian habitat in the West has been destroyed;[48] as we demonstrate, this destruction is ongoing. There is no evidence to suggest that climate trends will suddenly change.[49]

FWS recognizes this predictable and escalating climate problem but has failed to take meaningful action to mitigate it. FWS has confirmed that "[w]here tree regeneration and survival are lacking, suitable cuckoo habitat may cease to exist or may support fewer cuckoos when mature trees die."[50] In addition FWS has concluded that the cuckoo's habitat may be reaching a tipping point: "humidity, important for prey production and cuckoo nesting in southeastern Arizona, will decline and temperature and evapotranspiration will increase as habitat declines and fragmentation increases. These factors may reach a threshold in which cuckoos may no longer breed or may breed in reduced densities in some reaches."[51] The agency has even stated, regarding the Coronado National Forest in Arizona, that "we also anticipate that climate change

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[35] Glinski, R.L., 1977, July. Regeneration and distribution of sycamore and cottonwood trees along Sonoita Creek, Santa Cruz County, Arizona. In Johnson, RR, and Jones, DA, tech. coords. Importance, preservation and management of riparian habitat: a symposium. Gen. Tech. Rep. RM-43. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station (pp. 116-123).

[36] Belsky, A.J., Matzke, A. and Uselman, S., 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and water Conservation*, *54*(1), pp.419-431.

[37] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. *Desert Plants*.

[38] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation Biology, *8*(3), pp.629-644.

[39] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[40] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[41] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. *Desert Plants*.

[42] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[43] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[44] Donahue, D.L., 2006. Federal rangeland policy: perverting law and jeopardizing ecosystem services. J. Land Use & Envtl. L., 22, p. 299.

[45] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[46] Williams, A. P., Cook, B. I., & Smerdon, J. E. (2022). Rapid intensification of the emerging southwestern North American megadrought in 2020–2021. Nature Climate Change, 12, 232–234. https://doi.org/10.1038/s41558-022-01290-z

[47] Stromberg, J.C., Setaro, D.L., Gallo, E.L., Lohse, K.A. and Meixner, T., 2017. Riparian vegetation of ephemeral streams. *Journal of Arid Environments*, *138*, pp.27-37.

[48] Krueper, D.J., 1996. Effects of livestock management on Southwestern riparian ecosystems. *Shaw, DW, and Finch, DM, tech. coords. Desired future conditions for southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RM-GTR-272. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station*, pp.281-301.

[49] Large contribution from anthropogenic warming to an emerging North American megadrought, A. Park Williams, et al.; Science 368, 314-318; April 17, 2020.

[50] April 28, 2016, Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona, p. 244.

[51] *Id.*

will degrade habitat to the point of being incapable of supporting the occurrence of yellow-billed cuckoos."[52]

If climate change alone could eliminate cuckoo from their current strongholds, as FWS suggests, federal agencies that continually authorize known negative stressors such as cattle grazing in critical breeding habitat will hasten extinction, particularly when grazing is well known to exacerbate and amplify the effects of drought and climate change. A good rain year cannot compensate for decades of drought and livestock impacts.

Recommendations

Despite dire climate projections forecasted for the southwestern United States, the U.S. Forest Service, Bureau of Land Management, and Fish and Wildlife Service continue to authorize status quo livestock grazing on federal public lands with no practical or meaningful revisions to protect riparian habitat or the imperiled cuckoo. Instead, management strategies are implemented that provide short-term benefits for livestock permit-holders at the cost of continual ecosystem degradation and removal of what little cover is available for wildlife, including birds that require vegetative structure for nesting success such as yellow-billed cuckoo.

According to the U.S. Department of Justice, "[i]t's well settled that cattle and riparian areas do not mix."[53] To ensure recovery of cuckoo populations, as the law mandates and as FWS appears to grudgingly admit, critical habitat requires protection from livestock grazing year-round.

Based on federal land managers' and livestock permit-holders' inability to prevent continued degradation of riparian habitat on the vast majority of habitat surveyed, the Center recommends that agencies exclude livestock from cuckoo habitat inArizona and New Mexico. Livestock exclusion is also the best way to mitigate climate change and aridification. Seedlings of riparian trees tend to recover rapidly after exclusion of livestock grazing;[54,55,56] removal of

[52] *Id.,* page 242.

[53] Environment and Natural Resources Division Senior Trial Attorney Andrew A. Smith. New Mexico Cattle Growers' Association, et al. v. United States Forest Service, et al., Case 1:23-cv-00150-JB-GBW, Albuquerque, NM, February 1, 2024, page 126; Hearing Transcript.

[54] Stromberg, J.C., 1993. Fremont cottonwood-Goodding willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110.

[55] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

[56] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In California Riparian Systems (pp. 97-108). University of California Press.

cattle grazing has been correlated with dramatic increases in dense willow thickets, necessary for cuckoo and other riparian species to survive an uncertain future.[57,58,59,60, 61,62]

Only eliminating livestock access to ephemeral, intermittent, and perennial drainages will allow tree and shrub seedlings to grow and survive. While the effects of climate change are difficult to control, we can greatly improve riparian habitat on public lands in the Southwest by excluding livestock from these areas, thus reducing the habitat destruction, trampling, erosion, and soil compaction that accompany grazing and thereby actively promoting recovery of native ecosystems.

[57] Cannon, R.W. and Knopf, F.L., 1984. Species composition of a willow community relative to seasonal grazing histories in Colorado. *The Southwestern Naturalist*, *29*(2), pp.234-237.

[58] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. Desert Plants.

[59] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.

[60] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.

[61] Szaro, R.C. and Pase, C.P., 1983. Short-term changes in a cottonwood-ash-willow association on a grazed and an ungrazed portion of Little Ash Creek in central Arizona *Populus fremontii*, velvet ash, *Fraxinus velutina*, Goodding willow, *Salix gooddingii*. Rangeland Ecology & Management/Journal of Range Management Archives, 36(3), pp.382-384.

[62] Response of breeding birds to the removal of cattle on the San Pedro River, Arizona, Krueper, D. J., J. L. Bart, and T. D. Rich. 2003. Conservation Biology 17(2): 607-615.

Grazed to Death:

Livestock Production Adversely Modifying Most Critical Habitat for Northern Mexican Garter Snakes on Public Lands in Arizona

Center for Biological Diversity

September 2024

Summary

Livestock grazing has adversely modified at least 58% of the threatened northern Mexican garter snake's designated critical habitat on public lands in Arizona and New Mexico. In 2021 the U.S. Fish and Wildlife Service designated 20,326 acres of critical habitat for garter snakes, 11,860 acres of which occur on public lands managed by the U.S. Forest Service and the Bureau of Land Management. From 2021 to 2023, Center for Biological Diversity field biologists surveyed 8,127 acres (69%) of the garter snake's critical habitat on public land for adverse modification from livestock grazing. Surveys found moderate to significant impacts and adverse modification across 6,835 acres (84%) of the critical habitat on public lands surveyed and on 58% of all garter snake critical habitat on public lands managed by federal agencies.

Many native southwestern species found in riparian ecosystems, cienegas and other wetlands are threatened, endangered or otherwise imperiled due to habitat loss, degradation and ecosystem alteration.[1] The northern Mexican garter snake (*Thamnophis eques megalops*) is a uniquely adapted reptile native to Arizona and New Mexico that in recent decades has declined dramatically due to a combination of factors including habitat loss, destruction, modification and fragmentation, loss of native prey populations and establishment of nonnative predators.[2] This decline is reflected by widespread reductions of existing populations and local extirpations.[3] Garter snakes now exist in small, disconnected populations vulnerable to inbreeding depression, random events, and climate change with associated drought.[4]

Despite conceding that garter snakes were declining, severely threatened and extirpated from 85% to 90% of their range throughout the Southwest, the Fish and Wildlife Service declined for more than a decade to list garter snakes under the Endangered Species Act. Finally, in 2014, garter snakes were legally protected as a threatened species under the Act. In 2021 the agency designated 20,326 acres of protected critical habitat for northern Mexican garter snakes in Arizona and New Mexico,[5] a 90% reduction from the original acreage the agency had proposed in 2014 and 2020.[6] This drastic, scientifically unsupported reduction of the proposed critical habitat — that the Fish and Wildlife Service itself had previously recognized as necessary for recovery and meeting the statutory definition of critical habitat for garter snakes — is not nearly enough for these iconic native reptiles to survive and recover.

Unless the Fish and Wildlife Service designates the originally proposed critical habitat, garter snakes will remain in highly fragmented and isolated populations prone to extirpation through low genetic diversity, high inbreeding and random events. Worse still, this report shows that what remains of their designated critical habitat is being moderately to significantly degraded by authorized and unauthorized livestock grazing, and nonfunctional exclusion fences. Cattle grazing is causing significant damage to vegetation, water and soils in both riparian and upland habitat throughout public lands in Arizona. This is further contributing to the probability of garter snake extinction.

Garter Snake Habitat Needs and Damage Cause by Livestock Grazing

Although northern Mexican garter snakes have been found in a variety of vegetation types within the riparian zone (i.e., grasses, shrubs and wetland plants), the underlying habitat characteristic required by garter snakes appears to be dense vegetation or other natural structural

[1] Johnson, A.S., 1989. The thin green line: riparian corridors and endangered species in Arizona and New Mexico. *In defense of wildlife: preserving communities and corridors. Defenders of Wildlife, Washington, DC*, pp.35-46.

[2] Threatened Status for the Northern Mexican Gartersnake and the Narrow-headed Gartersnake, Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 79, No. 130, July 8, 2014.

[3] Brennan, Thomas C., and Andrew T. Holycross. Field guide to amphibians and reptiles in Arizona. Arizona Game and Fish Dept., 2006.

[4] Wood, D.A., Emmons, I.D., Nowak, E.M., Christman, B.L., Holycross, A.T. and Vandergast, A.G., 2018. Conservation genomics of the Mogollon Narrow-headed gartersnake (*Thamnophis rufipunctatus*) and Northern Mexican gartersnake (*Thamnophis eques megalops*) (No. 2018-1141). US Geological Survey.

[5] Designation of Critical Habitat for the Northern Mexican Gartersnake, Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 86, No. 80, April 28, 2021.

[6] Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake, Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 85, No. 82, April 28, 2020.

components that provide cover for the species.[7] When not in the water, they usually conceal themselves under dense vegetation.[8]

According to the Fish and Wildlife Service,[9] the primary biological features required by garter snakes include perennial or intermittent streams that provide 1) slow-moving water with in-stream pools, off-channel pools and backwater habitat, and 2) aquatic and terrestrial garter snake habitat for population connectivity. Garter snakes also require streams, off-channel springs, cienegas and natural and constructed wetlands that contain 1) organic and natural inorganic structural features, including dense aquatic and wetland vegetation within the stream channel for thermoregulation, shelter, foraging opportunities and protection from predators, 2) terrestrial habitat adjacent to the stream channel that includes riparian vegetation and small mammal burrows, and 3) water quality that is absent of pollutants or, if pollutants are present, at levels low enough that recruitment of northern Mexican garter snakes is not inhibited.[10]

But despite the known importance of clean water and ground cover found in riparian, understory and upland vegetation, cattle production on national forests, national conservation lands, and other public lands has removed, degraded and/or eliminated these vitally important garter snake habitat components in riparian and upland ecosystems throughout the arid Southwest.[11] Arid lands livestock production, with its unavoidable harm to riparian ecosystems, cienegas and other wetlands, reduces the quantity, quality and distribution of key habitat features that are important for garter snake thermoregulation, shelter, foraging opportunities, protection from predators and recovery.

Livestock grazing causes wholescale and long-term changes to watershed function.[12] Cattle degrade riparian zones by removing bank-line and herbaceous ground-cover vegetation, preventing tree establishment, fouling water with animal waste, compacting soil, increasing runoff and erosion, and reducing water infiltration.[13] Intact vegetation functions as a barrier that

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[7] Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake, Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 85, No. 82, April 28, 2020, page 23615.

[8] *Id.*, page 23617.

[9] *Id*., page 23623-4.

[10] *Ibid.*

[11] Bock, C.E., J.H. Bock, L. Kennedy, and Z.F. Jones. 2007. Spread of non-native grasses into grazed versus ungrazed desert grasslands. Journal of Arid Environments 71:229-235; Bock, C.E., V.A. Saab, T.D. Rich, and D.S. Dobkin. 1993. Effects of livestock grazing on Neotropical migratory land birds in Western North America. Pages 296-309 in Status and Management of Neotropical Migratory Birds. D.M. Finch and P.W. Stangel, editors. USDA, Forest Service, GTR RM-229. 422pp.; Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. Conservation Biology 8:629-644.; Krueper, D.J. 1993. Effects of land use practices on Western riparian ecosystems. Pages 321-330 in Status and Management of Neotropical Migratory Birds. D.M. Finch and P.W. Stangel, editors. USDA, Forest Service, GTR RM-229. 422pp.

[12] Armour, C., Duff, D. and Elmore, W., 1994. The effects of livestock grazing on western riparian and stream ecosystem. *Fisheries*, *19*(9), pp. 9-12.; Belsky, A.J., Matzke, A. and Uselman, S., 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and water Conservation*, *54*(1), pp. 419-431.; Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp. 629-644.; Poff, B., Koestner, K.A., Neary, D.G. and Henderson, V., 2011. Threats to riparian ecosystems in Western North America: an analysis of existing literature 1. *JAWRA Journal of the American Water Resources Association*, *47*(6), pp. 1241-1254.

[13] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation biology, 8(3), pp.629-644; Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River; Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. Desert Plants; Stromberg, J.C., 1993. Fremont cottonwood-Goodding

slows and traps rainfall, sediments and nutrients.[14] As livestock alter and reduce native plant communities,[15] soil exposure leads to interrill erosion (soil detached by raindrops, then transported by shallow sheet flow) and gullying following downpours.[16] Grazing harm to ecohydrological systems at any intensity reduce soil permeability and water infiltration.[17] For water-limited vegetation, growth and survival are improved if rainfall is allowed to permeate the soil, but not if it runs off-site.[18] These effects compound, exacerbating desertification and ultimately leading to loss of soil fertility, failure of rainfall to moisten soil layers and recharge groundwater, and higher ground temperatures during the hottest months of the year. This is a disastrous feedback cycle that prevents native plant recovery and reestablishment.[19]

According to the Fish and Wildlife Service,[20] activities likely to destroy or adversely modify garter snake critical habitat include, but are not limited to 1) actions that would significantly increase sediment deposition or scouring within the stream channel, including poorly managed livestock grazing,[21] 2) actions that would alter water chemistry beyond the tolerance limits of garter snake prey, including biological pollutants and/or livestock grazing that results in waters heavily polluted by feces,[22] and 3) actions that would remove, diminish or significantly alter the structural complexity of key natural habitat features in and adjacent to aquatic habitat.[23]

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willow riparian forests: a review of their ecology, threats, and recovery potential. Journal of the Arizona-Nevada Academy of Science, pp.97-110; Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173; Schulz, T. T., & Leininger, W. C. (1990). Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management, 43(4), 295-299.

[14] Ludwig, J.A., Wilcox, B.P., Breshears, D.D., Tongway, D.J. and Imeson, A.C., 2005. Vegetation patches and runoff–erosion as interacting ecohydrological processes in semiarid landscapes. Ecology, 86(2), pp.288-297.

[15] Vallentine, J. F. 1990. Grazing management. San Diego, CA, USA: Academic Press. 533 pp.; Popolizio, C.A., Goetz, H. and Chapman, P.L., 1994. Short-term response of riparian vegetation to 4 grazing treatments. *Rangeland Ecology & Management/Journal of Range Management Archives*, *47*(1), pp. 48-53. Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. Desert Plants

[16] Erman et al. 1977, Osborne, L.L. and Kovacic, D.A., 1993. Riparian vegetated buffer strips in water-quality restoration and stream management. Freshwater biology, 29(2), pp. 243-258; Schulz, T. T., & Leininger, W. C. (1990). Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management, 43(4), 295-299.; Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. Conservation biology, 8(3), pp. 629-644.; Ohmart, R.D., 1996. Ecological condition of the East Fork of the Gila River and selected tributaries: Gila National Forest, New Mexico. General Technical Report RM., 272, p. 312; Abrahams, A.D., Parsons, A.J. and Wainwright, J., 1995. Effects of vegetation change on interrill runoff and erosion, Walnut Gulch, southern Arizona. Geomorphology, 13(1-4), pp.37-48.

[17] Gifford, G.F. and Hawkins, R.H., 1978. Hydrologic impact of grazing on infiltration: a critical review. *Water Resources Research*, *14*(2), pp.305-313. Ludwig, J.A., Wilcox, B.P., Breshears, D.D., Tongway, D.J. and Imeson, A.C., 2005. Vegetation patches and runoff–erosion as interacting ecohydrological processes in semiarid landscapes. Ecology, 86(2), pp.288-297.

[18] Colloff, M.J., Pullen, K.R. and Cunningham, S.A., 2010. Restoration of an ecosystem function to revegetation communities: the role of invertebrate macropores in enhancing soil water infiltration. Restoration Ecology, 18, pp.65-72. Ludwig, J.A., Wilcox, B.P., Breshears, D.D., Tongway, D.J. and Imeson, A.C., 2005. Vegetation patches and runoff–erosion as interacting ecohydrological processes in semiarid landscapes. Ecology, 86(2), pp.288-297.

[19] Schlesinger, W.H., Reynolds, J.F., Cunningham, G.L., Huenneke, L.F., Jarrell, W.M., Virginia, R.A. and Whitford, W.G., 1990. Biological feedbacks in global desertification. *Science*, *247*(4946), pp. 1043-1048.

[20] Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake, Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 85, No. 82, April 28, 2020, page 23615page 23633.

[21] *Ibid.*

[22] *Ibid.*

[23] Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake, Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 85, No. 82, April 28, 2020, page 23633.

The Fish and Wildlife Service has defined poor livestock management as "grazing conducted in a manner not in accordance with approved allotment management plans or otherwise considered adverse to maintaining natural habitat characteristics."[24] Poorly managed livestock grazing, a known and acknowledged threat to garter snakes, according to the agency,[25] is causing removal, diminishment, and/or significant changes to natural habitat features necessary for garter snakes to survive. Worse, it occurs wholescale within designated critical habitat that the Fish and Wildlife Service should be prioritizing to support garter snake recovery.

Surveying Adverse Modification of Critical Habitat from Livestock Grazing

In Arizona and New Mexico, approximately 11,860 acres of garter snake designated critical habitat overlaps with public lands managed by the U.S. Forest Service and the Bureau of Land Management. Following designation of garter snake critical habitat in 2021,[26] the Center began systematically surveying and quantifying cattle impacts to critical habitat on public lands in Arizona. The rationale for this effort is 1) the well-known harm to garter snake habitat from livestock grazing, and 2) the fact that neither the Bureau of Land Management nor the Forest Service systematically survey and assess the public lands they manage for the health of riparian ecosystems in the context of habitat needs of threatened and endangered species.

Each year professional field biologists document livestock impacts on standing waters, riparian vegetation, soils and streambanks within designated critical habitat and examine protective fencing where applicable. Using a standardized protocol, surveyors record 1) severity of grazing impacts on herbaceous vegetation, 2) severity of browsing impacts on streamside woody regeneration, 3) severity and extent of ground disturbances from trailing, trampling and wallowing, and 4) severity and extent of streambank degradation. Multiple georeferenced photo points are taken along each segment to document evidence of harm from livestock.

Each survey is broken down into ¼- ½ mile field-delineated segments of garter snake critical habitat based on topography, access and trends in severity of adverse modification. At each segment endpoint, a condition score is recorded for each of the six impact categories along a range of 0 to 4 based on the severity and extent of the impact. A segment is rated 0 for a particular category if no evidence of impact is observed, 1 if impacts are limited, 2 if impacts are light and scattered, 3 if impacts are moderate and widespread, and 4 if impacts are severe and pervasive. Following field surveys of snake-designated streams, each segment's "overall impact level" (defined as absent, light, moderate or significant) is calculated. To determine overall impact level, condition severity scores for each segment are collated and weighted. Survey results are prioritized by most recent year where survey years overlapped.

From 2021 to 2023 the Center surveyed approximately 69% of designated garter snake critical habitat on public lands for cattle impacts (8,127 of 11,860 acres). Of the total acres

[24] Listing and Designation of Critical Habitat for the Chiricahua Leopard Frog, Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 77, No. 54, March 20, 2012, page 16328.

[25] Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake, Proposed Rules, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 85, No. 82, April 28, 2020, page 23633.

[26] Designation of Critical Habitat for the Northern Mexican Gartersnake, Final Rule, DEPARTMENT OF THE INTERIOR Fish and Wildlife Service, Federal Register, Vol. 86, No. 80, April 28, 2021.

surveyed, 84% (6,835 acres) were found to have moderate to significant adverse modification, which is 58% of the total 11,860 acres of garter snake critical habitat found on public land in Arizona.

The Center's assessments of garter snake critical habitat on public lands in Arizona consistently show that grazing activities are continually diminishing riparian ecosystems on which these imperiled native reptiles depend. Appropriate and adequate vegetation to meet garter snake life- history requirements is often lacking because cattle consistently concentrate in riparian zones, leaving bare, denuded ground and polluted, feces-laden water. Survey results reasonably fit the Fish and Wildlife Service's own definition of overgrazing or poorly managed grazing, where cattle have created conditions that compromise or eliminate habitat required by garter snake populations.

Surveys conducted on the Coronado and Tonto national forests, the San Pedro Riparian National Conservation Area, and several other important public land riparian areas managed by the Bureau of Land Management have all led to litigation over the state and quality of critical habitat because of cattle grazing. Even on lands specifically designated by Congress to protect riparian values, the majority of streamside habitat showed significant damage from livestock.

The following figures and photos demonstrate the vast extent of cattle damage to designated garter snake critical habitat across Arizona. Interactive maps are also available.

Figure 1. Cattle impacts on northern Mexican garter snake critical habitat on public land in Arizona.

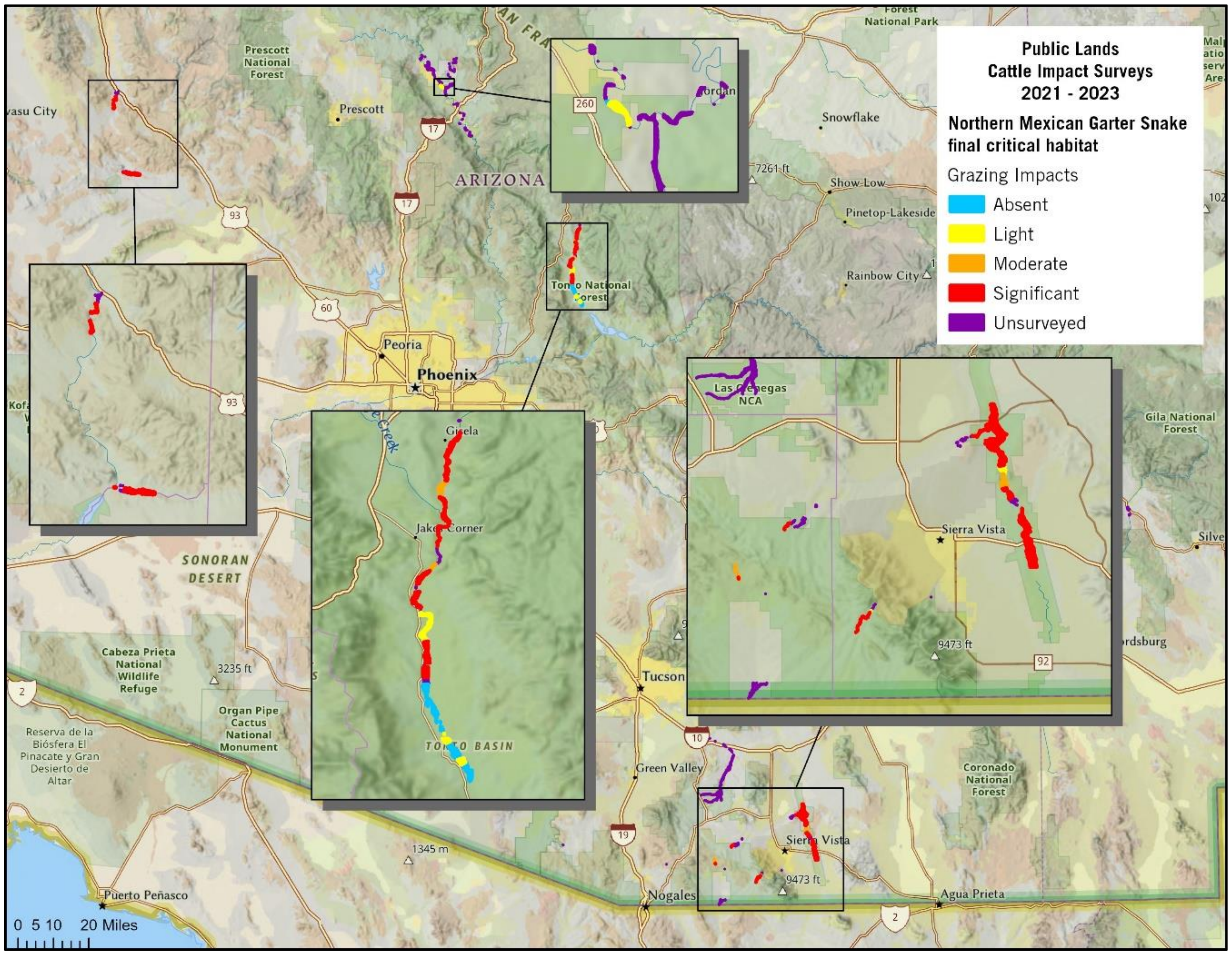

Figure 2. Northern Mexican garter snake designated critical habitat in the Coronado National Forest. 31.479971, -110.569226 (1), 31.510437, -110.617239 (2). June 2, 2021.

Figure 3. Northern Mexican garter snake designated critical habitat on the Tonto Basin allotment, Tonto National Forest, within the Tonto Creek Riparian Unit where no grazing is authorized. 33.897240, -111.306400 (1); 33.896018, -111.306614 (2). June 7, 2021.

Figure 4. Northern Mexican garter snake designated critical habitat on the Babocomari allotment, within the San Pedro Riparian National Conservation Area, Bureau of Land Management. 31.705706, -110.215737 (1), March 19, 2021; 31.709048, -110.206966 (2), March 31, 2023.

Discussion

The Fish and Wildlife Service designates critical habitat under the Endangered Species Act to ensure that this habitat is managed with the primary goal of recovering threatened and endangered plants and animals. The law requires that each federal agency must "insure that any action authorized, funded, or carried out by such agency … is not likely to … result in the destruction or adverse modification" of critical habitat.[27]

Center survey data show adverse modification and destruction of critical habitat from Bureau of Land Management and Forest Service-managed livestock grazing on most the garter snakes' designated habitat on public lands. In violation of the Endangered Species Act and other laws, federal agencies continue to authorize cattle grazing in garter snake critical habitat often without any enforceable measures of protection and with no limits on the number of garter snakes that can be harmed or killed. In many locations, including the Tonto National Forest, there is no consultation in place for grazing allotments that support critical habitat for garter snakes. These threatened snakes and their designated riparian critical habitat therefore depend on business-as-usual livestock management, nonfunctional exclosures and non-applicable cow utilization metrics for their conservation and recovery, with no specific guidance or terms and conditions to avoid harming or killing the snakes.

Ecological conditions on western public lands have worsened recently,[28] mainly because of livestock production in conjunction with a changing climate and a historically unprecedented "megadrought."[29,30] Using public lands for livestock production is known to exacerbate the harms from climate change.[31] Within the past 100 years, an estimated 95% of riparian habitat in the West has been destroyed[32] and, as we demonstrate, this destruction is ongoing. There is no evidence to suggest that climate trends will suddenly change for the better.[33]

Federal agencies recognize this predictable and escalating climate problem but have failed to take meaningful action to mitigate it. Arid lands livestock production is well known to exacerbate and amplify harms from drought and climate change[34] and has a

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[27] 16 U.S.C. § 1536(a)(2).

[28] Donahue, D.L., 2006. Federal rangeland policy: perverting law and jeopardizing ecosystem services. J. Land Use & Envtl. L., 22, p. 299.

[29] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[30] Williams, A. P., Cook, B. I., & Smerdon, J. E. (2022). Rapid intensification of the emerging southwestern North American megadrought in 2020–2021. Nature Climate Change, 12, 232–234. https://doi.org/10.1038/s41558-022-01290-z

[31] Kauffman, J.B., Beschta, R.L., Lacy, P.M. *et al.* Livestock Use on Public Lands in the Western USA Exacerbates Climate Change: Implications for Climate Change Mitigation and Adaptation. *Environmental Management* **69**, 1137–1152 (2022). https://doi.org/10.1007/s00267-022-01633-8

[32] Krueper, D.J., 1996. Effects of livestock management on Southwestern riparian ecosystems. *Shaw, DW, and Finch, DM, tech. coords. Desired future conditions for southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RM-GTR-272. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station*, pp.281-301.

[33] Large contribution from anthropogenic warming to an emerging North American megadrought, A. Park Williams, et al.; Science 368, 314-318; April 17, 2020.

[34] Kauffman, J.B., Beschta, R.L., Lacy, P.M. *et al.* Livestock Use on Public Lands in the Western USA Exacerbates Climate Change: Implications for Climate Change Mitigation and Adaptation. *Environmental Management* **69**, 1137–1152 (2022). https://doi.org/10.1007/s00267-022-01633-8

disproportionally negative effect on rare riparian ecosystems.[35] Therefore, federal agencies that continually authorize known negative stressors such as cattle grazing in riparian critical habitat are responsible for hastening the extinction of threatened and endangered animals and plants.

Recommendations

Despite dire climate projections forecasted for the Southwest, the Forest Service, the Bureau of Land Management, and the Fish and Wildlife Service continue to authorize status quo livestock grazing on federal public lands with no practical or meaningful policies or actions to protect riparian ecosystems or the imperiled native species, such as northern Mexican garter snakes, whose future survival depends on them. Instead, the agencies implement management strategies that provide short-term benefits for livestock permit-holders at the cost of continual ecosystem degradation and removal of what little habitat and cover is available for wildlife.

The Center recommends that agencies exclude livestock from garter snake habitat in Arizona and New Mexico. This is based on our critical habitat survey results and the inability of federal land managers and livestock permit-holders to prevent continued degradation of riparian habitat on the majority of habitat surveyed. This recommendation is also based on the absence of management plans or conservation agreements that meaningfully conserve the physical and biological features that garter snakes depend on,

To ensure recovery of northern Mexican garter snakes, the small, disconnected parcels of designated critical habitat granted by the Fish and Wildlife Service must be protected year-round from livestock. Degradation should no longer be allowed to continue in areas designated as critical to recovering threatened and endangered species. The survival of these imperiled garter snakes will ultimately depend on riparian restoration, not degradation. Such an approach would have significant benefits to the garter snake, and all other wildlife that depend on riparian areas, with minimal harm to the livestock industry.

Keeping livestock out of these areas is the best way to mitigate climate change and aridification, as removal of cattle grazing has been correlated with dramatic increases in native riparian vegetation.[36,37,38,39] Only by eliminating the harm from livestock will native riparian ecosystems survive and recover in this historic Anthropocene era defined by record heat and drought. While the effects of climate change are difficult to control, riparian habitat

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[35] Stromberg, J.C., Setaro, D.L., Gallo, E.L., Lohse, K.A. and Meixner, T., 2017. Riparian vegetation of ephemeral streams. *Journal of Arid Environments*, *138*, pp.27-37.

[36] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In California Riparian Systems (pp. 97-108). University of California Press.

[37] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

[38] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. Desert Plants.

[39] Szaro, R.C. and Pase, C.P., 1983. Short-term changes in a cottonwood-ash-willow association on a grazed and an ungrazed portion of Little Ash Creek in central Arizona *Populus fremontii*, velvet ash, *Fraxinus velutina*, Goodding willow, *Salix gooddingii*. Rangeland Ecology & Management/Journal of Range Management Archives, 36(3), pp.382-384.

on public lands in the Southwest can be dramatically improved simply by excluding livestock from these areas. By eliminating chronic vegetation removal, trampling, and soil compaction and by reducing ongoing sedimentation and erosion, we can finally begin to promote recovery of native ecosystems before it's too late.

According to the U.S. Department of Justice, "it's well settled that cattle and riparian areas do not mix."[40] The Center's survey data reinforce this conclusion. It's time the federal agencies tasked with protecting our natural heritage do something about it.

[40] Environment and Natural Resources Division Senior Trial Attorney Andrew A. Smith. New Mexico Cattle Growers' Association, et al. v. United States Forest Service, et al., Case 1:23-cv-00150-JB-GBW, Albuquerque, NM, February 1, 2024, page 126; Hearing Transcript.

Livestock Damage to Aquatic and Riparian Critical Habitat in the U.S. Southwest: Field Assessment Results 2017-2024

Grazed yellow-billed cuckoo riparian critical habitat on Montana allotment, Coronado National Forest. May 5, 2021.

Center for Biological Diversity

March 2025

Executive Summary

This report provides the Bureau of Land Management (BLM), U.S. Forest Service (FS), and U.S. Fish and Wildlife Service (FWS) the results of the Center for Biological Diversity's (Center) field assessments of livestock grazing damage to aquatic and riparian critical habitat on federal public land in Arizona, New Mexico, and Utah from 2017-2024.

Since 2017, we've assessed critical habitat within a total of 213 federally managed grazing allotments (178 FS and 35 BLM), and in critical habitat administered by both agencies outside of allotments. Administrative units include the Apache-Sitgreaves, Coconino, Coronado, Gila, Lincoln, Prescott, Santa Fe, and Tonto National Forests; the Phoenix, Gila, Hassayampa, and Paria River BLM Districts; two BLM-administered National Monuments (Grand Staircase-Escalante and Agua Fria); and two BLM-administered Riparian National Conservation Areas (Gila Box and San Pedro).

Field assessments characterize livestock grazing impacts to aquatic and riparian critical habitat and document whether livestock are present in critical habitats from which they have been excluded under previous agency decisions. Assessments involve critical habitat for spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, Jemez Mountains salamander, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, western yellow-billed cuckoo, Mexican spotted owl, New Mexico meadow jumping mouse, jaguar, Arizona eryngo, and Huachuca water umbel. Other ESA-listed species including desert pupfish and Gila topminnow may be found in some survey areas but lack critical habitat.

This report constitutes the best available scientific information regarding the condition of the Southwest's aquatic and riparian critical habitat because the agencies lack systematic monitoring of the condition of physical and biological features that are essential to conservation of endangered and threatened species. We report results in summary tables organized by year, administrative unit, jurisdiction, and allotment. We present stream miles and percentages of cattle impact levels by district, allotment, and year. We also present comparative data of moderate-significant impacts across all survey years. Results synthesize thousands of georeferenced datapoints that are databased at the Center alongside accompanying photographs of damaged critical habitat.

Of the cumulative 2,435.6 critical habitat stream miles surveyed[1], 50 percent of the cumulative total (1,197.8 miles) showed significant damage from livestock grazing; 13 percent (315.0 miles) showed moderate damage; 23 percent (558.1 miles) showed light damage, and 14 percent (364.7 miles) showed no damage (Table 1). In 2024, assessments across 489.3 critical habitat stream miles show 45 percent of miles (217.9 miles) with significant damage, 13 percent (63.2 miles) with moderate damage, 16 percent (79.5 miles) with light damage, and 26 percent (126 miles) with no damage.

Our data show that across all survey years, and continuing in 2024, livestock grazing is causing moderate or significant damage and ongoing degradation of aquatic and riparian critical

[1] The cumulative total includes stream segments that were resurveyed in subsequent years.

habitat across federal land jurisdictions regionally. Results show that livestock grazing remains an impediment to the survival and recovery of threatened and endangered species in the Southwest. Federal agency action is needed to protect riparian critical habitat from livestock grazing damage and to prevent resultant jeopardy of threatened and endangered species in Arizona, New Mexico, and Utah. Otherwise, status quo federal agency livestock management risks driving to extinction those species that rely on riparian habitat here.

Background

More than a century of livestock grazing in Southwestern riparian ecosystems has led to a decline in insects, fish, reptiles, amphibians, birds, mammals, ground cover, biomass, and native vegetation,[2] making grazing the most destructive and widespread activity wrought on desert rivers and watersheds since the arrival of American settlers.

Decades of scientific research comparing grazed and ungrazed areas have documented that livestock grazing in the arid Southwest negatively effects water quality and quantity, stream channel morphology, hydrologic function, soil stability, streambank vegetation, and aquatic and riparian wildlife—proving that livestock grazing is an ecological catastrophe.[3]

FS scientists have concluded that grazing is the most studied threat to riparian areas in the American West[4] and that livestock use is incompatible with maintenance of habitat for wetland and riparian wildlife.[5] Livestock grazing effects have contributed to the listing of many threatened and endangered species, including the yellow-billed cuckoo,[6] spikedace and loach minnow,[7] northern Mexican and narrow-headed garter snakes,[8] and others.

Grazing impacts on riparian areas fall into four categories: impacts on streamside vegetation, stream channel morphology, water quality/quantity, and streambanks.[9] Collectively,

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[2] Krueper, D.J. 1996. Effects of livestock management on Southwestern riparian ecosystems. Pp 281-301 in Shaw, D.W., and D.M. Finch. 1996. Desired future conditions for Southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RMRS-GTR-272. USDA Forest Service, Fort Collins, CO. 359 p.

[3] Belsky, A.J., A. Matzke, and S. Uselman. 1999. Survey of Livestock Influences on Stream and Riparian Ecosystems in the Western United States. *Journal of Soil and Water Conservation* 54: 419-431.

[4] Poff, B., K.A. Koestner, D.G Neary, and D. Merritt. 2012. Threats to western United States riparian ecosystems: A bibliography. Gen. Tech. Rep. RMRS-GTR-269. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 78 p.

[5] Zwartjes, P.W., J.E. Cartron, P.L.L. Stoleson, W.C. Haussamen, and T.E. Crane. 2005. Assessment of Native Species and Ungulate Grazing in the Southwest: Terrestrial Wildlife. Gen. Tech. Rep. RMRS-GTR-142. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 74 p.

[6] 60 Fed. Reg. at 10707 ("*Overuse by livestock has been a major factor in the degradation and modification of riparian habitats in the United States … Livestock grazing in riparian habitats typically results in reduction of plant species diversity and density, especially of palatable plants like willow and cottonwood saplings*.")

[7] 77 Fed. Reg. at 10818 ("*Impacts associated with roads and bridges, changes in water quality, improper livestock grazing, and recreation have altered or destroyed many of the rivers, streams, and watershed functions in the ranges of the spikedace and loach minnow*.")

[8] 79 Fed. Reg. at 38718 ("*We found numerous effects of livestock grazing that have resulted in the historical degradation of riparian and aquatic communities that have likely affected northern Mexican and narrow-headed gartersnakes.*")

[9] Kauffman, J.B., and W.C. Krueger. 1984. Livestock impacts on riparian plant communities and streamside management implications-a review. *Journal of Range Management* 37(5): 430-438.

these impacts to vegetation, soils, and water lead to losses of wildlife habitat, reduced stream flow, increased pollution, and eradication of plant and animal species.[10] Grazing on riparian plants reduces vegetative cover and exposes soil to erosion, which in combination with streambank trampling leads to increased erosion and turbidity.[11] Livestock congregating in riparian areas feed on native tree and shrub regeneration, disrupting their reproductive cycle and leading to destabilized streambanks,[12] increased water temperatures, loss of hiding and breeding cover, and defecation and urination directly in the water. Reduced rainfall infiltration into soil[13] and increased sediment loads combine to exacerbate riparian ecosystem decline and increase stream down-cutting.[14]

Grazing in adjacent arid uplands and river terraces is equally destructive, with impacts to biological soil crusts, vegetation, soils, and wildlife.[15] A comprehensive review of grazing impacts in the Southwest concluded that no current grazing management system used by land managers is appropriate for the Sonoran Desert.[16] Cattle grazing also negatively impacts high-elevation montane riparian meadows and creeks through hydrologic changes, soil compaction, erosion, bank instability, and siltation.[17] Often, these impacts can have greater effects on wildlife than do wildfires.[18]

The only widely accepted way to eliminate cattle impacts and restore stream health is the exclusion of domestic grazers. When maintained, grazing exclosure fencing protects riparian areas and leads to rapid recovery of vigorous native vegetation,[19] which is critical to maintain streambank stability and provide habitat to riparian and aquatic wildlife.[20] Furthermore, removal of livestock from sensitive ecosystems, such as Southwestern riparian areas, is a critical component of adapting to climate change.[21] Prominent fish scientists have concluded that livestock grazing has been a major factor in eliminating native fishes from portions of their

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[10] Jones, A. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60(2): 155-164.
[11] Trimble, S.W., and A.C. Mendel. 1995. The cow as a geomorphic agent - a critical review. *Geomorphology* 13(1995): 233-253.
[12] Patten, D.T. 1998. Riparian ecosystems of Semi-Arid North America: Diversity and Human Impacts. *Wetlands* 18(4): 498-512.
[13] Gifford, G.F., and R.H. Hawkins. 1978. Hydrologic Impact of Grazing on Infiltration: A Critical Review. *Water Resources Research* 14(2): 305-313.
[14] Obedzinski, R.A., C.G. Shaw, and D.G. Neary. 2001. Declining woody vegetation in riparian ecosystems of the Western United States. *Journal of Applied Forestry*. 16(4): 169-181.
[15] Jones, A. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60(2): 155-164.
[16] Hall, J.A., S. Weinstein, and C.L. McIntyre. 2005. The Impacts of Livestock Grazing in the Sonoran Desert: A Literature Review and Synthesis. The Nature Conservancy in Arizona, Tucson.
[17] Federal Register Vol. 57 No. 225, November 20, 1992, Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Plant "*Salix arizonica*" (Arizona willow), with Critical Habitat.
[18] Horncastle, V.J., C.L. Chambers, and B.G. Dickson. 2019. Grazing and Wildfire Effects on Small Mammals Inhabiting Montane Meadows. Journal of Wildlife Management 83(3): 534-543.
[19] Schulz, T.T., and W.C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. *Journal of Range Management* 43(4): 295-299.
[20] Sarr, D.A. 2002. Riparian Livestock Exclosure Research in the Western United States: A Critique and Some Recommendations. *Environmental Management* 30(4): 516-526.
[21] Beschta, R.L., D.L. Donahue, D.A. DellaSala, J.J. Rhodes, J.R. Karr, M.H. O'Brien, T.L. Fleischner, and C.D. Williams. 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. *Environmental Management* 51: 474-491.

historic ranges[22] and that habitat degradation is most easily reversed by excluding livestock from the riparian area.[23]

As briefed here, the scientific literature documenting the impacts of livestock grazing on ecosystems is extensive and universally shows severe and lasting negative impacts.[24] Livestock removal leads to a rapid regrowth of riparian willow shrub communities[25] and reestablishment of high-quality habitat[26] and avian populations.[27] But full recovery of mature deciduous forests and the diversity that comes with them takes decades of cattle exclusion,[28] meaning monitoring, enforcement, and maintenance of riparian exclosures is crucial. Complete exclusion of livestock animals is urgently needed to protect critical habitat and ensure the recovery and viability of native wildlife.

Since 2017, Center for Biological Diversity field biologists have conducted field assessments of livestock grazing impacts to aquatic and riparian critical habitat in the Southwest, including impacts to the physical and biological features that are essential to the conservation of endangered and threatened species.

This effort is compelled by: (1) the well-known negative impacts that livestock grazing and congregation in aquatic and riparian areas have on ecosystems and imperiled species; (2) the observed increasing presence of livestock in livestock-excluded riparian critical habitats in the Southwest, and the deteriorating condition of those habitats in recent decades; and (3) the failure of federal agencies to systematically monitor the health of riparian ecosystems in the context of habitat requirements of threatened and endangered species, and their failure to systematically detect and remove livestock congregating in riparian critical habitat.

Field assessments characterize livestock grazing impacts to aquatic and riparian critical habitat and document whether livestock are present in critical habitats from which they have been excluded under previous agency decisions. These transect assessments characterize, photograph, and rank damage from livestock grazing to primary constituent elements (PCEs) and physical or biological features (PBFs) of critical habitat. This includes (1) herbaceous vegetation and grasses, (2) multi-year woody stems and regeneration, (3) soil and ground disturbance

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[22] Propst, D.L. 1999. Threatened and endangered fishes of New Mexico. Tech. Rpt. No. 1. New Mexico Department of Game and Fish, Santa Fe, NM at page 15.

[23] Pritchard, V.L. and D.E. Crowley. 2006. Rio Grande Cutthroat Trout (*Oncorhynchus clarkii virginalis*): A Technical Conservation Assessment. Prepared for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project. Department of Fishery and Wildlife Sciences, New Mexico State University, Las Cruces, NM.

[24] Fleischner, T.L. 1994. Ecological costs of livestock grazing in western North America. *Conservation Biology* 8(3): 629-644.

[25] Holland, K.A., W.C. Leininger, and M.J. Trlica. 2005. Grazing History Affects Willow Communities in a Montane Riparian Ecosystem. *Rangeland Ecology and Management* 58: 148-154.

[26] Krueper, D., J. Bart, and T.D. Rich. 2003. Response of vegetation and breeding birds to the removal of cattle on the San Pedro River, Arizona (U.S.A.). *Conservation Biology* 17(2): 607-615.

[27] Poessel, S.A., J.C. Hagar, P.K. Haggerty, and T.E. Katzner. 2020. Removal of cattle grazing correlates with increases in vegetation productivity and in abundance of imperiled breeding birds. *Biological Conservation* 241 (2020): 108378.

[28] Szaro, R.C., and C.P. Pase. 1983. Short-term Changes in a Cottonwood-Ash-Willow Association on a Grazed and an Ungrazed Portion of Little Ash Creek in Central Arizona. *Journal of Range Management* 38(3): 382-384.

intensity, (4) soil/ground cover disturbance extent, (5) intensity of streambank degradation, and (6) extent and pervasiveness of streambank erosion, as well as checking exclosures.

Field assessments have included critical habitat for spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, Jemez Mountains salamander, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, western yellow-billed cuckoo, Mexican spotted owl, New Mexico meadow jumping mouse, jaguar, Arizona eryngo, and Huachuca water umbel.

Each year, survey data are recorded and databased with updated, georeferenced photographs. Overall livestock impacts are summarized and mapped by allotment and critical habitat stream segment (see Appendix A). All data are stored in a GIS database alongside hundreds of corresponding photographs documenting damage for critical habitat stream reach. These data are the most comprehensive, quantifiable, and up-to-date assessments of riparian conditions and cattle occupancy for each area surveyed. Transect field assessments provide the best available scientific information about the condition of aquatic and riparian critical habitats in the Southwest.

Methods

On an annual basis, professional field biologists document livestock impacts to standing waters, riparian vegetation, soils, and streambanks within designated critical habitat and examine protective fencing where applicable. Hundreds of georeferenced photo points are taken along each segment to document evidence of livestock impacts. Using a standardized protocol, surveyors record:

(1) severity of grazing impacts on herbaceous vegetation and grasses;
(2) severity of browsing impacts on streamside woody regeneration;
(3) severity of ground disturbances from trailing, trampling, and wallowing;
(4) extent of ground disturbances from trailing, trampling, and wallowing;
(5) severity of streambank degradation; and
(6) extent of streambank degradation.

Each survey is broken down into ¼-½ mile field-delineated segments of designated critical habitat based on topography, access, and trends in severity of cattle impacts. At each segment endpoint, a condition score is recorded for each of the six impact categories along a range of 0 to 4 based on the severity and extent of the impact. A segment is rated 0 for a particular category if no evidence of impact is observed, 1 if impacts are limited, 2 if impacts are light and scattered, 3 if impacts are moderate and widespread, and 4 if impacts are severe and pervasive. Following field surveys of designated stream reaches, each segment's "overall impact level" (defined as absent, light, moderate or significant) is calculated. To determine overall impact level, condition severity scores for each segment endpoint are collated and weighted (see Appendix A).

Results

Since 2017, the Center has conducted surveys on 178 grazing allotments administered by the FS on eight national forests in Arizona and New Mexico, 35 grazing allotments administered by the BLM in Arizona and Utah, and in critical habitat administered by both agencies on public

lands outside of active grazing allotments where poorly managed and illegal cattle have shown repeated or sustained presence. Cattle impacts assessed result from a combination of authorized, unauthorized, trespass and feral cattle.

Not all allotments were surveyed every year. Therefore, each year represents a snapshot in time and often includes a varying number and combination of allotments (and therefore total critical habitat miles) surveyed. While Center biologists did not revisit each allotment every year over the eight years beginning in 2017, many allotments were surveyed consistently across multiple years.

Most survey mileage represents comprehensive transects of all critical habitat miles within an allotment (or other management unit). Some surveys were 'spot checks' in known problem areas, and thus the percentages of moderate to significant impacts reported do not necessarily represent a comprehensive description of all critical habitat allotment-wide (e.g., the Diamond Bar and Redstone on the Gila National Forest). Conversely, some spot checks represent inspections of grazing exclosures where impacts were found to be absent (Lincoln National Forest, 2024). In instances where survey miles are low with high percentages of 'significant' or 'absent' impact levels, caution should be used when extending results to all critical habitat within an entire allotment. This report is meant to be a broad summary of our region-wide cattle impact survey findings to date.

Results are presented in miles of overall impact level and percentage of overall impact level of the total miles surveyed per year, administrative unit, district, and allotment. We present the annual total percentage of moderately to significantly impacted miles by administrative unit, district and allotment. We also present the cumulative miles of overall impact level recorded and the percentage of those impact levels of the cumulative total of critical habitat miles surveyed to date.

To summarize the total collective effort to date, eight years of critical habitat surveys across 2,435.6 cumulative stream miles show 50 percent of the cumulative total (1,197.8 miles) with significant damage from unauthorized livestock grazing; 13 percent (315.0 miles) with moderate damage; 23 percent (558.1 miles) with light damage, and 14 percent (364.7 miles) with no damage (Table 1). In 2024, assessments across 489.3 critical habitat stream miles show 45 percent of miles (217.9 miles) with significant damage, 13 percent (63.2 miles) with moderate damage, 16 percent (79.5 miles) with light damage, and 26 percent (128.6 miles) with no damage (Table 1).

Table 1. Cattle impacts on designated critical habitat across all FS and BLM public land jurisdictions from 2017-2024.

	Absent		Light		Moderate		Significant		TOTAL
Year	miles	percent	miles	percent	miles	percent	miles	percent	miles
2017	11.78	9.85%	19.07	15.95%	15.27	12.77%	73.46	61.43%	119.59
2018	27.66	30.08%	16.96	18.44%	14.56	15.84%	32.77	35.64%	91.96
2019	60.54	18.68%	105.15	32.44%	39.17	12.08%	119.25	36.79%	324.13
2020	8.49	13.61%	22.11	35.47%	6.42	10.30%	25.32	40.62%	62.34
2021	47.19	11.78%	35.73	8.92%	51.89	12.95%	265.71	66.34%	400.52
2022	63.06	13.07%	121.43	25.17%	54.66	11.33%	243.27	50.43%	482.42
2023	17.37	3.73%	158.05	33.97%	69.82	15.00%	220.09	47.30%	465.33
2024	128.63	26.28%	79.55	16.26%	63.22	12.92%	217.96	44.54%	489.35
TOTAL	**364.72**	**14.05%**	**558.06**	**22.72%**	**315.00**	**13.27%**	**1197.84**	**49.97%**	**2435.63**

To better illustrate annual results and trends over time, we herein break the cumulative totals down by year, administrative unit, district, and individual grazing allotment.

Forest Service, Region 3

Apache-Sitgreaves National Forest (Arizona)

The Apache-Sitgreaves National Forest (ASNF) contains designated critical habitat for ten different threatened and endangered species surveyed by the Center, including spikedace, loach minnow, Gila chub, Apache trout, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, western yellow-billed cuckoo, and New Mexico meadow jumping mouse.

Aggregate data concerning ASNF surveys 2017-2024 is contained in Table 2; Tables 3-10 include data for each year of surveys. From 2017-2024, the Center surveyed 446.44 miles of public lands critical habitat designations on the ASNF for cattle impacts (range 4.3-92.9 miles/year, average 63.8 miles/year, Tables 2-10). Percent of survey miles moderately to significantly impacted by cattle on the Alpine Ranger District ranged from 23% (2018) to 44% (2023), with an average of 31.2 % across all survey years. The worst allotment was Raspberry allotment, which showed 100% of survey miles degraded by cattle in 2018 and 2021-2024.

Percent of survey miles moderately to significantly impacted on the Clifton Ranger District ranged from 0% (2019) to 100% (2020), with an average of 73.5% across all survey years. There are several allotments chronically degraded by cattle on this District, including, but not limited to, the Hickey, Pigeon, and Dark Canyon allotments.

In 2024, Cattle Impact Surveys continued for the seventh consecutive year on ASNF. In 2024, the Center surveyed 92.87 miles on 21 different grazing allotments. Of these allotments, ten had moderate to significant cattle impacts on the majority of designated critical habitat miles surveyed. Critical habitat on the Springerville Ranger District was only surveyed in 2018 and 2024, but in 2024, 20% of critical habitat miles were shown to have moderate to severe cattle impacts with these designations.

Table 2. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Apache-Sitgreaves National Forest, by district and allotment, from 2017-2024.

Allotment	2017	2018	2019	2020	2021	2022	2023	2024
Alpine Ranger District		23%	28%		41%	37%	44%	26%
Alpine GRA			0%					0%
Black River & Black River GRA		0%						0%
Bobcat-Johnson		0%			0%	0%	0%	
Colter Creek & Nutrioso GRA								0%
Cow flat		100%			0%	0%	53%	
Coyote-Whitmer		43%	100%					
Fishhook/Steeple Mesa		0%			26%	6%	31%	
Foote Creek								
Grandfather								18%
Lower Campbell Blue		0%						
Not in allotment								0%
PS								24%
Raspberry		100%			100%	100%	100%	100%
Red Hill		51%			0%	0%	0%	
South Escudilla & Nutrioso Summer								0%
Sprucedale/Reno & Hannagan								2%
Turkey Creek		0%						
Upper Campbell Blue			32%					
West Fork								21%
Williams Valley			0%					24%
Clifton Ranger District	87%	95%	0%	100%	83%	61%	83%	79%
Black Jack			0%					
Dark Canyon		100%			96%	64%	100%	96%
Double Circle		98%			73%	13%	44%	
East Eagle		61%		100%	0%	0%	100%	100%
Hickey	87%	100%			100%	86%	90%	65%
Mud Springs		92%			91%	30%	100%	100%
Pigeon	100%				100%		100%	100%
Pleasant Valley	82%		0%		72%	34%	55%	89%
San Francisco			0%				22%	
Sandrock		99%			76%	58%	100%	64%
Sandrock/Wildbunch							100%	
Strayhorse			0%			0%		
Tule		100%						100%
Wildbunch	100%	100%				100%	85%	100%
Springerville Ranger District		5%						20%
26 Bar								0%
Greer		5%						
Not in allotment								0%
Reservation								0%
Udall								0%
Voigt								45%

Table 3. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2017.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Clifton Ranger District		0.0%	1.91	13.5%	2.86	20.3%	9.34	66.2%	14.11
Hickey		0.0%	1.37	13.3%	1.77	17.1%	7.20	69.6%	10.34
Pigeon		0.0%		0.0%		0.0%	0.57	100.0%	0.57
Pleasant Valley		0.0%	0.53	17.7%	1.09	36.2%	1.39	46.2%	3.01
Wildbunch		0.0%		0.0%		0.0%	0.18	100.0%	0.18

Table 4. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2018.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	25.31	58.2%	7.95	18.3%	1.29	3.0%	8.91	20.5%	43.46
Black River & Black River GRA	7.48	74.5%	2.56	25.5%		0.0%		0.0%	10.04
Bobcat-Johnson	5.83	100.0%		0.0%		0.0%		0.0%	5.83
Cow Flat		0.0%		0.0%		0.0%	0.58	100.0%	0.58
Fishhook/Steeple Mesa	2.44	37.8%	1.26	19.4%	0.75	11.6%	2.01	31.1%	6.46
Foote Creek	4.11	86.6%	0.63	13.4%		0.0%		0.0%	4.74
Lower Campbell Blue	4.01	58.3%	2.86	41.7%		0.0%		0.0%	6.87
Raspberry		0.0%		0.0%	0.54	8.8%	5.63	91.3%	6.17
Red Hill		0.0%	0.65	48.5%		0.0%	0.68	51.3%	1.33
Turkey Creek	1.44	100.0%		0.0%		0.0%		0.0%	1.44
Clifton Ranger District	0.16	0.5%	1.52	4.3%	11.00	31.1%	22.72	64.2%	35.41
Dark Canyon		0.0%		0.0%		0.0%	4.39	100.0%	4.39
Double Circle	0.04	1.6%		0.0%		0.0%	2.68	98.3%	2.73
East Eagle		0.0%	1.33	39.3%	0.85	25.1%	1.21	35.7%	3.39
Hickey		0.0%		0.0%	0.82	100.0%		0.0%	0.82
Mud Springs	0.12	8.2%		0.0%	0.21	14.3%	1.14	77.5%	1.47
Sandrock		0.0%	0.19	1.2%	8.21	50.7%	7.79	48.1%	16.19
Tule		0.0%		0.0%		0.0%	0.91	100.0%	0.91
Wildbunch		0.0%		0.0%	0.91	16.5%	4.60	83.5%	5.51
Springerville Ranger District	2.19	26.8%	5.58	68.3%	0.40	4.9%		0.0%	8.17
Greer	2.19	26.8%	5.58	68.3%	0.40	4.9%		0.0%	8.17

Table 5. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District		0.0%	5.62	72.1%	1.48	19.0%	0.69	8.9%	7.79
Alpine GRA		0.0%	0.40	100.0%		0.0%		0.0%	0.40
Coyote-Whitmer		0.0%		0.0%	0.42	38.2%	0.69	62.1%	1.11
Upper Campbell Blue		0.0%	2.21	67.7%	1.06	32.4%		0.0%	3.27
Williams Valley		0.0%	3.00	100.0%		0.0%		0.0%	3.00
Clifton Ranger District		0.0%	11.39	100.0%		0.0%		0.0%	11.39
Black Jack		0.0%	0.65	100.4%		0.0%		0.0%	0.65
Pleasant Valley		0.0%	0.45	99.8%		0.0%		0.0%	0.45
San Francisco		0.0%	7.99	100.0%		0.0%		0.0%	7.99
Strayhorse		0.0%	2.30	100.0%		0.0%		0.0%	2.30

Table 6. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Clifton Ranger District		0.0%		0.0%	0.32	7.5%	3.97	92.4%	4.29
East Eagle		0.0%		0.0%	0.32	7.5%	3.97	92.4%	4.29

Table 7. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	10.19	55.1%	0.65	3.5%	0.76	4.1%	6.90	37.3%	18.50
Bobcat-Johnson	4.39	100.0%		0.0%		0.0%		0.0%	4.39
Cow Flat	0.99	99.6%		0.0%		0.0%		0.0%	0.99
Fishhook/Steeple Mesa	4.00	71.7%	0.12	2.2%	0.76	13.6%	0.70	12.6%	5.58
Raspberry		0.0%		0.0%		0.0%	6.20	100.0%	6.20
Red Hill	0.82	60.6%	0.53	39.2%		0.0%		0.0%	1.35
Clifton Ranger District	3.28	5.8%	6.40	11.3%	10.97	19.4%	36.04	63.6%	56.69
Dark Canyon		0.0%	0.15	3.6%	0.67	16.1%	3.36	80.3%	4.18
Double Circle	0.67	26.7%		0.0%	0.50	20.0%	1.34	53.5%	2.51
East Eagle	2.03	66.0%	1.04	33.9%		0.0%		0.0%	3.08
Hickey		0.0%		0.0%	0.90	5.6%	15.28	94.4%	16.18
Mud Springs	0.14	9.3%		0.0%	0.88	57.0%	0.52	33.6%	1.55
Pigeon		0.0%		0.0%	0.48	100.0%		0.0%	0.48
Pleasant Valley	0.43	6.7%	1.38	21.2%	0.30	4.6%	4.38	67.4%	6.49
Sandrock		0.0%	3.82	24.3%	4.90	31.2%	7.00	44.5%	15.72
Wildbunch		0.0%		0.0%	2.33	35.8%	4.18	64.2%	6.50

Table 8. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	9.28	53.6%	1.55	8.9%	0.27	1.5%	6.22	35.9%	17.31
Bobcat-Johnson	4.48	100.1%		0.0%		0.0%		0.0%	4.48
Cow Flat	1.12	100.1%		0.0%		0.0%		0.0%	1.12
Fishhook/Steeple Mesa	3.06	72.6%	0.89	21.1%	0.27	6.3%		0.0%	4.21
Raspberry		0.0%		0.0%		0.0%	6.22	100.0%	6.22
Red Hill	0.62	48.3%	0.66	51.4%		0.0%		0.0%	1.28
Clifton Ranger District	5.65	11.0%	14.35	27.9%	10.68	20.8%	20.68	40.3%	51.36
Dark Canyon	0.13	1.9%	2.30	33.7%		0.0%	4.39	64.4%	6.82
Double Circle	1.87	74.4%	0.33	12.9%	0.32	12.6%		0.0%	2.52
East Eagle	1.89	74.2%	0.66	26.0%		0.0%		0.0%	2.55
Hickey		0.0%	1.56	14.1%	3.24	29.3%	6.25	56.5%	11.06
Mud Springs	0.99	69.3%		0.0%	0.22	15.3%	0.22	15.2%	1.43
Pleasant Valley		0.0%	3.35	66.1%	0.77	15.1%	0.95	18.8%	5.07
Sandrock	0.52	3.3%	6.15	38.5%	1.26	7.9%	8.03	50.3%	15.96
Strayhorse	0.25	100.0%		0.0%		0.0%		0.0%	0.25
Wildbunch		0.0%		0.0%	4.88	85.4%	0.84	14.6%	5.72

Table 9. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District		0.0%	10.94	55.8%	1.26	6.5%	7.39	37.7%	19.60
Bobcat-Johnson		0.0%	5.12	100.0%		0.0%		0.0%	5.12
Cow Flat		0.0%	0.53	47.1%		0.0%	0.59	52.7%	1.12
Fishhook/Steeple Mesa		0.0%	3.85	68.9%	1.26	22.6%	0.47	8.5%	5.59
Raspberry		0.0%		0.0%		0.0%	6.33	100.0%	6.33
Red Hill		0.0%	1.44	100.0%		0.0%		0.0%	1.44
Clifton Ranger District	0.86	1.3%	10.60	16.2%	14.73	22.5%	39.31	60.0%	65.49
Dark Canyon		0.0%		0.0%	0.18	9.0%	1.80	91.3%	1.97
Double Circle	0.86	34.2%	0.54	21.7%		0.0%	1.10	44.0%	2.51
East Eagle		0.0%		0.0%	0.49	4.1%	11.45	95.9%	11.94
Hickey		0.0%	1.10	10.3%	0.93	8.7%	8.72	81.1%	10.75
Mud Springs		0.0%		0.0%		0.0%	1.50	100.0%	1.50
Pigeon		0.0%		0.0%		0.0%	0.48	100.0%	0.48
Pleasant Valley		0.0%	1.70	44.8%	1.22	32.0%	0.88	23.2%	3.80
San Francisco		0.0%	6.34	77.5%	1.22	15.0%	0.61	7.5%	8.18
Sandrock		0.0%		0.0%	6.25	35.4%	11.38	64.5%	17.64
Sandrock/Wildbunch		0.0%		0.0%	0.60	100.0%		0.0%	0.60
Wildbunch		0.0%	0.90	14.8%	3.84	62.7%	1.38	22.6%	6.12

Table 10. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	24.63	72.7%	0.49	1.4%	2.09	6.2%	6.66	19.7%	33.87
Alpine GRA	0.76	100.0%		0.0%		0.0%		0.0%	0.76
Black River & Black River GRA	8.59	100.0%		0.0%		0.0%		0.0%	8.59
Colter Creek & Nutrioso GRA	1.52	100.0%		0.0%		0.0%		0.0%	1.52
Grandfather	0.22	81.5%		0.0%		0.0%	0.05	18.0%	0.27
Not in allotment	0.24	100.0%		0.0%		0.0%		0.0%	0.24
PS	4.78	75.9%		0.0%	0.78	12.4%	0.74	11.8%	6.30
Raspberry		0.0%		0.0%		0.0%	5.74	100.0%	5.74
South Escudilla & Nutrioso Summer	1.75	100.0%		0.0%		0.0%		0.0%	1.75
Sprucedale/Reno & Hannagan	2.30	97.6%		0.0%	0.05	2.2%		0.0%	2.36
West Fork	3.22	79.3%		0.0%	0.84	20.8%		0.0%	4.06
Williams Valley	1.24	54.8%	0.49	21.5%	0.41	18.2%	0.12	5.4%	2.27
Clifton Ranger District	0.44	0.9%	9.09	19.6%	9.17	19.8%	27.69	59.7%	46.39
Dark Canyon		0.0%	0.15	4.3%		0.0%	3.35	95.6%	3.50
East Eagle		0.0%		0.0%	6.27	92.0%	0.54	7.9%	6.81
Hickey		0.0%	3.73	34.9%	2.90	27.1%	4.07	38.0%	10.71
Mud Springs		0.0%		0.0%		0.0%	1.21	100.0%	1.21
Pigeon		0.0%		0.0%		0.0%	0.57	100.0%	0.57
Pleasant Valley	0.44	11.4%		0.0%		0.0%	3.40	88.5%	3.84
Sandrock		0.0%	5.21	35.8%		0.0%	9.32	64.2%	14.53
Tule		0.0%		0.0%		0.0%	0.41	100.0%	0.41
Wildbunch		0.0%		0.0%		0.0%	4.82	100.0%	4.82
Springerville Ranger District	6.92	54.9%	3.12	24.8%	1.27	10.1%	1.30	10.3%	12.61
26 Bar	0.39	100.0%		0.0%		0.0%		0.0%	0.39
Not in allotment	5.38	100.0%		0.0%		0.0%		0.0%	5.38
Reservation		0.0%	0.33	100.0%		0.0%		0.0%	0.33
Udall	0.82	100.0%		0.0%		0.0%		0.0%	0.82
Voigt	0.33	5.7%	2.79	49.1%	1.27	22.3%	1.30	22.9%	5.69

Coconino National Forest (Arizona)

Grazing allotments in the Redrock Ranger District of Coconino National Forest were surveyed in 2019 and 2020. Aggregate data concerning Coconino surveys 2019-2020 is contained in Table 11; Tables 12-13 include data for each year of surveys. In 2019, approximately one third of surveyed critical habitat miles were damaged by cattle, with Fossil Creek and Walker Basin allotments having the highest percentages at 81% and 53%, respectively (Table 11). In 2020, the Center resurveyed 1.74 miles of spikedace/loach minnow critical habitat in Fossil Creek allotment and documented only light cattle impacts along this stream reach (Tables 11-13).

Table 11. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Coconino National Forest from 2019-2020.

District/ Allotment	2019	2020
Red Rock Ranger District	32%	0%
13-Mile Rock/ Hackberry/Pivot Rock	32%	
Apache Maid	0%	
Beaver Creek	22%	
Fossil Creek	81%	0%
Walker Basin	53%	
Windmill West (boundary w/ Antelope Hills, Prescott NF)	30%	

Table 12. Critical habitat survey miles impacted by cattle on the Coconino National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Red Rock Ranger District	12.30	37.3%	9.99	30.3%	2.60	7.8%	8.04	24.4%	32.94
Windmill West (boundary w/ Antelope Hills, Prescott NF)	3.05	70.0%		0.0%	0.85	19.5%	0.45	10.4%	4.35
13-Mile Rock/ Hackberry/Pivot Rock	5.01	36.8%	4.24	31.1%		0.0%	4.38	32.1%	13.63
Beaver Creek	1.70	25.0%	3.62	53.2%	0.38	5.6%	1.11	16.3%	6.81
Apache Maid	1.01	37.8%	1.66	62.1%		0.0%		0.0%	2.68
Walker Basin	0.69	46.8%		0.0%	0.79	53.4%		0.0%	1.47
Fossil Creek	0.84	21.0%	0.47	11.7%	0.59	14.8%	2.10	52.5%	4.00

Table 13. Critical habitat survey miles impacted by cattle on the Coconino National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Red Rock Ranger District		0.0%	1.74	100.0%		0.0%		0.0%	1.74
Fossil Creek		0.0%	1.74	100.0%		0.0%		0.0%	1.74

Coronado National Forest (Arizona)

Most of the designated critical habitat on the Coronado National Forest protects threatened yellow-billed cuckoo, but critical habitat also exists for Chiricahua leopard frog, northern Mexican garter snake, Sonora chub and Huachuca water umbel. These designations were surveyed by the Center for cattle impacts starting in 2020. Aggregate data concerning Coronado surveys 2020-2024 is contained in Table 14; Tables 15-19 include data for each year of surveys.

The Center began cattle impact surveys on Coronado National Forest by assessing over 19 miles of Chiricahua leopard frog designations across four Ranger Districts (Tables 14, 15). The Pena Blanca and Cross S allotments of the Nogales Ranger District showed 73% and 100% of leopard frog critical habitat survey miles damaged by cattle, respectively.

Continuing the effort across subsequent survey years, and expanding to yellow-billed cuckoo critical habitat, an average of 76% of the Sierra Vista Ranger District (range 42%-97%) showed moderate to significant cattle impacts to riparian and xeroriparian zones (Tables 14-19). This is the highest average in all FS Region 3 per Ranger District. Most grazing allotments of the Sierra Vista Ranger District show consistent, high percentages of significant cattle impacts repeatedly over time.

Since 2020, an average of 73% of the critical habitat survey miles within the Nogales Ranger District (range 61%-86%) have shown ecological damage from cattle impacts. Cross S and Montana allotments are the worst chronic offenders, but several other allotments within the Nogales Ranger District are close behind in the percentages of critical habitat moderately to significantly impacted by cattle.

Surveys of critical habitat in grazing allotments of the Coronado National Forest commenced in 2024 for the fifth consecutive year (Table 19). Of the 26 allotments surveyed in 2024, 22 allotments (85%) had >50% of survey miles damaged by cattle, 19 allotments (73%) had >75% of survey miles damaged, and 14 of 26 allotments (54%) had 100% of critical habitat miles damaged by cattle.

Table 14. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Coronado National Forest, by allotment, from 2020-2024.

Allotment	2020	2021	2022	2023	2024
Douglas Ranger District	5%			0%	
Cave Creek	0%				
Walnut Canyon	8%			0%	
Nogales Ranger District	61%	76%	81%	62%	86%
Agua Caliente		40%	100%	0%	29%
Apache Springs					100%
Bear Valley	29%	71%	91%	54%	85%
Bear Valley/Not in allotment			100%		
Box Canyon		79%	100%	49%	100%
Cross S	100%		100%	100%	100%
Gardner					100%
Greaterville		100%	100%	26%	56%
Lake		100%	60%	100%	100%
Mc Beth		51%		0%	
Montana		99%	100%	99%	100%
Nogales			100%		
Not in allotment					45%
Oak Tree II			92%	75%	100%
Pena Blanca	73%	0%	31%	30%	69%
Proctor		100%	100%	100%	77%
Rock Corral			0%		
Rosemont		100%	95%	53%	100%
Safford Ranger District	0%				
Deer Creek	0%				
Willow Creek	0%				
Santa Catalina Ranger District			0%		
American Flag			0%		
Sierra Vista Ranger District	42%	84%	75%	97%	81%
Alisos		100%	100%	100%	67%
Chuney		0%	0%	100%	100%
Collins Canyon		1%	75%		
Duquesne		91%	52%	100%	92%
Farrell		98%	100%	86%	82%
Harshaw		82%	58%	100%	19%
Hayfield		100%	100%	101%	100%
Lewis		100%	100%		
Lone Mountain	42%	100%	70%	100%	86%
Lyle Canyon		100%	79%	100%	100%
Mc Farland		100%	100%	100%	0%
Post Canyon		64%	0%	100%	100%
San Rafael		68%	100%	100%	0%
Santa Cruz		100%	100%	81%	100%
Santa Cruz/Alisos					100%
Sawtelle					100%

Table 15. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Douglas Ranger District	3.57	70.4%	1.23	24.2%	0.27	5.4%		0.0%	5.08
Cave Creek	1.60	100.0%		0.0%		0.0%		0.0%	1.60
Walnut Canyon	1.97	56.7%	1.23	35.4%	0.27	7.9%		0.0%	3.48
Nogales Ranger District	0.87	9.1%	2.83	29.6%	1.22	12.7%	4.65	48.5%	9.57
Bear Valley	0.43	10.4%	2.54	60.6%	1.22	29.0%		0.0%	4.19
Cross S		0.0%		0.0%		0.0%	2.67	100.0%	2.67
Pena Blanca	0.44	16.3%	0.30	10.9%		0.0%	1.97	72.7%	2.71
Safford Ranger District	0.55	58.6%	0.39	41.9%		0.0%		0.0%	0.94
Deer Creek	0.46	53.5%	0.39	46.4%		0.0%		0.0%	0.85
Willow Creek	0.10	100.0%		0.0%		0.0%		0.0%	0.10
Sierra Vista Ranger District		0.0%	2.23	57.5%	1.64	42.4%		0.0%	3.87
Lone Mountain		0.0%	2.23	57.5%	1.64	42.4%		0.0%	3.87

Table 16. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Nogales Ranger District	1.42	4.5%	6.19	19.6%	2.22	7.0%	21.82	68.9%	31.65
Agua Caliente	0.50	10.6%	2.35	49.6%		0.0%	1.89	39.9%	4.73
Bear Valley		0.0%	0.74	28.6%	1.18	45.9%	0.66	25.6%	2.58
Box Canyon		0.0%	0.35	21.5%		0.0%	1.28	78.6%	1.63
Greaterville		0.0%		0.0%		0.0%	1.28	100.0%	1.28
Lake		0.0%		0.0%		0.0%	0.71	100.0%	0.71
Mc Beth	0.78	49.3%		0.0%		0.0%	0.81	51.0%	1.59
Montana	0.13	1.4%		0.0%	0.23	2.5%	9.10	96.2%	9.46
Pena Blanca		0.0%	2.76	100.0%		0.0%		0.0%	2.76
Proctor		0.0%		0.0%	0.81	12.4%	5.70	87.6%	6.50
Rosemont		0.0%		0.0%		0.0%	0.40	100.0%	0.40
Sierra Vista Ranger District	6.66	10.6%	3.29	5.3%	10.69	17.1%	41.90	67.0%	62.54
Alisos		0.0%		0.0%	0.87	17.0%	4.26	83.0%	5.13
Chuney	1.89	100.0%		0.0%		0.0%		0.0%	1.89
Collins Canyon	4.39	82.8%	0.86	16.3%		0.0%	0.05	1.0%	5.31
Duquesne		0.0%	0.29	9.0%	1.02	31.4%	1.93	59.7%	3.24
Farrell		0.0%	0.14	1.8%	1.89	23.6%	5.96	74.6%	8.00
Harshaw		0.0%	0.81	18.1%	1.27	28.4%	2.40	53.5%	4.48
Hayfield		0.0%		0.0%	0.50	46.3%	0.58	53.6%	1.08
Lewis		0.0%		0.0%		0.0%	0.70	100.0%	0.70
Lone Mountain		0.0%		0.0%	1.25	8.3%	13.83	91.7%	15.09
Lyle Canyon		0.0%		0.0%	1.56	15.3%	8.63	84.7%	10.19
Mc Farland		0.0%		0.0%		0.0%	0.37	100.0%	0.37
Post Canyon	0.37	36.5%		0.0%		0.0%	0.65	63.8%	1.02
San Rafael		0.0%	1.18	31.9%	2.32	62.8%	0.20	5.3%	3.70
Santa Cruz		0.0%		0.0%		0.0%	2.34	100.0%	2.34

Table 17. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Nogales Ranger District	1.68	3.1%	8.98	16.4%	6.08	11.1%	37.93	69.4%	54.66
Agua Caliente		0.0%		0.0%	0.34	100.0%		0.0%	0.34
Bear Valley		0.0%	0.78	9.3%	0.63	7.5%	6.97	83.2%	8.37
Bear Valley/Not in allotment		0.0%		0.0%	0.37	100.0%		0.0%	0.37
Box Canyon		0.0%		0.0%	0.38	16.6%	1.91	83.5%	2.29
Cross S		0.0%		0.0%	0.17	8.3%	1.83	91.5%	2.00
Greaterville		0.0%		0.0%		0.0%	1.29	100.0%	1.29
Lake	0.23	19.2%	0.24	20.3%		0.0%	0.72	60.4%	1.19
Montana		0.0%		0.0%	3.28	29.4%	7.88	70.6%	11.16
Nogales		0.0%		0.0%	0.22	100.0%		0.0%	0.22
Oak Tree II		0.0%	0.37	8.3%		0.0%	4.09	91.6%	4.46
Pena Blanca		0.0%	7.11	69.4%	0.70	6.8%	2.45	23.9%	10.25
Proctor		0.0%		0.0%		0.0%	0.96	100.0%	0.96
Rock Corral	1.45	100.0%		0.0%		0.0%		0.0%	1.45
Rosemont		0.0%	0.48	4.6%		0.0%	9.83	95.4%	10.31
Santa Catalina Ranger District	1.39	100.0%		0.0%		0.0%		0.0%	1.39
American Flag	1.39	100.0%		0.0%		0.0%		0.0%	1.39
Sierra Vista Ranger District	9.30	13.7%	7.47	11.0%	6.31	9.3%	44.90	66.0%	67.98
Alisos		0.0%		0.0%		0.0%	4.86	100.0%	4.86
Chuney		0.0%	2.00	100.0%		0.0%		0.0%	2.00
Collins Canyon		0.0%	0.12	25.2%		0.0%	0.35	75.3%	0.46
Duquesne	2.26	40.3%	0.44	7.9%		0.0%	2.92	51.9%	5.62
Farrell		0.0%		0.0%		0.0%	8.31	100.0%	8.31
Harshaw	2.32	25.4%	1.55	17.0%	0.97	10.6%	4.29	47.0%	9.13
Hayfield		0.0%		0.0%		0.0%	1.09	100.0%	1.09
Lewis		0.0%		0.0%		0.0%	0.29	100.0%	0.29
Lone Mountain	2.38	14.0%	2.66	15.6%	3.89	22.9%	8.10	47.6%	17.04
Lyle Canyon	1.55	14.4%	0.71	6.5%		0.0%	8.55	79.1%	10.81
Mc Farland		0.0%		0.0%	0.13	13.3%	0.85	86.6%	0.98
Post Canyon	0.79	100.0%		0.0%		0.0%		0.0%	0.79
San Rafael		0.0%		0.0%		0.0%	1.88	100.0%	1.88
Santa Cruz		0.0%		0.0%	1.32	27.9%	3.41	72.2%	4.72

Table 18. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Douglas Ranger District	0.54	26.0%	1.53	74.2%		0.0%		0.0%	2.06
Walnut Canyon	0.54	26.0%	1.53	74.2%		0.0%		0.0%	2.06
Nogales Ranger District	1.26	3.0%	15.01	35.4%	5.44	12.8%	20.71	48.8%	42.42
Agua Caliente		0.0%	2.13	100.0%		0.0%		0.0%	2.13
Bear Valley	0.78	12.6%	2.11	33.9%	1.44	23.2%	1.89	30.3%	6.22
Box Canyon		0.0%	1.16	50.7%		0.0%	1.12	49.2%	2.28
Cross S		0.0%		0.0%	0.18	5.8%	2.91	94.1%	3.09
Greaterville	0.32	10.7%	1.88	63.1%	0.74	24.8%	0.04	1.3%	2.98
Lake		0.0%		0.0%	0.45	33.1%	0.90	66.9%	1.35
Mc Beth		0.0%	0.49	100.0%		0.0%		0.0%	0.49
Montana	0.16	1.4%		0.0%	1.22	11.3%	9.42	87.2%	10.80
Oak Tree II		0.0%	0.64	25.5%	0.40	15.7%	1.49	59.0%	2.53
Pena Blanca		0.0%	6.52	69.8%	0.92	9.9%	1.90	20.4%	9.34
Proctor		0.0%		0.0%		0.0%	1.04	100.0%	1.04
Rosemont		0.0%	0.08	47.6%	0.09	52.7%		0.0%	0.17
Sierra Vista Ranger District		0.0%	1.07	3.5%	4.09	13.1%	25.93	83.4%	31.09
Alisos		0.0%		0.0%	0.81	27.8%	2.10	72.1%	2.92
Chuney		0.0%		0.0%		0.0%	1.82	100.0%	1.82
Duquesne		0.0%		0.0%	0.37	14.9%	2.12	85.1%	2.49
Farrell		0.0%	0.64	14.1%		0.0%	3.90	85.9%	4.54
Harshaw		0.0%		0.0%		0.0%	3.22	100.0%	3.22
Hayfield		0.0%		0.0%	0.73	100.0%		0.0%	0.73
Lone Mountain		0.0%		0.0%		0.0%	3.79	100.0%	3.79
Lyle Canyon		0.0%		0.0%	1.15	19.0%	4.89	81.0%	6.04
Mc Farland		0.0%		0.0%		0.0%	0.70	100.0%	0.70
Post Canyon		0.0%		0.0%		0.0%	1.21	100.0%	1.21
San Rafael		0.0%		0.0%	1.02	76.9%	0.31	23.3%	1.33
Santa Cruz		0.0%	0.43	18.8%		0.0%	1.86	81.0%	2.30

Table 19. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Nogales Ranger District	1.04	1.6%	8.35	12.9%	12.63	19.6%	42.56	65.9%	64.57
Agua Caliente		0.0%	2.26	70.8%	0.93	29.0%		0.0%	3.19
Apache Springs		0.0%		0.0%	1.34	13.2%	8.80	86.8%	10.14
Bear Valley	1.04	14.5%		0.0%	3.71	52.0%	2.38	33.4%	7.14
Box Canyon		0.0%		0.0%		0.0%	1.69	100.0%	1.69
Cross S		0.0%		0.0%		0.0%	2.85	100.0%	2.85
Gardner		0.0%		0.0%	1.73	57.8%	1.26	42.0%	3.00
Greaterville		0.0%	1.29	44.3%	0.66	22.7%	0.96	32.9%	2.92
Lake		0.0%		0.0%		0.0%	0.39	100.0%	0.39
Montana		0.0%		0.0%		0.0%	8.73	100.0%	8.73
Not in allotment		0.0%	2.26	55.6%	1.81	44.5%		0.0%	4.07
Oak Tree II		0.0%		0.0%		0.0%	2.44	100.0%	2.44
Pena Blanca		0.0%	1.89	31.3%		0.0%	4.13	68.6%	6.02
Proctor		0.0%	0.64	22.5%	2.22	77.5%		0.0%	2.86
Rosemont		0.0%		0.0%	0.23	2.5%	8.91	97.5%	9.14
Sierra Vista Ranger District	3.64	6.1%	7.69	13.0%	8.14	13.7%	39.88	67.2%	59.35
Alisos	0.24	4.3%	1.60	29.1%	0.59	10.8%	3.06	55.8%	5.49
Chuney		0.0%		0.0%		0.0%	1.98	100.0%	1.98
Duquesne		0.0%	0.24	8.6%	1.79	63.1%	0.81	28.5%	2.83
Farrell	0.84	12.7%	0.32	4.9%	1.81	27.4%	3.65	55.1%	6.63
Harshaw	0.67	15.8%	2.77	65.6%		0.0%	0.78	18.5%	4.22
Hayfield		0.0%		0.0%	1.07	100.0%		0.0%	1.07
Lone Mountain		0.0%	2.35	13.8%	1.97	11.6%	12.64	74.6%	16.96
Lyle Canyon		0.0%		0.0%		0.0%	9.67	100.0%	9.67
Mc Farland		0.0%	0.41	100.0%		0.0%		0.0%	0.41
Post Canyon		0.0%		0.0%		0.0%	1.47	100.0%	1.47
San Rafael	1.89	100.0%		0.0%		0.0%		0.0%	1.89
Santa Cruz		0.0%		0.0%		0.0%	0.37	100.0%	0.37
Santa Cruz/Alisos		0.0%		0.0%		0.0%	3.55	100.0%	3.55
Sawtelle		0.0%		0.0%	0.91	32.6%	1.88	67.3%	2.80

Gila National Forest (New Mexico)

The Gila National Forest allotments surveyed by the Center contain designated critical habitat for eight different threatened and endangered species, including spikedace, loach minnow, Gila chub, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, and yellow-billed cuckoo.

From 2017-2024, the Center surveyed 798.94 miles of public lands critical habitat designations in the Gila National Forest for cattle impacts (range 4.9-149.7 miles/year, average 99.8 miles/year) (Tables 20-28). Aggregate data concerning Gila surveys 2017-2024 is contained in Table 20; Tables 21-28 include data for each year of surveys.

Across all survey years, percent of survey miles moderately to significantly impacted by cattle on the Glenwood Ranger District ranged from 23% (2023) to 85% (2021), with an average of 55% across seven survey years.

Percent of survey miles moderately to significantly impacted by cattle on the Quemado Ranger District ranged from 28% (2017) to 100% (2018) with an average of 64% across survey years. Both Laney and Luna allotments had 100% of survey miles moderately to significantly impacted by cattle, documented in multiple years.

Reserve Ranger District has been surveyed for eight consecutive years, from 2017-2024, and has the highest average percentage of critical habitat miles moderately to significantly impacted by cattle across the Gila National Forest (73%, ranging from 100% in 2018 to 37% in 2023). Reserve is among the worst Ranger Districts in Region 3 in terms of riparian habitat damage due to livestock. Numerous allotments, including Deep Canyon and Frisco Plaza, demonstrate chronic, high levels of cattle-damaged critical habitat. High levels of cattle disturbance have also been documented outside of allotment boundaries in the Reserve Ranger District.

The percentage of critical habitat survey miles damaged on the Silver City Ranger District average nearly 60% over the six surveys years, but in 2024 only 4% showed moderate to significant damage.

Likewise, the Wilderness Ranger District ranged from 5% (2020) to 85% (2017) moderately to significantly damaged by cattle (average 34%) but has shown 12% and 11% over the past two years, respectively. Allotments such as Jordan Mesa, XSX, and Redstone have shown recent improvements.

Table 20. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Gila National Forest, by allotment, from 2017-2024.

Allotment	2017	2018	2019	2020	2021	2022	2023	2024
Black Range Ranger District			17%		57%	0%	0%	0%
Corduroy			100%		57%		0%	0%
South Fork			0%			0%		
Glenwood Ranger District	71%	32%	77%		85%	52%	23%	42%
Alma	100%	100%	100%		100%	100%	37%	100%
Cedar Breaks	0%		0%					
Citizen & Roberts Park	86%		100%		100%	0%	0%	0%
Devils Park	100%	0%	100%		100%	87%	100%	100%
Dry Creek	19%		0%			66%	0%	
Harden Cienega			59%		61%	59%	35%	83%
Harve Gulch & Bighorn	86%		88%		100%	0%	0%	0%
Kelly	75%	29%	100%		90%	54%	9%	18%
Not in allotment (btw Pleasanton & Potholes)							19%	
Not in allotment (btw Harden Cienega & Pleasanton)							15%	
Pleasanton	0%							
Pueblo Creek			0%		100%			
Tennessee					100%	65%	66%	0%
Whiterocks			30%					
Quemado Ranger District	28%	100%	77%		67%	91%	41%	47%
Laney			69%		100%	100%	58%	56%
Luna	28%	100%	100%		47%	91%	11%	21%
West Apache Creek			0%					
Reserve Ranger District	81%	100%	78%	79%	91%	71%	37%	43%
Alexander	44%	100%	100%		0%	36%	4%	69%
Cienega (Black Bob)	100%	100%	100%		100%	70%	14%	13%
Corner Mountain	53%		36%		100%	65%	0%	0%
Deep Canyon	62%	100%	100%		100%	79%	62%	86%
Eagle Peak				78%		90%	0%	0%
Frisco Plaza	100%	100%	100%		100%	90%	98%	89%
Govina & West Sand Flat	67%		100%		77%	20%	0%	18%
Lower Plaza	100%		100%			100%	0%	0%
McCarty				100%				0%
Negrito/Yeguas	100%	100%	65%		88%	38%	36%	35%
Not in allotment (btw Negrito/Yeguas boundary)							36%	100%
Not in allotment (outside of Alexander)							100%	100%
T Bar			43%					
Silver City Ranger District	82%		54%		100%	44%	20%	6%
Bear Creek			62%					
Brock Canyon*	100%		51%			48%	4%	0%
Gila River	72%		57%		100%	100%	50%	20%
Mogollon Creek	0%							
Not in allotment (Gila River Wilderness)**	100%						0%	0%
Watson Mountain***	0%					0%		0%
Wilderness Ranger District	83%		51%	5%	77%	43%	34%	6%
Diamond Bar			3%	0%	73%	10%	100%	100%
Jordan Mesa	100%		87%	17%	76%	0%	0%	0%
Redstone****	100%		98%			95%	57%	0%
Sapillo	0%		0%	0%				
Taylor Creek	87%		100%		100%	26%	29%	42%
XSX	0%		38%		76%	27%	0%	0%

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District. ***Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ****Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 21. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2017.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Glenwood Ranger District	2.75	10.7%	4.59	17.8%	3.73	14.5%	14.65	57.0%	25.72
Alma		0.0%		0.0%		0.0%	2.69	100.0%	2.69
Cedar Breaks	0.54	100.0%		0.0%		0.0%		0.0%	0.54
Citizen & Roberts Park		0.0%	0.32	13.6%	0.38	16.0%	1.65	70.3%	2.35
Devils Park		0.0%		0.0%		0.0%	3.09	100.0%	3.09
Dry Creek	1.39	30.7%	2.26	50.0%		0.0%	0.87	19.3%	4.51
Harve Gulch & Bighorn	0.59	13.6%		0.0%	2.23	51.7%	1.49	34.6%	4.32
Kelly		0.0%	2.01	25.2%	1.12	14.1%	4.85	60.8%	7.98
Pleasanton	0.23	100.0%		0.0%		0.0%		0.0%	0.23
Quemado Ranger District	5.76	42.5%	3.92	28.9%	0.82	6.1%	3.03	22.4%	13.54
Luna	5.76	42.5%	3.92	28.9%	0.82	6.1%	3.03	22.4%	13.54
Reserve Ranger District	0.76	2.9%	4.26	16.2%	2.44	9.3%	18.84	71.6%	26.30
Alexander		0.0%	1.33	55.6%		0.0%	1.06	44.3%	2.39
Cienega (Black Bob)		0.0%		0.0%		0.0%	3.54	100.0%	3.54
Corner Mountain		0.0%	2.19	47.3%	2.44	52.6%		0.0%	4.63
Deep Canyon	0.50	15.3%	0.74	22.8%		0.0%	2.01	62.0%	3.24
Frisco Plaza		0.0%		0.0%		0.0%	7.05	100.0%	7.05
Govina & West Sand Flat	0.27	33.7%		0.0%		0.0%	0.53	66.5%	0.79
Lower Plaza		0.0%		0.0%		0.0%	0.33	100.0%	0.33
Negrito/Yeguas		0.0%		0.0%		0.0%	4.32	100.0%	4.32
Silver City Ranger District	1.11	9.8%	0.89	7.8%	0.80	7.0%	8.57	75.4%	11.37
Brock Canyon*		0.0%		0.0%		0.0%	2.62	100.0%	2.62
Gila River		0.0%	0.89	12.6%	0.80	11.2%	4.29	60.5%	5.98
Mogollon Creek	0.28	100.0%		0.0%		0.0%		0.0%	0.28
Not in allotment (Gila River Wilderness)**		0.0%		0.0%		0.0%	1.66	100.0%	1.66
Watson Mountain***	0.83	100.0%		0.0%		0.0%		0.0%	0.83
Wilderness Ranger District	1.41	4.9%	3.51	12.3%	4.62	16.2%	19.03	66.6%	28.56
Jordan Mesa		0.0%		0.0%	3.70	58.9%	2.58	41.1%	6.27
Redstone****		0.0%		0.0%		0.0%	12.98	100.0%	12.98
Sapillo	0.95	43.3%	1.25	56.6%		0.0%		0.0%	2.20
Taylor Creek		0.0%	0.65	13.0%	0.92	18.2%	3.47	68.8%	5.05
XSX	0.45	22.0%	1.61	77.9%		0.0%		0.0%	2.07

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District. ***Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ****Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 22. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2018.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Glenwood Ranger District		0.0%	1.91	67.9%		0.0%	0.90	32.1%	2.81
Alma		0.0%		0.0%		0.0%	0.29	100.0%	0.29
Devils Park		0.0%	0.38	100.0%		0.0%		0.0%	0.38
Kelly		0.0%	1.53	71.3%		0.0%	0.61	28.7%	2.14
Quemado Ranger District		0.0%		0.0%	0.32	100.0%		0.0%	0.32
Luna		0.0%		0.0%	0.32	100.0%		0.0%	0.32
Reserve Ranger District		0.0%		0.0%	1.55	86.4%	0.24	13.7%	1.79
Alexander		0.0%		0.0%	0.44	100.0%		0.0%	0.44
Cienega (Black Bob)		0.0%		0.0%	0.41	100.0%		0.0%	0.41
Deep Canyon		0.0%		0.0%		0.0%	0.24	100.0%	0.24
Frisco Plaza		0.0%		0.0%	0.37	100.0%		0.0%	0.37
Negrito/Yeguas		0.0%		0.0%	0.33	100.0%		0.0%	0.33

Table 23. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	3.40	83.2%		0.0%	0.69	16.9%	4.09
Corduroy		0.0%		0.0%		0.0%	0.69	100.0%	0.69
South Fork		0.0%	3.40	100.0%		0.0%		0.0%	3.40
Glenwood Ranger District	3.99	13.1%	2.94	9.7%	5.47	18.0%	18.00	59.2%	30.41
Alma		0.0%		0.0%		0.0%	1.80	100.0%	1.80
Cedar Breaks	0.37	48.7%	0.39	51.2%		0.0%		0.0%	0.76
Citizen & Roberts Park		0.0%		0.0%		0.0%	2.03	100.0%	2.03
Devils Park		0.0%		0.0%		0.0%	2.98	99.9%	2.98
Dry Creek	0.60	35.3%	1.10	64.8%		0.0%		0.0%	1.69
Harden Cienega	1.13	27.4%	0.57	13.8%	1.36	32.9%	1.08	26.0%	4.14
Harve Gulch & Bighorn	0.56	11.6%		0.0%		0.0%	4.27	88.5%	4.82
Kelly		0.0%		0.0%	4.11	41.7%	5.75	58.3%	9.86
Pueblo Creek	1.10	55.2%	0.89	44.6%		0.0%		0.0%	1.99
Whiterocks	0.23	69.1%		0.0%		0.0%	0.10	30.4%	0.34
Quemado Ranger District	2.67	20.6%	0.37	2.8%	5.07	39.0%	4.51	35.7%	12.63
Laney	1.97	26.5%	0.37	5.0%	3.44	46.3%	1.65	22.2%	7.43
Luna		0.0%		0.0%	1.63	36.1%	2.87	63.8%	4.50
West Apache Creek	0.70	100.0%		0.0%		0.0%		0.0%	0.70
Reserve Ranger District	0.77	3.2%	4.47	18.7%	3.28	13.7%	15.38	64.4%	23.89
Alexander		0.0%		0.0%	0.74	100.0%		0.0%	0.74
Cienega (Black Bob)		0.0%		0.0%	0.39	10.9%	3.19	89.0%	3.58
Corner Mountain	0.77	22.3%	1.45	42.0%	0.54	15.7%	0.70	20.1%	3.46
Deep Canyon		0.0%		0.0%		0.0%	1.68	100.0%	1.68
Frisco Plaza		0.0%		0.0%		0.0%	7.50	100.0%	7.50
Govina & West Sand Flat		0.0%		0.0%	0.32	46.4%	0.37	53.6%	0.69
Lower Plaza		0.0%		0.0%	0.26	79.0%	0.07	21.0%	0.33
Negrito/Yeguas		0.0%	0.92	35.0%		0.0%	1.72	65.1%	2.64
T Bar		0.0%	2.09	57.6%	1.02	27.9%	0.53	14.6%	3.64
Silver City Ranger District		0.0%	8.91	46.6%	1.68	8.8%	8.55	44.7%	19.14
Bear Creek		0.0%	0.33	37.9%		0.0%	0.54	61.7%	0.88
Brock Canyon*		0.0%	5.71	49.4%	0.77	6.7%	5.07	43.8%	11.56
Gila River		0.0%	2.86	42.6%	0.91	13.6%	2.94	43.8%	6.71
Wilderness Ranger District	3.36	6.7%	21.18	42.0%	8.35	16.5%	17.59	34.8%	50.48
Diamond Bar	2.40	12.4%	16.36	84.5%		0.0%	0.61	3.2%	19.37
Jordan Mesa		0.0%	0.81	12.5%	5.68	87.5%		0.0%	6.49
Redstone**	0.23	1.5%		0.0%		0.0%	14.60	98.5%	14.83
Sapillo		0.0%	0.44	100.0%		0.0%		0.0%	0.44
Taylor Creek		0.0%		0.0%		0.0%	2.38	100.0%	2.38
XSX	0.73	10.5%	3.56	51.1%	2.67	38.4%		0.0%	6.97

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 24. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Reserve Ranger District		0.0%	1.33	20.6%		0.0%	5.11	79.4%	6.44
Eagle Peak		0.0%	1.33	21.6%		0.0%	4.82	78.4%	6.14
McCarty		0.0%		0.0%		0.0%	0.30	100.0%	0.30
Wilderness Ranger District	0.91	10.3%	7.48	84.8%	0.43	4.9%		0.0%	8.82
Diamond Bar		0.0%	4.96	100.0%		0.0%		0.0%	4.96
Jordan Mesa		0.0%	2.12	82.9%	0.43	17.0%		0.0%	2.56
Sapillo	0.91	69.2%	0.40	30.8%		0.0%		0.0%	1.31

Table 25. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	0.34	43.1%		0.0%	0.45	57.1%	0.79
Corduroy		0.0%	0.34	43.1%		0.0%	0.45	57.1%	0.79
Glenwood Ranger District	5.69	14.6%		0.0%	1.93	4.9%	31.35	80.4%	38.97
Alma		0.0%		0.0%		0.0%	1.86	100.0%	1.86
Citizen & Roberts Park		0.0%		0.0%		0.0%	2.36	100.0%	2.36
Devils Park		0.0%		0.0%		0.0%	3.53	100.0%	3.53
Harden Cienega	4.62	38.7%		0.0%	1.44	12.0%	5.90	49.3%	11.96
Harve Gulch & Bighorn		0.0%		0.0%		0.0%	4.11	100.0%	4.11
Kelly	1.07	10.3%		0.0%		0.0%	9.32	89.7%	10.39
Pueblo Creek		0.0%		0.0%	0.49	15.2%	2.73	84.7%	3.22
Tennessee		0.0%		0.0%		0.0%	1.55	100.0%	1.55
Quemado Ranger District	3.85	19.9%	2.60	13.5%	2.20	11.4%	10.70	55.3%	19.35
Laney		0.0%		0.0%		0.0%	7.29	100.0%	7.29
Luna	3.85	31.9%	2.60	21.6%	2.20	18.3%	3.41	28.3%	12.06
Reserve Ranger District	0.18	0.5%	2.84	8.6%	3.63	11.0%	26.25	79.8%	32.89
Alexander	0.18	16.7%	0.90	83.0%		0.0%		0.0%	1.08
Cienega (Black Bob)		0.0%		0.0%		0.0%	3.54	100.0%	3.54
Corner Mountain		0.0%		0.0%		0.0%	2.51	100.0%	2.51
Deep Canyon		0.0%		0.0%	1.27	48.3%	1.36	51.8%	2.62
Frisco Plaza		0.0%		0.0%		0.0%	7.46	100.0%	7.46
Govina & West Sand Flat		0.0%	0.21	23.3%	0.44	47.4%	0.27	29.2%	0.92
Negrito/Yeguas		0.0%	1.73	11.7%	1.93	13.0%	11.10	75.2%	14.76
Silver City Ranger District		0.0%		0.0%	0.75	9.5%	7.21	90.5%	7.96
Gila River		0.0%		0.0%	0.75	9.5%	7.21	90.5%	7.96
Wilderness Ranger District		0.0%	3.63	23.1%	5.84	37.1%	6.24	39.7%	15.72
Diamond Bar		0.0%	1.39	26.9%	1.47	28.4%	2.31	44.7%	5.18
Jordan Mesa		0.0%	1.65	24.5%	2.52	37.4%	2.57	38.2%	6.74
Taylor Creek		0.0%		0.0%		0.0%	1.36	100.0%	1.36
XSX		0.0%	0.59	24.2%	1.85	75.8%		0.0%	2.44

Table 26. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	2.25	100.0%		0.0%		0.0%	2.25
South Fork		0.0%	2.25	100.0%		0.0%		0.0%	2.25
Glenwood Ranger District	0.55	1.6%	16.39	46.9%	5.51	15.8%	12.52	35.8%	34.98
Alma		0.0%		0.0%		0.0%	1.77	100.0%	1.77
Citizen & Roberts Park		0.0%	2.35	100.0%		0.0%		0.0%	2.35
Devils Park		0.0%	0.39	12.7%	0.77	24.9%	1.92	62.2%	3.08
Dry Creek		0.0%	1.01	33.4%	1.60	53.1%	0.40	13.3%	3.01
Harden Cienega		0.0%	4.09	41.4%	0.26	2.7%	5.51	55.9%	9.87
Harve Gulch & Bighorn	0.55	12.5%	3.84	87.4%		0.0%		0.0%	4.39
Kelly		0.0%	4.30	46.1%	2.88	30.8%	2.15	23.0%	9.34
Tennessee		0.0%	0.42	35.0%		0.0%	0.77	64.6%	1.19
Quemado Ranger District		0.0%	1.16	9.0%	2.35	18.3%	9.34	72.7%	12.85
Laney		0.0%		0.0%	0.46	6.1%	7.00	93.8%	7.46
Luna		0.0%	0.42	9.4%	1.89	42.2%	2.16	48.3%	4.48
Reserve Ranger District		0.0%	9.19	29.0%	3.22	10.1%	19.33	60.9%	31.74
Alexander		0.0%	1.37	64.5%		0.0%	0.75	35.6%	2.12
Cienega (Black Bob)		0.0%	1.05	30.5%	1.17	34.0%	1.22	35.6%	3.44
Corner Mountain		0.0%	1.02	35.0%	1.07	36.7%	0.83	28.4%	2.92
Deep Canyon		0.0%	0.69	21.3%	0.27	8.3%	2.29	70.3%	3.26
Eagle Peak		0.0%	0.62	10.1%	0.71	11.5%	4.81	78.4%	6.14
Frisco Plaza		0.0%	0.73	9.7%		0.0%	6.82	90.3%	7.56
Govina & West Sand Flat		0.0%	0.73	80.7%		0.0%	0.18	19.9%	0.91
Lower Plaza		0.0%		0.0%		0.0%	0.34	100.0%	0.34
Negrito/Yeguas		0.0%	3.71	62.1%		0.0%	2.26	37.9%	5.97
Silver City Ranger District	1.71	12.0%	6.23	43.9%	2.50	17.6%	3.76	26.5%	14.19
Brock Canyon*	0.33	2.6%	6.23	49.5%	2.27	18.0%	3.76	29.9%	12.58
Gila River		0.0%		0.0%	0.23	100.0%		0.0%	0.23
Watson Mountain**	1.38	100.0%		0.0%		0.0%		0.0%	1.38
Wilderness Ranger District		0.0%	22.96	57.2%	1.95	4.8%	15.27	38.0%	40.17
Diamond Bar		0.0%	4.41	90.5%		0.0%	0.47	9.6%	4.87
Jordan Mesa		0.0%	7.41	100.0%		0.0%		0.0%	7.41
Redstone***		0.0%	0.72	5.3%	0.59	4.3%	12.30	90.4%	13.61
Taylor Creek		0.0%	3.22	74.0%	0.58	13.4%	0.55	12.7%	4.35
XSX		0.0%	7.20	72.6%	0.78	7.8%	1.95	19.6%	9.92

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ***Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 27. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	1.49	100.0%		0.0%		0.0%	1.49
Corduroy		0.0%	1.49	100.0%		0.0%		0.0%	1.49
Glenwood Ranger District		0.0%	37.08	77.4%	4.92	10.3%	5.89	12.3%	47.89
Alma		0.0%	1.29	62.7%		0.0%	0.76	37.2%	2.05
Citizen & Roberts Park		0.0%	2.33	100.0%		0.0%		0.0%	2.33
Devils Park		0.0%		0.0%	2.38	86.7%	0.37	13.5%	2.75
Dry Creek		0.0%	2.18	100.0%		0.0%		0.0%	2.18
Harden Cienega		0.0%	5.75	64.9%	0.59	6.6%	2.53	28.5%	8.87
Harve Gulch & Bighorn		0.0%	4.35	100.0%		0.0%		0.0%	4.35
Kelly		0.0%	8.46	90.6%	0.17	1.8%	0.71	7.6%	9.34
Not in allotment (btw Pleasanton/ Potholes)		0.0%	6.59	81.2%		0.0%	1.52	18.8%	8.11
Not in allotment (btw Harden Cienega/ Pleasanton)		0.0%	5.72	84.9%	1.02	15.1%		0.0%	6.74
Tennessee		0.0%	0.40	34.5%	0.77	65.7%		0.0%	1.17
Quemado Ranger District		0.0%	6.75	58.0%	1.12	9.6%	3.77	32.4%	11.64
Laney		0.0%	3.25	42.2%	0.67	8.8%	3.77	49.0%	7.69
Luna		0.0%	3.50	88.7%	0.45	11.3%		0.0%	3.95
Reserve Ranger District	0.38	1.2%	19.48	61.8%	1.30	4.1%	10.35	32.8%	31.51
Alexander		0.0%	1.93	95.8%	0.08	4.1%		0.0%	2.02
Cienega (Black Bob)	0.38	11.2%	2.56	74.5%		0.0%	0.49	14.3%	3.43
Corner Mountain		0.0%	2.91	100.0%		0.0%		0.0%	2.91
Deep Canyon		0.0%	0.71	38.5%		0.0%	1.13	61.5%	1.84
Eagle Peak		0.0%	6.32	100.0%		0.0%		0.0%	6.32
Frisco Plaza		0.0%	0.15	2.0%	0.81	10.8%	6.54	87.3%	7.50
Govina & West Sand Flat		0.0%	0.91	100.0%		0.0%		0.0%	0.91
Lower Plaza		0.0%	0.32	100.0%		0.0%		0.0%	0.32
Negrito/Yeguas		0.0%	3.93	64.3%		0.0%	2.18	35.7%	6.11
Not in allotment (outside of Alexander)		0.0%		0.0%	0.41	100.0%		0.0%	0.41
Silver City Ranger District	0.33	1.4%	18.04	79.0%	1.81	7.9%	2.66	11.7%	22.83
Brock Canyon*		0.0%	11.48	96.3%	0.45	3.7%		0.0%	11.92
Gila River		0.0%	4.00	49.9%	1.36	16.9%	2.66	33.1%	8.02
Not in allotment (Gila River Wilderness)**	0.33	11.5%	2.57	88.4%		0.0%		0.0%	2.90
Wilderness Ranger District	2.28	6.7%	20.07	58.9%	10.33	30.3%	1.36	4.0%	34.05
Diamond Bar		0.0%		0.0%		0.0%	0.90	100.0%	0.90
Jordan Mesa		0.0%	4.00	100.0%		0.0%		0.0%	4.00
Redstone***	2.19	12.7%	5.30	30.7%	9.75	56.5%		0.0%	17.25
Taylor Creek		0.0%	2.55	71.0%	0.58	16.2%	0.46	12.9%	3.59
XSX	0.09	1.1%	8.22	98.9%		0.0%		0.0%	8.31

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District.
***Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 28. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District	1.03	100.0%		0.0%		0.0%		0.0%	1.03
Corduroy	1.03	100.0%		0.0%		0.0%		0.0%	1.03
Glenwood Ranger District	7.74	27.8%	8.45	30.4%	4.06	14.6%	7.59	27.3%	27.84
Alma		0.0%		0.0%		0.0%	1.62	100.0%	1.62
Citizen & Roberts Park	2.18	100.0%		0.0%		0.0%		0.0%	2.18
Devils Park		0.0%		0.0%	2.48	80.1%	0.61	19.7%	3.09
Harden Cienega	1.07	17.0%		0.0%	0.82	12.9%	4.43	70.1%	6.31
Harve Gulch & Bighorn	4.48	100.0%		0.0%		0.0%		0.0%	4.48
Kelly		0.0%	7.69	81.8%	0.77	8.2%	0.93	9.9%	9.40
Tennessee		0.0%	0.76	100.0%		0.0%		0.0%	0.76
Quemado Ranger District	2.23	20.8%	3.50	32.6%	0.62	5.8%	4.37	40.8%	10.72
Laney		0.0%	3.50	44.3%	0.62	7.8%	3.78	47.9%	7.89
Luna	2.23	79.0%		0.0%		0.0%	0.59	21.0%	2.83
Reserve Ranger District	10.22	30.9%	8.69	26.3%	7.45	22.5%	6.69	20.3%	33.05
Alexander		0.0%	0.62	31.1%	0.07	3.4%	1.30	65.5%	1.98
Cienega (Black Bob)	0.40	11.6%	2.58	75.0%	0.16	4.7%	0.30	8.7%	3.44
Corner Mountain	2.16	75.5%	0.70	24.3%		0.0%		0.0%	2.86
Deep Canyon		0.0%	0.47	14.4%	0.26	8.1%	2.51	77.5%	3.24
Eagle Peak	2.76	46.0%	3.30	54.4%		0.0%		0.0%	6.06
Frisco Plaza	0.23	3.0%	0.58	7.6%	6.82	89.3%		0.0%	7.64
Govina & West Sand Flat	0.40	52.6%	0.22	28.9%	0.14	18.4%		0.0%	0.76
Lower Plaza	0.38	100.0%		0.0%		0.0%		0.0%	0.38
McCarty		0.0%	0.23	100.0%		0.0%		0.0%	0.23
Negrito/Yeguas	3.89	64.6%		0.0%		0.0%	2.13	35.4%	6.02
Not in allotment (outside of Alexander)		0.0%		0.0%		0.0%	0.45	100.0%	0.45
Silver City Ranger District	21.27	78.6%	4.22	15.6%		0.0%	1.56	5.8%	27.05
Brock Canyon*	11.79	100.0%		0.0%		0.0%		0.0%	11.79
Gila River	2.21	27.7%	4.22	52.8%		0.0%	1.56	19.5%	7.98
Not in allotment (Gila River Wilderness)**	5.89	100.0%		0.0%		0.0%		0.0%	5.89
Watson Mountain***	1.38	100.0%		0.0%		0.0%		0.0%	1.38
Wilderness Ranger District	28.12	90.5%	1.05	3.4%		0.0%	1.90	6.1%	31.06
Diamond Bar		0.0%		0.0%		0.0%	0.26	100.0%	0.26
Jordan Mesa	4.84	82.2%	1.05	17.8%		0.0%		0.0%	5.89
Redstone****	13.19	100.0%		0.0%		0.0%		0.0%	13.19
Taylor Creek	2.30	58.3%		0.0%		0.0%	1.64	41.6%	3.94
XSX	7.78	100.0%		0.0%		0.0%		0.0%	7.78

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District. ***Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ****Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Lincoln National Forest (New Mexico)

Designated critical habitat on four grazing allotments in the Lincoln National Forest were surveyed in 2024. This first year of formal surveys showed no critical habitat miles moderately to significantly impacted by cattle, and most miles had no cattle impact at all (Tables 29-30). Though data are limited, the Lincoln National Forest is an outlier in Region 3 in that cattle impacts are a limited occurrence in the miles of critical habitat designations surveyed so far.

Table 29. Percent Of Critical Habitat Survey Miles Moderately To Significantly Impacted By Cattle On The Lincoln National Forest, By Allotment, in 2024.

District/ Allotment	2024
Sacramento Ranger District	0%
Agua Chiquita - Trail	0%
Bounds	0%
James Canyon	0%
Not in allotment	0%
Sacramento	0%

Table 30. Critical Habitat Survey Miles Impacted By Cattle On The Lincoln National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Sacramento Ranger District	6.77	71.6%	2.68	28.4%		0.0%		0.0%	9.45
Agua Chiquita - Trail	2.31	48.2%	2.49	51.8%		0.0%		0.0%	4.80
Bounds	0.28	100.0%		0.0%		0.0%		0.0%	0.28
James Canyon	0.37	100.0%		0.0%		0.0%		0.0%	0.37
Not in allotment	0.47	100.0%		0.0%		0.0%		0.0%	0.47
Sacramento	3.34	94.6%	0.19	5.4%		0.0%		0.0%	3.53

Prescott National Forest

Grazing allotments on Prescott National Forest were surveyed in 2019 and 2022. Surveys in 2019 focused on a group of allotments situated along the Verde River and expanded to another group of allotments north of Agua Fria National Monument in 2022. Although there are no cattle authorized in the riparian corridor of the Verde River, allotments showed varying degrees of cattle damage in 2019, the worst being Walnut Creek and Horseshoe allotments at 100% and 91%, respectively (Table 31-32). Following a 2021 court settlement to remove unauthorized cattle from along the Verde River, overall conditions improved but problem areas persisted. For example, Perkinsville allotment still showed 56% of critical habitat miles moderately to significantly damaged by cattle post-settlement (Tables 31, 33). Moderate to significant damage defined 35% of critical habitat survey miles in the Verde Ranger District in 2022, which include designations for Gila chub and yellow-billed cuckoo along the Agua Fria River and its tributaries and which flow south into Agua Fria National Monument described further below.

Table 31. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Prescott National Forest, by allotment, in 2019 and 2022.

District/ Allotment	2019	2022
Chino Valley Ranger District	28%	7%
Antelope Hills	5%	0%
China Dam	40%	16%
Horseshoe	91%	0%
Muldoon	49%	
Perkinsville	0%	56%
Sand Flat	0%	15%
Walnut Creek	100%	
West Bear/Del Rio	8%	0%
Verde Ranger District		35%
Dugas		39%
Sycamore		30%
Todd		39%
V Bar		46%

Table 32. Critical habitat survey miles impacted by cattle on the Prescott National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Chino Valley Ranger District	0.00	0.0%	24.02	71.9%	4.91	14.7%	4.48	13.4%	33.41
Antelope Hills		0.0%	8.71	94.5%		0.0%	0.50	5.5%	9.21
China Dam		0.0%	1.85	60.2%	1.23	39.9%		0.0%	3.08
Horseshoe		0.0%	0.32	9.2%	1.16	33.6%	1.98	57.2%	3.46
Muldoon		0.0%	1.90	51.2%	1.82	48.8%		0.0%	3.72
Perkinsville		0.0%	1.33	100.0%		0.0%		0.0%	1.33
Sand Flat		0.0%	1.77	100.0%		0.0%		0.0%	1.77
Walnut Creek		0.0%		0.0%		0.0%	2.00	100.0%	2.00
West Bear/Del Rio		0.0%	8.14	92.0%	0.71	8.0%		0.0%	8.84

Table 33. Critical habitat survey miles impacted by cattle on the Prescott National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Chino Valley Ranger District	13.97	61.6%	7.12	31.4%	1.59	7.0%		0.0%	22.67
Antelope Hills	12.23	100.0%		0.0%		0.0%		0.0%	12.23
China Dam		0.0%	2.74	84.0%	0.52	16.0%		0.0%	3.26
Horseshoe	0.61	17.3%	2.91	82.7%		0.0%		0.0%	3.51
Perkinsville		0.0%	0.62	43.5%	0.81	56.4%		0.0%	1.43
Sand Flat	1.13	64.8%	0.35	20.2%	0.26	15.0%		0.0%	1.74
West Bear/Del Rio		0.0%	0.50	100.0%		0.0%		0.0%	0.50
Verde Ranger District	1.73	12.2%	7.49	52.7%	0.96	6.7%	4.02	28.3%	14.20
Dugas	0.28	12.0%	1.16	49.1%	0.50	21.3%	0.41	17.5%	2.37
Sycamore	0.63	7.3%	5.37	62.4%	0.37	4.3%	2.24	26.0%	8.61
Todd	0.39	54.8%	0.04	5.2%		0.0%	0.28	39.4%	0.72
V Bar	0.42	17.0%	0.92	36.7%	0.08	3.3%	1.08	43.2%	2.50

Santa Fe National Forest (New Mexico)

Surveys on the Santa Fe National Forest began in 2023 to assess the condition of New Mexico meadow jumping mouse critical habitat designations and to confirm that jumping mouse exclosures and off-limits riparian pastures are indeed free of cattle. Not only did we confirm cattle presence in off-limits riparian locations on multiple occasions, but surveys on the Santa Fe National Forest revealed percentages of critical habitat damage ranging from 15% on Red Top allotment to 92% on the San Miguel allotment, both in the Cuba Ranger District (Tables 34-35). The Santa Fe National Forest also contains designated critical habitat for Jemez Mountain salamander, upon which the jumping mouse designations largely overlap.

Table 34. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Santa Fe National Forest, by allotment, in 2023.

District/ Allotment	2023
Cuba Ranger District	55%
Ojito Frio	38%
Red Top	15%
San Miguel	92%
Jemez Ranger District	30%
Cebolla San Antonio	22%
San Diego	44%

Table 35. Critical habitat survey miles impacted by cattle on the Santa Fe National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cuba Ranger District	2.96	30.0%	1.45	14.7%	1.49	15.2%	3.96	40.2%	9.86
Ojito Frio	1.23	59.8%	0.05	2.3%	0.18	8.9%	0.60	29.0%	2.06
Red Top	1.72	53.4%	1.02	31.5%		0.0%	0.49	15.2%	3.23
San Miguel		0.0%	0.38	8.4%	1.31	28.7%	2.87	62.9%	4.56
Jemez Ranger District	7.93	46.7%	3.87	22.8%	2.91	17.2%	2.25	13.3%	16.96
Cebolla San Antonio	5.92	55.3%	2.39	22.4%	1.10	10.2%	1.30	12.2%	10.70
San Diego	2.01	32.1%	1.47	23.6%	1.82	29.1%	0.95	15.2%	6.25

Tonto National Forest (Arizona)

The Tonto National Forest contains designated riparian critical habitat for nine different threatened and endangered species including spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, and western yellow-billed cuckoo. Aggregate data concerning Tonto surveys 2019-2024 are contained in Table 36; Tables 37-42 include data for each year of surveys.

From 2019-2024, the Center surveyed 223.4 miles of critical habitat on the Tonto for cattle impacts (range 5.1-78.9 miles/year, average 37.2 miles/year). A majority of stream miles surveyed on the Tonto showed moderate to significant damage from cattle (Tables 36-42).

Cave Creek District: Percent of survey miles moderately to significantly impacted by cattle when surveys began in 2019 was 56%, subsequently ranged from 0% (2022) to 75% (2023) and averaged 46.8% across all survey years. Rates of critical habitat damage were consistently high on Skeleton Ridge allotment, and the riparian border zone of Skeleton Ridge and Cedar Bench allotments showed 100% of survey miles moderately to significantly impacted in both 2019 and 2023.

Globe Ranger District: Percent of survey miles moderately to significantly impacted ranged from 67% (2021) to 100% (2024) and averaged 81% across all survey years. The most impaired allotment, Chrysotile, showed 77% and 100% of survey miles moderately to significantly impacted in the two years it was surveyed, 2022 and 2024.

Payson Ranger District: Percent of survey miles moderately to significantly impacted ranged from 0% (2022) to 100% (2021, 2023) and averaged 67% across all survey years. The most impaired allotments, Catholic Peak, Crouch Mesa, and Gentry Mountain showed 100% of survey miles moderately to significantly impacted in 2024; more than half of survey miles for each showed moderate to significant impacts in 2020, the other year in which they were surveyed.

Tonto Basin Ranger District: Percent of survey miles moderately to significantly impacted ranged from 36% (2024) to 69% (2021) and averaged 53% across all survey years. The most impaired allotment, Seventy-Six, showed 100% and 91% of survey miles with moderate to significant impacts in 2021 and 2024 respectively.

In 2024, the Center surveyed 43.2 stream miles of critical habitat on 12 grazing allotments. Of these, eight allotments showed moderate to significant cattle impacts on the majority of stream miles surveyed.

Table 36. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Tonto National Forest, by allotment, from 2019-2024.

Allotment	2019	2020	2021	2022	2023	2024
Cave Creek Ranger District	56%			0%	75%	56%
Bartlett	63%					
Bull Springs	97%					
Cedar Bench	100%					
Copper Creek						56%
Deadman Mesa/ Skeleton Ridge	47%					
Red Creek	32%					
Sears Club/Chalk Mountain	0%			0%		
Skeleton Ridge	92%				67%	
Skeleton Ridge/Cedar Bench	100%				100%	
Skeleton Ridge/Red Creek	0%					
Globe Ranger District			67%	77%		100%
Bohme			0%			
Chrysotile				77%		100%
Pinto Creek			72%			
Payson Ranger District			100%	0%	100%	68%
Cedar Bench					100%	
Gisela			100%	0%		100%
Green Valley				0%		54%
Pleasant Valley Ranger District		63%	97%	39%		83%
Bar X			100%			
Buzzard Roost			100%	32%		
Catholic Peak		57%				100%
Crouch Mesa		71%				100%
Ellinwood/Diamond Butte				7%		
Gentry Mountain		59%				100%
Haigler Creek			100%			
Marsh Creek				42%		
OW			93%			0%
Red Lake		64%				83%
Soldier Camp			100%	100%		
Spring Creek			100%			
Tonto Basin Ranger District			69%			36%
Havens			100%			
Poison Spring			0%			
Seventy-Six			100%			91%
Tonto Basin			51%			18%
Walnut			0%			
Dagger & Hicks/Pike Peak			70%			48%

Table 37. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District	30.58	38.7%	3.79	4.8%	3.66	4.6%	40.95	51.8%	78.98
Bartlett	1.67	24.8%	0.81	12.0%	1.59	23.6%	2.67	39.7%	6.73
Bull Springs	0.26	3.2%		0.0%		0.0%	7.90	96.8%	8.16
Cedar Bench		0.0%		0.0%		0.0%	9.70	100.0%	9.70
Cedar Bench/ Skeleton Ridge border		0.0%		0.0%		0.0%	1.70	100.0%	1.70
Deadman Mesa/ Skeleton Ridge border	2.42	46.0%	0.35	6.7%	0.34	6.5%	2.14	40.8%	5.25
Red Creek	12.60	56.8%	2.49	11.2%	0.81	3.6%	6.27	28.3%	22.17
Sears Club/Chalk Mountain	11.39	100.0%		0.0%		0.0%		0.0%	11.39
Skeleton Ridge	0.86	6.9%	0.14	1.1%	0.92	7.4%	10.56	84.6%	12.49
Skeleton Ridge/ Red Creek border	1.38	100.0%		0.0%		0.0%		0.0%	1.38

Table 38. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Pleasant Valley Ranger District	0.20	1.9%	3.63	34.7%	2.33	22.3%	4.30	41.1%	10.45
Catholic Peak		0.0%	0.33	42.9%	0.14	18.2%	0.30	38.5%	0.78
Crouch Mesa		0.0%	0.47	29.1%	0.70	43.5%	0.44	27.4%	1.60
Gentry Mountain	0.20	8.3%	0.80	33.2%	0.67	27.8%	0.74	30.7%	2.40
Red Lake		0.0%	2.03	35.8%	0.82	14.5%	2.82	49.7%	5.67

Table 39. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Globe Ranger District	2.68	25.5%	0.83	7.9%	0.79	7.5%	6.20	59.0%	10.51
Bohme		0.0%	0.83	100.0%		0.0%		0.0%	0.83
Pinto Creek	2.68	27.8%		0.0%	0.79	8.1%	6.20	64.2%	9.67
Payson Ranger District		0.0%		0.0%		0.0%	4.03	100.0%	4.03
Gisela		0.0%		0.0%		0.0%	4.03	100.0%	4.03
Pleasant Valley Ranger District		0.0%	0.31	2.9%	2.79	26.6%	7.40	70.5%	10.49
Bar X		0.0%		0.0%		0.0%	1.69	100.0%	1.69
Buzzard Roost		0.0%		0.0%	0.91	100.0%		0.0%	0.91
Haigler Creek		0.0%		0.0%		0.0%	0.30	100.0%	0.30
OW		0.0%	0.31	7.4%	0.97	23.2%	2.90	69.5%	4.17
Soldier Camp		0.0%		0.0%	0.91	31.9%	1.95	68.1%	2.86
Spring Creek		0.0%		0.0%		0.0%	0.56	100.0%	0.56
Tonto Basin Ranger District	7.74	21.0%	3.65	9.9%	3.40	9.2%	22.03	59.8%	36.83
Havens		0.0%		0.0%	1.64	33.8%	3.22	66.2%	4.86
Poison Spring	0.41	100.0%		0.0%		0.0%		0.0%	0.41
Seventy-Six		0.0%		0.0%	1.75	23.7%	5.64	76.3%	7.39
Tonto Basin	5.69	29.7%	3.65	19.1%		0.0%	9.81	51.2%	19.15
Walnut	0.21	100.0%		0.0%		0.0%		0.0%	0.21
Dagger & Hicks/Pike Peak	1.43	29.7%		0.0%		0.0%	3.37	70.2%	4.80

Table 40. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District	4.39	100.0%		0.0%		0.0%		0.0%	4.39
Sears Club/Chalk Mountain	4.39	100.0%		0.0%		0.0%		0.0%	4.39
Globe Ranger District	0.65	10.6%	0.79	12.9%	1.33	21.6%	3.38	55.0%	6.14
Chrysotile	0.65	10.6%	0.79	12.9%	1.33	21.6%	3.38	55.0%	6.14
Payson Ranger District	0.46	20.1%	1.84	80.0%		0.0%		0.0%	2.30
Gisela	0.46	53.8%	0.40	46.2%		0.0%		0.0%	0.86
Green Valley		0.0%	1.44	100.0%		0.0%		0.0%	1.44
Pleasant Valley Ranger District	4.96	45.2%	1.71	15.6%	3.41	31.1%	0.90	8.2%	10.97
Buzzard Roost	0.49	18.4%	1.31	49.7%	0.41	15.7%	0.42	16.0%	2.64
Ellinwood/Diamond Butte	3.32	82.8%	0.40	9.9%	0.29	7.2%		0.0%	4.01
Marsh Creek	1.15	58.1%		0.0%	0.83	42.1%		0.0%	1.98
Soldier Camp		0.0%		0.0%	1.87	79.6%	0.48	20.2%	2.35

Table 41. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District		0.0%	0.54	25.0%		0.0%	1.62	75.0%	2.16
Skeleton Ridge		0.0%	0.54	33.3%		0.0%	1.08	66.7%	1.62
Skeleton Ridge/Cedar Bench		0.0%		0.0%		0.0%	0.54	100.0%	0.54
Payson Ranger District		0.0%		0.0%		0.0%	2.96	100.0%	2.96
Cedar Bench		0.0%		0.0%		0.0%	2.96	100.0%	2.96

Table 42. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District		0.0%	1.28	43.9%	1.63	56.2%		0.0%	2.91
Copper Creek		0.0%	1.28	43.9%	1.63	56.2%		0.0%	2.91
Globe Ranger District		0.0%		0.0%		0.0%	1.83	100.0%	1.83
Chrysotile		0.0%		0.0%		0.0%	1.83	100.0%	1.83
Payson Ranger District		0.0%	0.78	31.9%	0.76	30.8%	0.91	37.3%	2.45
Gisela		0.0%		0.0%	0.76	100.0%		0.0%	0.76
Green Valley		0.0%	0.78	46.0%		0.0%	0.91	53.7%	1.70
Pleasant Valley Ranger District	0.94	7.3%	1.22	9.6%	2.15	16.9%	8.44	66.2%	12.75
Catholic Peak		0.0%		0.0%		0.0%	0.79	100.0%	0.79
Crouch Mesa		0.0%		0.0%		0.0%	1.59	100.0%	1.59
Gentry Mountain		0.0%		0.0%	0.38	10.5%	3.23	89.3%	3.62
OW		0.0%	1.22	100.0%		0.0%		0.0%	1.22
Red Lake	0.94	16.9%		0.0%	1.77	32.0%	2.83	51.0%	5.54
Tonto Basin Ranger District	9.30	40.0%	5.65	24.3%	1.88	8.1%	6.42	27.6%	23.24
Seventy-Six		0.0%	0.25	8.6%		0.0%	2.62	91.5%	2.86
Tonto Basin	7.49	54.9%	3.71	27.2%		0.0%	2.45	17.9%	13.65
Dagger & Hicks/Pike Peak	1.81	26.8%	1.69	25.1%	1.88	28.0%	1.35	20.1%	6.73

Bureau of Land Management, Arizona State Office

Phoenix District

The Center began surveying critical habitat designations within the Agua Fria National Monument, of BLM's Phoenix District, in 2021. This National Monument includes five grazing allotments that were surveyed to assess critical habitat designations for Gila chub and yellow-billed cuckoo. Aggregate data concerning Agua Fria surveys in 2021-2024 are contained in Table 43; Tables 44-47 include data for each year of surveys.

Between 2021-2024, the average percent of Agua Fria National Monument critical habitat miles damaged by cattle impacts is 87% (range 71%-100%) (Tables 43-47). Despite seasonal restrictions on grazing within riparian zones of the Monument, which routinely go unenforced, there has been only one instance in four years of an allotment with less than 50% of critical habitat moderately to significantly impacted by cattle. Regardless of precipitation trends, critical habitat across the five surveyed allotments of Agua Fria National Monument is routinely degraded by damage from livestock. Critical habitat on the Box Bar allotment has yet to be less than 95% damaged by cattle in any survey year.

Table 43. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the BLM's Phoenix District, by allotment, from 2021-2024.

Unit/ Allotment	2021	2022	2023	2024
Agua Fria NM	100%	93%	71%	83%
2Y		100%	67%	66%
Box Bar		100%	96%	95%
E-Z Ranch		84%	52%	76%
Horseshoe	100%	90%	57%	79%
Sycamore		100%	45%	100%

Table 44. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2021.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Agua Fria NM		0.0%		0.0%	0.34	7.0%	4.53	93.0%	4.87
Horseshoe		0.0%		0.0%	0.34	7.0%	4.53	93.0%	4.87

Table 45. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2022.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Agua Fria NM	1.36	6.3%	0.11	0.5%	1.90	8.8%	18.32	84.5%	21.69
2Y		0.0%		0.0%	0.13	14.6%	0.77	85.3%	0.90
Box Bar		0.0%		0.0%	0.66	7.7%	7.93	92.2%	8.60
E-Z Ranch	0.92	14.0%	0.11	1.7%	0.71	11.0%	4.76	73.3%	6.50
Horseshoe	0.44	9.6%		0.0%		0.0%	4.13	90.3%	4.57
Sycamore		0.0%		0.0%	0.39	34.8%	0.73	65.0%	1.13

Table 46. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Agua Fria NM	0.32	1.2%	2.83	10.6%	4.69	17.5%	18.95	70.7%	26.80
2Y		0.0%		0.0%	0.29	33.3%	0.59	66.8%	0.88
Box Bar		0.0%		0.0%	0.45	4.3%	9.84	95.7%	10.29
E-Z Ranch	0.32	6.0%	0.42	7.8%	1.85	34.5%	2.78	51.7%	5.37
Horseshoe		0.0%	2.41	25.7%	1.62	17.3%	5.34	57.0%	9.37
Sycamore		0.0%		0.0%	0.48	54.4%	0.40	45.4%	0.88

Table 47. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2024.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Agua Fria NM	0.41	1.5%	4.08	15.0%	5.05	18.6%	17.64	64.9%	27.19
2Y	0.14	15.6%	0.16	18.3%		0.0%	0.59	66.0%	0.89
Box Bar		0.0%	0.41	5.2%	1.30	16.6%	6.16	78.3%	7.87
E-Z Ranch	0.27	5.1%	1.01	18.9%	2.54	47.5%	1.52	28.5%	5.35
Horseshoe		0.0%	2.50	20.9%	1.20	10.1%	8.23	69.0%	11.93
Sycamore		0.0%		0.0%		0.0%	1.15	100.0%	1.15

Gila District

BLM's Gila District (Tables 48-54), subdivided into the Tucson and Safford Field Offices, contains critical habitat for a multitude of species including yellow-billed cuckoo, southwestern willow flycatcher, spikedace, loach minnow, razorback sucker, Chiricahua leopard frog, northern Mexican and narrow-headed garter snakes, and plants such as Arizona eryngo and Huachuca water umbel.

The Gila District manages two Riparian National Conservation Areas (RNCAs), including the San Pedro RNCA and the Gila Box RNCA, which Congress specifically designated

to protect the riparian values found there. Despite these congressional designations, these two RNCAs routinely show a high degree of significant cattle impacts in designated critical habitat. The entirety of the San Pedro RNCA was surveyed in 2023 and nearly every mile—both within grazing allotments and outside of them—showed moderate to significant impacts from cattle. The Gila Box RNCA, despite its National Conservation Area designation and year-round grazing restrictions in riparian zones, has averaged nearly 87% of riparian critical habitat miles moderately to significantly damaged by unauthorized cattle.

Another group of allotments, managed by the Tucson Field Office, occurs along the Gila River downstream of the Gila River/ San Pedro River confluence. These seven grazing allotments were surveyed for cattle impacts beginning in 2022, and each one had 100% of survey miles moderately to significantly degraded by cattle. Percentage of moderately to significantly impacted critical habitat was slightly improved in 2024 but still ranged from 45.7% to 100%.

Government Springs and Sleeping Beauty Mountain allotments occur adjacent to the Tonto Nation Forest. These two allotments had lower rates of cattle damage, likely owing to a lack of surface water in riparian zones and thus less concentration of cattle in these places.

Table 48. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the BLM's Gila District, by allotment, from 2021-2024.

Unit/ Allotment	2019	2020	2021	2022	2023	2024
San Pedro RNCA	14.3%	67.5%	64.9%	64.1%	97.5%	
Not in allotment	14.3%	67.5%	58.7%	69.5%	97.5%	
Babocomari			100.0%	0.0%		
Brunchow Hill			0.0%	0.0%		
Lucky Hills			100.0%	0.0%		
Three Brothers			100.0%	100.0%		
Gila Box RNCA			87.2%			86.2%
Bonita Creek			58.1%			48.7%
Bull Gap Community			100.0%			71.7%
Gila			100.0%			100.0%
Johnny Creek			100.0%			
Johnny Creek/Bonita Creek						100.0%
Morenci			100.0%			100.0%
Not in allotment						100.0%
Zorilla			100.0%			100.0%
Tucson Field Office				89.1%	67.2%	68.6%
A-Diamond				100.0%		66.4%
Government Springs				26.1%		
Horsetrack				100.0%		51.0%
Len & Cochran				100.0%		100.0%
Len & Teacup Ranch				100.0%		78.9%
Myers				100.0%		
Myers/Whitlow				100.0%		45.7%
Not in allotment					67.2%	
Sleeping Beauty Mtn				39.5%		

Table 49. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2019.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	6.87	36.9%	9.09	48.8%	2.67	14.3%		0.0%	18.63
Not in allotment	6.87	36.9%	9.09	48.8%	2.67	14.3%		0.0%	18.63

Table 50. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2020.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	2.38	21.4%	1.24	11.2%	0.21	1.9%	7.30	65.6%	11.13
Not in allotment	2.38	21.4%	1.24	11.2%	0.21	1.9%	7.30	65.6%	11.13

Table 51. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2021.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	2.61	13.7%	4.06	21.4%	1.36	7.2%	10.96	57.7%	18.99
Not in allotment	1.26	9.8%	4.06	31.6%	0.48	3.7%	7.07	55.0%	12.87
Babocomari		0.0%		0.0%		0.0%	1.08	100.0%	1.08
Brunchow Hill	1.35	100.0%		0.0%		0.0%		0.0%	1.35
Lucky Hills		0.0%		0.0%	0.89	25.8%	2.54	74.2%	3.43
Three Brothers		0.0%		0.0%		0.0%	0.26	100.0%	0.26
Gila Box RNCA	2.89	9.7%	0.93	3.1%	4.21	14.2%	21.70	73.0%	29.73
Bonita Creek	2.89	31.8%	0.93	10.2%	3.03	33.3%	2.25	24.8%	9.10
Bull Gap Community		0.0%		0.0%		0.0%	3.51	100.0%	3.51
Gila		0.0%		0.0%		0.0%	4.86	100.0%	4.86
Johnny Creek		0.0%		0.0%	1.18	34.7%	2.22	65.3%	3.40
Morenci		0.0%		0.0%		0.0%	7.62	100.0%	7.62
Zorilla		0.0%		0.0%		0.0%	1.23	100.0%	1.23

Table 52. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2022.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	3.77	9.3%	10.81	26.6%	4.23	10.4%	21.84	53.7%	40.65
Not in allotment	3.77	10.7%	6.98	19.8%	4.23	12.0%	20.27	57.5%	35.25
Babocomari		0.0%	1.67	100.0%		0.0%		0.0%	1.67
Brunchow Hill		0.0%	0.13	100.0%		0.0%		0.0%	0.13
Lucky Hills		0.0%	2.03	100.0%		0.0%		0.0%	2.03
Three Brothers		0.0%		0.0%		0.0%	1.57	100.0%	1.57
Tucson Field Office	2.19	7.3%	1.07	3.6%	2.39	8.0%	24.26	81.1%	29.91
A-Diamond		0.0%		0.0%	0.47	9.3%	4.63	90.7%	5.10
Government Springs	1.98	61.9%	0.39	12.1%	0.74	23.0%	0.10	3.1%	3.20
Horsetrack		0.0%		0.0%	1.18	25.4%	3.44	74.6%	4.62
Len & Cochran		0.0%		0.0%		0.0%	4.07	100.0%	4.07
Len & Teacup Ranch		0.0%		0.0%		0.0%	5.22	100.0%	5.22
Myers		0.0%		0.0%		0.0%	2.01	100.0%	2.01
Myers/Whitlow		0.0%		0.0%		0.0%	4.20	100.0%	4.20
Sleeping Beauty Mtn	0.21	14.4%	0.68	46.1%		0.0%	0.58	39.5%	1.47

Table 53. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA		0.0%	1.06	2.5%	1.82	4.3%	39.06	93.1%	41.94
Not in allotment		0.0%	1.06	2.5%	1.82	4.3%	39.06	93.1%	41.94
Tucson Field Office		0.0%	0.83	32.8%	0.10	3.9%	1.60	63.3%	2.52
Not in allotment		0.0%	0.83	32.8%	0.10	3.9%	1.60	63.3%	2.52

Table 54. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2024.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Gila Box RNCA	3.93	13.8%		0.0%	0.97	3.4%	23.62	82.8%	28.52
Bonita Creek	2.49	51.3%		0.0%	0.63	12.9%	1.74	35.8%	4.86
Bull Gap Community	1.44	28.2%		0.0%		0.0%	3.66	71.7%	5.10
Gila		0.0%		0.0%		0.0%	4.22	100.0%	4.22
Johnny Creek/Bonita Creek		0.0%		0.0%		0.0%	3.00	100.0%	3.00
Morenci		0.0%		0.0%	0.34	4.7%	6.97	95.2%	7.32
Not in allotment		0.0%		0.0%		0.0%	2.84	100.0%	2.84
Zorilla		0.0%		0.0%		0.0%	1.20	100.0%	1.20
Tucson Field Office		0.0%	5.59	31.4%	0.84	4.7%	11.38	63.9%	17.80
A-Diamond		0.0%	2.16	33.6%		0.0%	4.26	66.4%	6.42
Horsetrack		0.0%	0.52	48.8%		0.0%	0.55	51.0%	1.07
Len & Cochran		0.0%		0.0%	0.32	12.4%	2.25	87.6%	2.57
Len & Teacup Ranch		0.0%	0.82	21.1%		0.0%	3.09	78.9%	3.91
Myers/Whitlow		0.0%	2.08	54.3%	0.52	13.6%	1.23	32.1%	3.84

Hassayampa District

Beginning in 2023, the Center began our assessments of designated critical habitat within the Big Sandy River watershed (Tables 55-57). Here, grazing allotments are managed by the BLM Kingman Field Office and contain critical habitat designations for southwestern willow flycatcher, yellow-billed cuckoo, and northern Mexican garter snake. In most cases, BLM management documents require important riparian ecosystems to be protected from cattle through exclosures, seasonal limitations, and closed allotments. However, Center surveys revealed that none of these measures were being enforced on the ground and that cattle impacts were ubiquitous and significant throughout the watershed.

In 2023, percent of survey miles with moderate to significant cattle impacts averaged 91% (range 61%-100%) in allotments under Kingman Field Office management (Table 56). Five of the seven allotments surveyed exhibited 100% of riparian survey miles moderately to significantly damaged by cattle. Although only five allotments were subsequently resurveyed in 2024, high rates of cattle impacts remained (Table 57), indicating a sustained problem of cattle-damaged critical habitat in this region of Arizona, including several locations off-limits to cattle either permanently or seasonally. The only allotment that showed improvement was Planet allotment, going from 61% to 13% moderately to significantly impacted by livestock.

Table 55. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the BLM's Hassayampa District, by allotment, from 2023-2024.

Unit/ Allotment	2023	2024
Kingman Field Office	91%	75%
Artillery Range	100%	100%
Chino Springs	100%	
Greenwood Community	100%	100%
Greenwood Peak Community	100%	100%
Palmerita	100%	
Planet	61%	13%
Primrose	79%	81%

Table 56. Critical habitat survey miles impacted by cattle in BLM's Hassayampa District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Kingman Field Office		0.0%	1.98	8.6%	4.62	20.1%	16.44	71.4%	23.03
Artillery Range		0.0%		0.0%	1.12	68.6%	0.52	31.5%	1.64
Chino Springs		0.0%		0.0%		0.0%	3.60	100.0%	3.60
Greenwood Community		0.0%		0.0%		0.0%	1.47	100.0%	1.47
Greenwood Peak Community		0.0%		0.0%		0.0%	3.83	100.0%	3.83
Palmerita		0.0%		0.0%		0.0%	5.68	100.0%	5.68
Planet		0.0%	1.20	38.4%	1.91	61.5%		0.0%	3.11
Primrose		0.0%	0.78	21.1%	1.58	42.8%	1.33	36.0%	3.70

Table 57. Critical habitat survey miles impacted by cattle in BLM's Hassayampa District in 2024.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Kingman Field Office		0.0%	3.63	25.2%	4.50	31.2%	6.30	43.6%	14.44
Artillery Range		0.0%		0.0%	2.32	78.6%	0.63	21.5%	2.95
Greenwood Community		0.0%		0.0%		0.0%	2.27	100.0%	2.27
Greenwood Peak Community		0.0%		0.0%	1.70	58.5%	1.21	41.5%	2.91
Planet		0.0%	3.12	86.7%	0.48	13.3%		0.0%	3.60
Primrose		0.0%	0.51	18.9%		0.0%	2.19	81.1%	2.70

Bureau of Land Management, Utah State Office

Paria River District

In 2023, the Center expanded critical habitat surveys into the BLM's Utah State Office to assess southwestern willow flycatcher riparian designations on Grand Staircase-Escalante National Monument. While flycatcher designations occur specifically on the Cottonwood allotment, nearby allotments also host designated critical habitat and Primary Activity Centers (PAC's) for Mexican spotted owls. Of the nearly 19 miles of riparian habitat surveyed on the Cottonwood allotment, 83% was found to have moderate to significant cattle impacts (Table 58). Overall, 87% of the surveyed riparian miles across the area showed moderate to significant impacts, underscoring the need for a reevaluation and expansion of survey efforts in Grand Staircase-Escalante National Monument.

Table 58. Percent of survey miles moderately to significantly impacted by cattle on the BLM's Paria River District, by allotment, in 2023.

Unit/ Allotment	2023
Grand Staircase-Escalante NM	87%
Cottonwood	83%
Lower Hackberry	100%
Mollies Nipple	95%

Table 59. Critical habitat survey miles impacted by cattle in BLM's Paria River District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Grand Staircase-Escalante NM	0.51	1.8%	3.20	11.1%	9.17	31.9%	15.88	55.2%	28.76
Cottonwood	0.51	2.7%	2.79	14.8%	5.71	30.2%	9.90	52.3%	18.92
Lower Hackberry		0.0%		0.0%	1.60	89.6%	0.19	10.7%	1.79
Mollies Nipple		0.0%	0.40	5.0%	1.86	23.0%	5.79	71.9%	8.05

Discussion

A multitude of Southwestern native species associated with riparian ecosystems, cienegas and other wetlands are threatened, endangered, or otherwise imperiled due to habitat loss, degradation, and ecosystem alteration.[29]

Results from the Center's field surveys from 2017-2024 show widespread, region-wide damage from livestock grazing to aquatic and riparian critical habitat for threatened and endangered species on federally managed public lands in Arizona, New Mexico and Utah. In total, we have documented moderate to significant cattle impacts on 62% of the total 2,435 miles surveyed across the region.

Based on our critical habitat survey results and the unwillingness of federal land managers and livestock permit-holders to prevent continued degradation of riparian habitat on the majority of critical habitat designations surveyed, and based on the absence of management plans or conservation agreements that meaningfully conserve and prevent adverse modification to the physical and biological features that endangered species depend upon, the Center recommends and insists that agencies effectively exclude livestock from designated critical habitat in Arizona, New Mexico and Utah.

Because of the vital importance of intact riparian areas to sustaining and recovering ESA-listed species, and the undeniable link between livestock grazing and damaged riparian areas, agencies must determine whether grazing is an appropriate and suitable use of riparian public lands. To undertake this assessment, federal agencies must consider the relative value that ungrazed, recovering riparian areas provide to wildlife (especially special status species), water quality and hydrological processes against the value of riparian systems degraded and lost due to public lands livestock production. Livestock grazing is an inappropriate and unsuitable use in areas where wildlife habitat of elevated worth and importance has been or has the potential to be damaged by livestock use. Livestock grazing is also inappropriate and unsuitable when it would prevent timely recovery of important and valuable keystone ecosystems or when it disrupts the functionality of essential riparian areas, compromising their ability to support imperiled native species.

Ecological conditions on Western public lands have worsened recently,[30] mainly due to reduced productivity caused by livestock production in conjunction with a changing climate and

[29] Johnson, A.S., 1989. The thin green line: riparian corridors and endangered species in Arizona and New Mexico. *In defense of wildlife: preserving communities and corridors. Defenders of Wildlife, Washington, DC*, pp.35-46.

[30] Donahue, D.L., 2006. Federal rangeland policy: perverting law and jeopardizing ecosystem services. J. Land Use & Envtl. L., 22, p. 299.

an historically unprecedented 'megadrought'.[31,32] Using public lands for livestock production is known to exacerbate the effects of climate change.[33]

FWS recognizes the escalating climate problem but has failed to take meaningful action to mitigate it. Despite dire climate projections forecasted for the southwestern states, the FS, BLM, and FWS continue to authorize status quo livestock grazing on federal public lands with no practical or meaningful revisions to protect riparian ecosystems or the imperiled native species whose future survival depends on them.

Livestock exclusion is the best way to mitigate climate change impacts and aridification, as removal of cattle grazing has been correlated with dramatic increases in native riparian vegetation.[34,35,36,37] Only by eliminating livestock impacts will native riparian ecosystems survive and recover in this historic Anthropocene era defined by record heat and drought. While the effects of climate change are difficult to control, riparian habitat on public lands in the Southwest can be dramatically improved simply by excluding livestock from these areas.

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[31] Beschta, R.L., Donahue, D.L., DellaSala, D.A., Rhodes, J.J., Karr, J.R., O'Brien, M.H., Fleischner, T.L. and Williams, C.D., 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, 51(2), pp.474-491.

[32] Williams, A. P., Cook, B. I., & Smerdon, J. E. (2022). Rapid intensification of the emerging southwestern North American megadrought in 2020–2021. Nature Climate Change, 12, 232–234. https://doi.org/10.1038/s41558-022-01290-z

[33] Kauffman, J.B., Beschta, R.L., Lacy, P.M. *et al.* Livestock Use on Public Lands in the Western USA Exacerbates Climate Change: Implications for Climate Change Mitigation and Adaptation. *Environmental Management* **69**, 1137–1152 (2022). https://doi.org/10.1007/s00267-022-01633-8

[34] Rucks, M.G., 1984. Composition and trend of riparian vegetation on five perennial streams in southeastern Arizona. In California Riparian Systems (pp. 97-108). University of California Press.

[35] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

[36] Reichenbacher, F.W., 1984. Ecology and evolution of southwestern riparian plant communities [The relationship between the distributions of plants in the floodplain and a set of physical site factors, Trout Creek, Mohave County Arizona; USA]. Desert Plants.

[37] Szaro, R.C. and Pase, C.P., 1983. Short-term changes in a cottonwood-ash-willow association on a grazed and an ungrazed portion of Little Ash Creek in central Arizona *Populus fremontii*, velvet ash, *Fraxinus velutina*, Goodding willow, *Salix gooddingii*. Rangeland Ecology & Management/Journal of Range Management Archives, 36(3), pp.382-384.

Appendix A. Survey Methods Tables

Table A-1. Condition descriptors and severity score guidelines for the six cattle impact categories used in the rapid assessment surveys.

Category	Condition: 1	Condition: 2	Condition: 3	Condition: 4
GRAZING EVIDENCE ON GRASSES AND HERBACEOUS GROWTH	**LIMITED** Less than 1% of the grasses impacted.	**LIGHT** Few to some patches of grazed area or selective grazing in patches.	**MODERATE** Multiple grass patches grazed, more than 20% of grass impacted in patches.	**SEVERE/HEAVY** Multiple patches grazed, low grass heights less than 1 inch. More than 30% grazed in patches
BROWSE PRESSURE/WOODY Stems	**LIMITED** Less than 1% of woody stems impacted	**LIGHT** Browsing limited to multiyear stems	**MODERATE** Browse pressure on near channel woody recruitment	**HEAVY/SEVERE** Multiple green-line or near channel recruitment browsed
GROUND COVER DISTURBANCE/INTENSITY	**LIMITED** Limited to transient evidence of use.	**LOW** Isolated trailing and cow trails developing.	**MODERATE** Multiple trails and the presence of wallows and rutting areas. Some bare soils.	**SEVERE** Trails, plus wallows, rutting and compaction leading to denuded ground and larger areas of bare soils.
GROUND COVER DISTURBANCE/EXTENT	**LIMITED** Few examples of disturbance.	**SCATTERED** Trails or disturbances in more than one location in segment.	**MODERATE** Trails meander through entire segment and there are multiple moderate level disturbances (see above).	**PERVASIVE** Multiple locations of disturbance and multiple types of disturbances, including severe moderate and low (see above).
STREAMBANK DEGRADATION/INTENSITY	**LIMITED** No visible signs, but other cattle impact on both sides of river that evidence crossing.	**LOW** Trails leading to streambank and water's edge.	**MODERATE** Trailing and trails creating unstable banks, some chiseling, or in low relief banks-muddy compaction	**SEVERE** Trailing leading to shearing and removal of a portion of the streambank leaving vertical surfaces.
STREAMBANK DEGRADATION/EXTENT	**LIMITED** Isolated example of streambank entry.	**SCATTERED** Bank degradation of any intensity in more than one location.	**MODERATE** Multiple examples of low and moderate bank degradation (see above).	**PERVASIVE** Multiple examples of low, moderate, and severe degradation (see above).

Table A-2. Weighting table for overall impact levels of stream reach segments based on condition scores (0-4) from the six categories of cattle impacts.

ABSENT	LIGHT IMPACT	MODERATE IMPACT	SIGNIFICANT IMPACT
ALL ZEROS	ANY COMBINATION OF ONE'S & TWOS & ZEROS	AT LEAST (5) TWOS WITH ANY OTHER NUMBER	ANY TIME THERE ARE (3) THREES WITH ANY OTHER COMBINATION OF NUMBERS
		ANY COMBINATION OF TWOS, THREES, AND ONE'S	ANY COMBINATION OF NUMBERS WITH AT LEAST (1) FOUR
	(UNLESS (5) TWOS-` then moderate)	*(UNLESS (3) THREES- then significant)*	

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Safford Field Office
711 South 14th Avenue
Safford, Arizona 85546
928-348-4400
www.az.blm.gov

June 13, 2025

In Reply Refer To:
6843 (G010)

DELIVERED ELECTRONICALLY

To: Arizona Ecological Services, U.S. Fish and Wildlife Service
Attention: Scott Richardson, Field Supervisor

From: Shelby Leachet, Assistant Field Manager

Subject: Safford Field Office Annual Report to U.S. Fish and Wildlife Service

This report fulfills the requirements for the Bureau of Land Management (BLM) to submit an annual report to the U.S. Fish and Wildlife Service (USFWS) for the 2023 and 2024 calendar years, January to December. We are presenting information here that is required under the Biological Opinion (BO) for the Gila District Livestock Grazing Program (#2023-0107755) received on January 31, 2024.

In April of 2023, one temporary range improvement was permitted within Critical Habitat for the Yellow-billed Cuckoo in the Gila Box Riparian National Conservation Area (GBRNCA) using the NEPA Categorical Exclusion Authority 516 DM 11.9, D. Range Management (2) Placement and use of temporary (not to exceed one month) portable corrals and water troughs, providing no new road construction is needed. A portable corral was installed in the Johnny Creek Allotment to enable the allotment permittee to remove unauthorized livestock from the GBRNCA. The corral, temporarily placed at -109.541649, 32.975653, was necessary to capture and remove two bulls from the area of the Bonita Creek floodplain which is boggy, rocky, heavily vegetated, steep, and difficult terrain to capture unhandled livestock in. The corral's footprint was permitted at 100 ft. by 100 ft. and comprised of free-standing metal panels which would not be secured into the ground. Wildlife escape ramps and exit gaps were built into the design, and the corral was to be inspected every two days with livestock removed at each inspection. Please see the BLM document: DOI-BLM-AZ-G010-2023-0011-CX for more information.

Information regarding inventory and monitoring of listed species is submitted to the USFWS as reports on our collecting permits and is not repeated here.

The BLM works with livestock grazing permittees to reduce/eliminate incidental unauthorized livestock use within the riparian areas of the GBRNCA and continues to coordinate with livestock owners for livestock removal and fence maintenance.

Incidental unauthorized livestock use in the Gila Box National Riparian Conservation Area (GBNRCA) along the Gila River is normally monitored during river patrols of the GBRNCA, as Gila River flows allow. River patrols are conducted by the BLM River Ranger, BLM staff, and volunteers. The Safford Field Office River Ranger conducted three river patrols in 2023 (one each in January, April, and May), and four river patrols in 2024 (one each in January, March, April, and October). Additional incidental unauthorized livestock monitoring of the riparian area within the GBRNCA was done throughout 2023 and 2024 by BLM staff on foot or by vehicle, where accessible. Monitoring is also informed by reported sighting of cattle by the public or livestock grazing permittees.

Flood events and careless recreationists have attributed to the need for water gap and fence repair. In 2023 and 2024 areas of downed fence were either repaired by BLM or by the permittees who frequently made repairs in a timely manner throughout the monsoon season to block livestock access to the GBRNCA riparian areas. The water gap fence at the San Carlos Apache Tribe / City of Safford boundary line on the upper end of Bonita Creek has been a challenge and the BLM is continuing efforts to work with the San Carlos Apache Tribe on a more permanent solution that would withstand the occasional high-water flows of Bonita Creek. San Carlos has not responded to BLM's requests to discuss this matter. BLM has obligated funds to a Gila Watershed Partnership agreement to complete this project using Inflation Reduction Act funds. BLM has coordinated with the Arizona Association of Conservation Districts (AACD) to inventory fence condition and currently maintenance activities are being done on the GBRNCA fences.

In October 2021, the Center for Biological Diversity (CBD) and the Maricopa Audubon Society (MAS) filed a lawsuit naming the BLM and USFWS as Defendants. On September 9, 2022, a Stipulated Settlement Agreement was initiated between the BLM and USFWS versus CBD and MAS regarding the October 2021 lawsuit. This agreement required the BLM to monitor riparian areas excluded from permitted livestock grazing for presence of livestock at a minimum of two inspections annually. Grazing allotments that have excluded riparian areas include the Bonita Creek, Johnny Creek, Zorilla, Gila, Morenci, and Bull Gap. If livestock were detected within the excluded areas, BLM would work with the associated permittee or livestock owner to determine how livestock gained access to the area and determine corrective actions, including but not limited to fence repairs. The BLM provided CBD and MAS with quarterly reports which listed livestock inspections conducted within the riparian areas of the GBRNCA and any subsequent actions taken. In calendar year 2023, four quarterly reports were submitted in compliance with the stipulated settlement agreement. In calendar year 2024, quarterly reports were no longer required to be submitted as the Endangered Species Act consultation with USFWS was completed on January 31, 2024; fulfilling all of BLM's obligation of the Stipulated Settlement Agreement. In November 2024, CBD and MAS filed a Notice of Intent to Sue for Violations of the Endangered Species Act Regarding Continued Livestock Damage within the GBRNCA. This notice is directed at both the BLM and the USFWS and is a supplement to the information presented in the July 2021 NOI. The NOI states that the January 2024 Biological Opinion requires reinitiation of consultation regarding effects of the action on listed Threatened and Endangered species and specified Critical Habitats, noting that if consultation is not reinitiated that CBD will proceed with legal action.

In 2023 and 2024 there were 217 and 162 distinct reports of individual livestock within the GBRNCA boundary. Many of these were cattle entering from San Carlos Apache lands north and west of the GBRNCA. Livestock were not reported as removed by the tribe despite notification by BLM Range Management Specialists. The reason for the increase in the cattle observed as compared to the previous few years is due to the greater presence of BLM staff in the area and patrolling of the river corridor. The BLM continues to coordinate with permittees, the San Carlos Apache Tribe, and the public to prevent

unauthorized livestock use. Lack of staff continues to be a challenge for BLM. The Rangeland Management Specialist and Range Technician positions are important resources for completing livestock compliance and fence repairs. The BLM Safford Field Office currently has two Rangeland Management Specialists and had a Range Technician up until May 2024. The Safford Field Office is working towards filling the Range Technician position and plans to fill one of two vacant RMS positions.

The BLM Safford Field Office continues to implement its grazing program as described in the referenced B.O. Five grazing permit/lease renewals were processed in 2023. These allotments did not require mitigation for listed species. Permit/lease renewals processed in 2023 included the Sheepskin Wash, Wiregrass Lake, Badger Den, Zuni Ranch, and Concho Ranch Allotments. No grazing permit/lease renewals were processed in 2024. The grazing permit/lease renewal for Pipeline Allotment is slated for completion, although listed species concerns for the Peebles Navajo Cactus (*Pediocactus peeblesianus* var. *peeblesianus*) must be alleviated through consultation and potential mitigation. The species was found within the Pipeline Allotment on BLM-managed lands on April 30, 2022 by researchers with The Arboretum at Flagstaff. Discussions are underway with the USFWS and partners at AZGFD and The Arboretum at Flagstaff regarding the potential cattle and off-highway vehicle exclosure(s) in this area based upon new survey data. The Arboretum at Flagstaff will be conducting census surveys at all known populations of Peebles Navajo Cactus in April and May of 2025-2026. The Arizona Game and Fish Department is in process of conducting occurrence surveys of Peebles Navajo Cactus in locations determined by a GIS-developed habitat model. The 2024 efforts were focused on known locations of PNC. The 2025 efforts would be concentrated on areas identified through GIS-developed habitat modeling of suitable habitat. The results of these surveys should help to inform necessary adjustments or additions to cattle exclosures currently on the ground as well as new exclosures that shall be erected.

Reports of unauthorized livestock have been summarized by date and are provided in the enclosed table along with actions taken to resolve each occurrence. The enclosed tables also provide species updates for actions taken in 2023 and 2024. Also included is a copy of the Bonita Creek Fisheries Monitoring Report for 2023 and 2024. If there were no actions for a particular species, that species is not included in this report. The Safford Field Office's Wildlife Biologist position was vacant from February 2023 (the end of a 120 detail of Kayli Farmer) through September 2024 (hiring of Gabrielle Buttermore). Thus, many of the Threatened and Endangered wildlife species regular monitoring efforts were virtually halted during this time. Gabrielle Buttermore will gain the necessary trainings and experience to conduct the B.O.-required Threatened and Endangered wildlife monitoring in 2025 and 2026. Of note,-there are no actions for Jaguar (*Panthera onca*) or Ocelot (*Leoparus pardalis*) in 2024. The trail cameras positioned in Jaguar and Ocelot habitat on HYL and Siphon Canyon allotments had been removed by unauthorized persons prior to November 2024, and thus the data has not been collected by BLM for 2024. However, as of July 29th, 2024, the Safford Field Office has issued a Casual Use letter to a private researcher for these areas, and the researcher will share any incidental jaguar or ocelot sighting data collected with the BLM. The Safford Field Office will be issuing a Research Permit with Sky Island Alliance for camera traps along the United States and Mexico border and will receive data from these traps beginning in calendar year 2025.

If you wish to receive a digital version of any of the tables in Excel spreadsheet format, or if you have questions, please contact Margaret (Peggy) Monkemeier at mmonkemeier@blm.gov or (928, 348-4417,

Heidi Blasius at hblasius@blm.gov or (928) 348-4427, or Shelby Leachet at sleachet@blm.gov or (928) 348-4426.

Sincerely,

Shelby Leachet, Assistant Field Manager

Enclosure

Cc: Sharisse Flatt
BLM Safford Field Office Field Manager
711 S 14th Ave
Safford, AZ 85546

Lance Brady
BLM Gila District Manager
3201 E. Universal Way
Tucson, AZ 85756

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Jaguar (*Panthera onca*)	Endangered	MA-NLAA	1) Jaguars (and ocelots) will not be subject to any predator control activities, by any entity, associated with the project. 2) Permittees will be informed by the Bureau of the status of jaguars (and ocelots) and the specifics of its protection under the Act. 3) All appropriate permits will be obtained prior to any predator control activities associated with the project. 4) Jaguar habitat will be maintained in identified locations. 5) The Bureau will investigate reports of any and all observations of jaguars (and ocelots) or their sign in the project area and will provide the Service with a report of such investigations.	No predator control actions were completed. Permittees were informed by the Bureau of the status of jaguars and the specifics of its protection under the Act. The Bureau did not receive any reports of observations of jaguars or their sign.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Ocelot (*Leopardus pardalis*)	Endangered	MA-NLAA	1) Jaguars (and ocelots) will not be subject to any predator control activities, by any entity, associated with the project. 2) Permittees will be informed by the Bureau of the status of jaguars (and ocelots) and the specifics of its protection under the Act. 3) All appropriate permits will be obtained prior to any predator control actvities associated with the project. 4) Jaguar habitat will be maintained in identified locations. 5) The Bureau will investigate reports of any and all observations of jaguars (and ocelots) or their sign in the project area and will provide the Service with a report of such investigations.	No predator control actions were completed. Permittees were informed by the Bureau of the status of ocelots and the specifics of its protection under the Act. The Bureau did not receive any reports of observations of ocelots or their sign.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	12/9/2024	New Mexico Ridge-nosed Rattlesnake (*Crotalus willardi obscurus*)	Threatened	MA-LAA	1. The BLM will inform permittees and all field personnel who implement any portion of the proposed action in the Ben Snure, Sycamore, and Guadalupe W., AZ allotments of regulations and protective measures as described herein for the New Mexico ridgenosed rattlesnake. All field personnel shall be informed that intentional killing, disturbance, or harassment of threatened or endangered species is a violation of the Act and could result in prosecution. All personnel shall be advised that care should be exercised when operating vehicles in the project area to avoid killing or injuring snakes on roads. 2. The BLM will, at least once a year (preferably at the end of the growing season), monitor New Mexico ridge nosed rattlesnake habitat. Monitoring will focus on vegetative cover and at a minimum will include photographs.2. The BLM will, at least once a year (preferably at the end of the growing season), monitor New Mexico ridge nosed rattlesnake habitat. Monitoring will focus on vegetative cover and at a minimum will include photographs. 3. The BLM will remove livestock grazing from burned areas above 5,000 feet in allotments with NMRR habitat for at least two monsoon seasons following a prescribed or wild fire to facilitate vegetation recovery after prescribed fire.	Monitoring was completed on December 9, 2024 by Gabrielle Buttermore (Wildlife Biologist) and SFO BLM staff at the previously established photo point. Additional searching was conducted along approximately 1/2 mile of ephemeral wash. All data collected, including photos, will be compiled into a report for the Service. The species was included in other NEPA analyses and planning efforts when applicable.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action

2023-0107755	Gila District Livestock Grazing Program Biological Opinion	3/13/2024 - 11/18/2024	Mexican Spotted Owl (*Stix occidentalis caurina*)	Threatened	MA-NLAA	Establish protected activity centers (PACs) for all known MSO pair or nest sites. Continue to reduce impacts of livestock grazing in riparian areas that are or may be MSO habitat.	BLM SFO staff (M. Monkemeier, A. Boline, M. Stewart, C. Herdocia) returned to Tule Spring (32.952142, -110.330995) to search for whitewash, owl pellets, or other sign of MSO. Nesting locations in nearby trees and cliffs were scouted; none were found or seen although two raptor nests were seen on cliff faces. Presence of potential predators in the area and high wind gusts precluded calling for owls. A game camera were placed at the tree by the Tule Spring adit at coordinates above as this location contains water when the streambed is dry, thus may be an important wildlife watering area and possibly could record MSO. This game camera was monitored throughout the year and removed November 18, 2024. No owls were recorded on the camera or seen during any other visits to the area.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	6/21/2024, 7/3/2024, 7/18/2024, 8/1/2024	Western Yellow-Billed Cuckoo (*Coccyzus americanus*)	Threatened	Proposed	(General) Submit an annual monitoring report to the FWS Arizona Ecological Services Field Office on or before February 14. These reports shall briefly summarize for the previous calendar year: 1) implementation and effectiveness of these measures and 2) documentation of incidental take, if any. The report shall also summarize livestock grazing actions on allotments that may affect occupied, suitable and critical habitat for listed species, including: any inventories, monitoring, evaluations, range improvement projects, and known unauthorized livestock use in areas excluded or otherwise closed to grazing that benefit listed species.	WestLand Engineering and Environmental Services completed a season of YBC playback call surveys at Copper Creek to collect data as a mitigation measure conducted prior to completion of an Environmental Assessment for an exploratory mining project by RedHawk Copper Inc. No individuals were detected during the surveys. Survey dates: Period 1 - June 21, 2024; Period 2 - July 3 & 18, 2024; Period 3 - August 1, 2024.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	MA-LAA	Range Improvements: The BLM will locate range improvement projects outside of flycatcher occupied areas, except for fences, cattle guards, and gates needed to exclude or better manage livestock. Within breeding habitat, implement construction, maintenance, or management activities outside of the flycatcher breeding season. Any range improvement project withintwo miles of occupied, suitable or critical habitat, including those proposed to improve flycatcher habitat, will be reviewed by the FWS for compliance with the Biological opinion.	No new range improvements were authorized in flycatcher occupied areas. No construction activities were permitted within suitable or potential breeding habitat during the Southwestern willow flycatcher breeding season.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	MA-LAA	Habitat Management Guidelines: The BLM will implement the following guidelines: a. Livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-September 1). b. Manage suitable flycatcher habitat so that suitable characteristics are not eliminated or degraded. c. Manage riparian areas to allow natural regeneration and, therefore, allow those sites with potential to progress into suitable habitat.	Livestock continue to be excluded from suitable Southwestern willow flycatcher habitat in Gila Box, Aravaipa Canyon, and other riparian-wetland sites. When unauthorized cattle are reported, BLM contacts the owner of the livestock and requests removal. The BLM willl work quickly and practically to repair exclosure fences and notify permittees to repair fences. BLM biologists continue to identify and delineate suitable and occupied habitat throughout the SFO.

2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	MA-LAA	Mapping: The BLM will maintain maps that convey information about flycatcher habitat. These maps will be reassessed as conditions change, (example; fire and floods). Maps will include the following information: a. Location, size, shape, and spacing of habitat areas. b. Habitat stage with respect to flycatchers according to the following classification: suitable occupied, suitable-unoccupied, suitable un-surveyed, potential in the short-term (1 to 3 years), and potential in the long-term (greater than 3 years). Status of flycatcher surveys for each area of suitable habitat: either the date(s) surveyed or indication that the area has not been surveyed.	Maps of potential and Critical habitat are maintained by the BLM biologist and GIS specialist for internal review and consultation with the USFWS. Additionally, IPAC and AGFD reports are used for any ground disturbing activity proposed and where relevant, mitigation measures are implemented.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	MA-LAA	1.a. Establish Baseline condition within 24 months: 1.a.i. Conduct baseline presence / absence monitoring of the Day Mine, Sand Wash, and Tom Springs allotments according to protocol (Sogge et al. 2010) to establish approximate number and location of southwestern willow flycatcher territories in each allotment. 1.a.ii. Establish photo-monitoring array with georeferenced photo points within southwestern willow flycatcher habitat in the Day Mine, Sand Wash, and Tom Springs allotments. 1.a.iii. Implement GIS exercise to evaluate habitat suitability using the U.S. Geological Survey habitat modeling tool (https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=bb61f6e54904490ab1189bae2635224c) to establish baseline acreage of suitable southwestern flycatcher habitat within the Day Mine, Sand Wash, and Tom Springs allotments.	N/A. Baseline condition was not established in 2024, but will be established within 24 months.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	MA-LAA	1.b. Conduct annual monitoring: 1.b.i. At one year mark from initial model review and GIS exercise, implement GIS exercise to evaluate habitat suitability using the U.S. Geological Survey habitat modeling tool (https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=bb61f6e54904490ab1189bae2635224c) to establish baseline acreage of suitable southwestern flycatcher habitat within the Day Mine, Sand Wash, and Tom Springs allotments. If GIS exercise concludes that a >50% reduction of suitable habitat in any of the subject allotments has occurred, proceed to step 1.b.ii. and step 1.b.iii. 1.b.ii. Conduct baseline presence / absence monitoring of the Day Mine, Sand Wash, and Tom Springs allotments according to protocol (Sogge et al. 2010) to determine approximate number and location of southwestern willow flycatcher territories in each allotment. 1.b.iii. Conduct photo monitoring using established photo points referred to in Term and Condition 1.a.ii. above to provide documentation of potential cause of reduction in southwestern willow flycatcher suitable habitat. Possible causes of a reduction in suitable habitat other than grazing may be drought, fire, flooding, or tamarisk leaf beetles. Evidence of these potential causes should be easily distinguishable in person and supported by collected evidence (additional photographs).	N/A. Once baseline condition is established, the annual monitoring and GIS exercise will be completed within the next year.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	MA-LAA	1.c. Provide an annual report, which pertains to the previous calendar year, to us by March 31st each year that documents annual results from the monitoring strategy provided by steps 1.b.i. or if necessary, steps 1.b.i.-1.b.iii. above for the Day Mine, Sand Wash, and Tom Springs allotments.	N/A. Annual report will be completed after steps 1.b.i-ii are completed.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Narrow-headed Gartersnake (*Thamnophis rufipunctatus*)	Threatened	MA-LAA	1. Provide an annual report, which pertains to the previous calendar year, to us by March 31st each year that documents where and when implementation of the proposed action has likely resulted in minimization, reduction, or avoidance of adverse effects, as well as when project implementation has likely resulted in incidental take to narrow-headed gartersnakes or significant adverse effects to occupied or periodically occupied habitat. This will assist us in interpreting long-term trends in project effects and population responses.	N/A. No incidental take to narrow-headed gartersnakes or significant adverse effects to occupied habitat occurred in 2024.

2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Narrow-headed Gartersnake (*Thamnophis rufipunctatus*)	Threatened	MA-LAA	2. The BLM shall educate all permit holders for allotments that may include occupied habitat of regulations and protections for narrow-headed gartersnakes on an annual basis. A fact sheet with photos, originally provided by FWS in electronic format, shall be mass-produced by BLM and given to permit holders with the expectation that permit holders will educate their employees on these species on an annual basis	BLM will send this out to impacted permit holders as soon as USFWS provides a fact sheet.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Northern Mexican Gartersnake (*Thamnophis eques megalops*)	Threatened	MA-LAA	1. Provide an annual report, which pertains to the previous calendar year, to us by March 31st each year that documents where and when implementation of the proposed action has likely resulted in minimization, reduction, or avoidance of adverse effects, as well as when project implementation has likely resulted in incidental take to Northern Mexican gartersnakes or significant adverse effects to occupied or periodically occupied habitat. This will assist us in interpreting long-term trends in project effects and population responses.	N/A. No incidental take to Northern Mexican Gartersnakes or significant adverse effects to occupied habitat occurred in 2024.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Northern Mexican Gartersnake (*Thamnophis eques megalops*)	Threatened		2. Prior to implementing any stockpond management activity (i.e. draining, dredging, (re)lining, etc.) in occupied habitat that could increase the likelihood and amount of incidental take of northern Mexican gartersnakes at any one site, the BLM (or permittee) shall provide notification to our species lead, the Arizona Game and Fish Department species program coordinator, and other conservation partners (as appropriate). Notification shall be given no later than one month prior to project implementation to allow for collaboration on potential effect minimization actions to increase the likelihood of recovery.	N/A. No stockpond management activity involving draining, dredging, relining, etc., occurred in Northern Mexican Gartersnake occupied habitat.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Northern Mexican Gartersnake (Thamnophis eques megalops)	Threatened	MA-LAA	3. The BLM shall educate all permit holders for allotments that may include occupied habitat of regulations and protections for Northern Mexican gartersnakes on an annual basis. A fact sheet with photos, originally provided by FWS in electronic format, shall be mass-produced by BLM and given to permit holders with the expectation that permit holders will educate their employees on these species on an annual basis	BLM will send this out to impacted permit holders as soon as USFWS provides a fact sheet.

Information provided by Margaret Monkemeier, Natural Resource Specialist							
BO / Doc #	NO / Doc Title	Action Date	Species	Status at BO / Doc	Determination	Reasonable & Prudent Measures / Conservation Measures	BLM Action
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Peeble's Navajo Cactus (*Pediocactus peeblesianus ssp. Peeblesianus*)	Endangered	MA-LAA	The BLM will fence additional occupied areas in the Apache Butte Allotment from livestock grazing as continuing surveys identify individuals and populations.	BLM has been in communication with USFWS, AZGFD, and species specialists at the Museum of Northern Arizona to discuss the locations of new fencing within Apache Butte Allotment and the Tanner Wash ACEC as a whole.
2023-0107755	Gila District Livestock Grazing Program Biological Opinion	2024	Peeble's Navajo Cactus (*Pediocactus peeblesianus ssp. Peeblesianus*)	Endangered	MA-LAA	The BLM will conduct surveys before range improvements are constructed, and implement measures needed to avoid harming individual cacti.	N/A. No range improvements were constructed in areas where Peebles Navajo Cactus have been located.

Information provided by Heidi Blasius, Fisheries Biologist									
BO #	Title	Action Date	Species	Conservation Recommendation	BLM Action	USFWS Action	BLM Action	BLM Action	Bonita Creek 2024 Fisheries Monitoring Report Summary
AESO/SE 22410-2007. F-0233	Biological Opinion for the Restoration of Native Fishes in Lower Bonita Creek and Implementation of a Memorandum of Understanding (MOU) and 10-Year Operation Plan Between the Bureau of Land Management (BLM) and the City of Safford.	See specific BLM action for dates.	Gila Topminnow, Desert Pupfish, Loach Minnow, Spikedace, and Gila Chub	1. The Bureau of Reclamation (BOR) and BLM should attempt to work with others on a watershed-level conservation plan for Bonita Creek with the objective of protecting the watershed and preventing introductions of nonnative fishes and other organisms. 2. The BOR and BLM should work with us on developing and implementing a recovery plan for Gila chub. 3. The BOR and BLM should work with us on implementing recovery plans for Gila Topminnow, Desert Pupfish, Loach Minnow and Spikedace. 4. The BOR and BLM should coordinate with the Arizona Game and Fish Department and us to implement an aggressive program to control nonnative aquatic species. 1. Provide an annual report, which pertains to the previous calendar year, to us by March 31st each year that documents information pertaining to project effects and drought status. The following information shall be included: a. Where and when project implementation has likely resulted in significant adverse effects to occupied or periodically occupied habitat. A qualitative and quantitative description including photographs of effects to stream habitat from the previous years' livestock trailing detailing the extent to which trampling, chiseling, or other physical impacts occurred as well as how affected areas have recovered between trailing events. This description must be able to support whether incidental take has occurred and whether Incidental Take limits described in Item 1 under the Incidental Take section above have been exceeded.	1) The BLM cooperates and coordinates with the City of Safford for maintenance activities that may impact species or habitats throughout the year as necessary.	2) The U.S. Fish and Wildlife Service (USFWS) published a draft recovery plan in 2015 for the Gila Chub.	3) The Bureau of Land Management, Safford Field is a member of the Loach Minnow and Spikedace recovery teams.	4) Eighteen removal trips, totaling 47 days, were conducted from April through December 2024. During this period, a total of 1,421 Yellow Bullhead were removed. The breakdown of capture methods is as follows: •Backpack Electrofishing: 789 Yellow Bullhead •Promar Traps: 632 Yellow Bullhead Of the Yellow Bullhead removed: •Adults: 463 (32.58%) •Juveniles: 957 (67.35%) •Unknown Age: 1 (0.07%) Additionally, 14 Yellow Bullhead were removed during annual fish monitoring in April. Of these, five were collected below the fish barrier and nine above. **Recommendations for Bonita Creek**: 1.Continued Yellow Bullhead Removal in 2025: The removal efforts will persist throughout 2025 with multiple monthly removal trips, concentrating initially on the upper reaches of Bonita Creek. These areas currently support fewer Yellow Bullhead compared to the lower reaches. Removal efforts will gradually move downstream as CPUE approaches zero and areas are deemed cleared. 2.Utilize Effective Techniques: Continue using backpack electrofishing and Promar traps as the primary removal techniques. These methods have proven effective, especially considering recent habitat changes due to monsoonal flooding. 3.Community and Stakeholder Engagement: Engage with local communities, stakeholders, and environmental groups to foster support for the removal efforts. Educational initiatives can help raise awareness about the importance of maintaining habitat devoid of nonnative species.	**RESULTS FOR ANNUAL MONITORING 2024** **Backpack Electrofisher Data**: A total of 317 individuals, representing six native fish species, two nonnative fish species, and one arthropod species, were collected during electrofishing. Native fish comprised 90.19% (n=285) and nonnative fish 8.54% (n=27) of the total catch. Additionally, four unidentified young-of-the-year catostomids representing 1.27% of the total catch, were also captured. One Virile Crayfish was caught below the fish barrier. Speckled Dace was the most abundant native fish captured, comprising 37.66% (n=119) of the total catch. This was followed by Longfin Dace at 25.63% (n=81), Sonora Sucker at 12.03% (n=38), Desert Sucker at 10.13% (n=32), and Gila Chub at 4.43% (n=14). The two nonnative fish species were caught below the fish barrier at Serna Cabin, with Fathead Minnow representing 1.27% (n=4) and Green Sunfish representing 7.28% (n=23) of the total catch. Excluding the Serna Cabin monitoring site, 289 individuals representing six native fish species were collected, resulting in a total catch that comprised 100% (n=289) native fish species, as the four unidentified Catostomid fish are either Sonora or Desert Suckers **Promar Collapsible and Gee Metal Minnow Traps Data**: Promar collapsible and Gee metal minnow traps were set overnight (minimum 15 hours per net) in pool habitats at Serna Cabin, Upper Site 1, and Lee Trail, and in pool/glide habitat at Red Knolls. A total of 1,290 fish were collected, of which 68.60% (n=885) were native, 31.32% (n=404) were nonnative, and 0.08% was an unidentified YOY catostomid fish (n=1) (Table 11). Additionally, 13 Sonora Mud Turtles were caught in Promar traps. Gila Chub was the most abundant native fish captured and comprised 47.05% (n=607) of the total catch. Sonora Sucker was the second most abundant native fish at 15.35% (n=198), followed by Desert Sucker at 5.04% (n=65), Longfin Dace at 0.47% (n=6), Speckled Dace at 0.47% (n=6), and Gila Topminnow at 0.23% (n=3). Both the Green Sunfish, the most abundant nonnative species at 27.98% (n=361), and the Channel Catfish comprising 0.23% (n=3), were collected only at Serena Cabin, below the fish barrier. Other nonnative species caught include the Fathead Minnow at 2.02% (n=26) and Yellow Bullhead at 1.09% (n=14). In both electrofishing and trapping efforts, a total of 1,606 individuals were collected; 73.16% (n=1,175) were native, 26.84% (n=431) were nonnative. The five unidentified young-of-year catostomids were either Sonora or Desert Suckers, but they were too small to be assigned to either species. **HABITAT DATA** Mesohabitat data was collected at six monitoring sites (Serna Cabin, Upper Site 1, Lee Trail, Red Knolls, Midnight Canyon, and Reservation Boundary). The primary habitats encountered were pools, glides, riffles, and runs. Glide habitat (41.54%) comprised the majority of mesohabitat across all monitoring sites, followed by pool (36.82%), run (10.22%), and riffle (7.83%) habitats (Table 13). Secondary habitats such as roads, isolated backwaters and seepages comprised 3.59% of all remaining habitats. Pool was the primary
2024 District Grazing BO									Please see: Bonita Creek 2024 Fisheries Monitoring Report that is included in this annual report.

United States Department of the Interior
Bureau of Land Management

Safford Field Office
Safford, AZ

Bonita Creek Fisheries Monitoring Report, 2024

JANUARY 28, 2025

SUGGESTED CITATION
U. S. BUREAU OF LAND MANAGEMENT. 2024. Bonita Creek Fisheries Monitoring Report, 2024. United States Department of Interior, Bureau of Land Management, Safford Field Office, Safford, Arizona. Pp 32.

ACKNOWLEDGEMENTS
Participants involved in the 2024 Bonita Creek native fish monitoring include Jeff Conn and Dr. Lanie Galland, volunteers. Report was written by Malissa Abraham, Finley Lindsey, Anna Winfrey, and Heidi Blasius. This work was authorized by permits issued by Arizona Game and Fish Department and US Fish and Wildlife Service. Cover photo of a desert sucker.

Introduction

In 2008, as part of a multi-agency native fish restoration project, the Bureau of Reclamation (BOR), through the Gila River Basin Native Fishes Conservation Program, constructed a fish barrier across lower Bonita Creek to prevent the upstream incursion of nonnative aquatic species from the Gila River into Bonita Creek (Figure 1). The barrier protects the extant fish fauna including endangered Gila Chub (*Gila intermedia*), Longfin Dace (*Agosia chrysogaster*), Speckled Dace (*Rhinichthys osculus*), Sonora Sucker (*Catostomus insignis*), and Desert Sucker (*Pantosteus clarkii*). Additionally, the reach of Bonita Creek between the City of Safford infiltration gallery dike and the fish barrier was chemically renovated with the piscicide rotenone to eliminate nonnative fishes. Following the renovation, the extant fish fauna was returned to the stream and Loach Minnow (*Tiaroga cobitis)*, Spikedace (*Meda fulgida*), Desert Pupfish (*Cyprinodon macularius*), and Gila Topminnow (*Poeciliopsis occidentalis*) were translocated into suitable habitats within the renovated reach in 2008 (Robinson, *et. al*., 2009) and upstream reaches in 2009 and beyond (Table 1).

Shortly after the chemical treatment, nonnative fishes, including Western Mosquitofish (*Gambusia affinis*) and Green Sunfish (*Lepomis cyanellus*) in 2009, Fathead Minnow (*Pimephales promelas*) in 2010, and Yellow Bullhead (*Ameiurus natalis*) in 2011 were discovered in the renovated reach. With this discovery, mechanical removal began in 2009 with the goal of eradication due to the deleterious impacts of the nonnative fish species on the native fish community. With the success of mechanical removal, nonnative fish numbers will be reduced, allowing native fish to successfully reproduce and recruit.

Monitoring is conducted annually to detect the presence, absence, distribution, and relative abundance over time of the extant and translocated fishes. It is also used to identify factors that influence assemblage dynamics and to detect any new invasion of nonnative fishes.

This report summarizes the results of the Bonita Creek native fish monitoring conducted on April 22-25, 27-28, 30; and May 1, and 8, 2024.

Project Area

Bonita Creek is a tributary to the Gila River, located northeast of Safford, Arizona. Bonita Creek originates in the Gila Mountains on the San Carlos Apache Indian Reservation. It flows southeasterly from its headwaters approximately 46 miles to its confluence with the Gila River (Figure 1). The Bonita Creek watershed drains approximately 370 square miles and spans across a mixture of federal, city, tribal, and private lands. From the reservation boundary downstream, the Bureau of Land Management (BLM) manages approximately 92% of the lands and the remaining 8% are City of Safford and private holdings. There are five springs located within the basin. Tule Spring is the largest and is located on the Reservation. The other four, Cottonwood, Lion, Hackberry, and Farrell, are minor springs (measured discharge of 1-10 gallons per minute) located on BLM lands. All springs located on BLM-managed lands are developed for livestock

use and are negatively affected by water extraction. Stream flow in Bonita Creek is chiefly intermittent with only the lower 15 miles mostly perennial. Within the perennial section, continuous surface flows may not always be present below the City of Safford's infiltration gallery, particularly when water system wells are pumped to supplement creek withdrawals during times of increased water demand. The current drought, compounded by the lack of winter snow and rainfall in the watershed, significantly impacts Bonita Creek's surface flows. Additionally, the tributaries draining into Bonita Creek contribute only ephemeral flows.

Five miles above the mouth of Bonita Creek lies the City of Safford's infiltration gallery dike. The dike connects to a 24-mile-long pipeline that transports water across the Gila River Valley for public use in Solomon, Safford, and Thatcher. The infiltration gallery grade-control dike effectively separates Bonita Creek into lower and upper reaches, acting as a quasi-barrier to prevent nonnative fish migration upstream.

After barrier construction, water became impounded behind the barrier due to a lack of fill material for the backfilling of the stream channel, creating ideal habitats for nonnative fishes. The threat from the impoundment was believed to have been eliminated in 2011 as the water was drawn down and material was brought in to fill the depression to prevent future ponding during normal flow periods. However, pooling has continued to be a threat leading to the breaching of beaver dams, resulting in the installation of Clemson beaver pond levelers with temporary results. In March 2021, the BOR completed barrier maintenance to eliminate the pooling from beaver dams directly above and below the fish barrier because Green Sunfish were seen multiple times attempting to jump above the barrier. Additional vegetation including small trees, cattails, and sedges, along with woody debris, were removed. To further safeguard the native fishery, the BOR installed a grate adjacent to the barrier that prevents fish from jumping upstream (Figure 2). Annual or bi-annual maintenance is required to prevent pooling above and below the barrier.

Methods - Monitoring Protocol

Seven fixed 200-meter (m) monitoring sites were established in Bonita Creek in 2005 based on access and habitat type. The sites selected support riffle, pool, and run mesohabitats. Three sites were established below the infiltration gallery dike and four above. Sites below the infiltration gallery include Serna Cabin, Upper Site 1, and the Gallery. The Serna Cabin site is downstream of the barrier and typically goes dry except for a few pools associated with the west bank. Upper Site 1 and the Gallery are located within the renovated reach and experience drying due to water withdrawal by the City of Safford. The Gallery was dry at the time of monitoring efforts. Sites above the infiltration gallery include Lee Trail, Red Knolls, Midnight Canyon, and Reservation Boundary (Figure 1).

A variety of gear types, including backpack electrofishers (Smith Root model LR24), Gee metal minnow traps (25-centimeter (cm) diameter, 47 cm long, double throat, 0.3 or 0.6 cm mesh), collapsible Promar® traps (0.3 m diameter, 0.9 m long, double throat, 0.9 cm mesh and 0.46 m

long x 0.3 m wide, with 0.6 cm mesh), seines (10 feet (ft) x 6ft, 1/8inch mesh), and dip-nets were used to optimize removal efforts. Multiple gear types are required to effectively sample the complex habitat, including deep pools, undercut banks, and woody debris piles. Backpack electrofishing used in conjunction with dip-nets or seines ("block and shock") was used in shallow pool (<3 ft deep), run, and riffle habitats. Deep pools (>3 ft deep) were sampled with Gee metal minnow and collapsible Promar® traps. All traps were baited with wet or dry dog food to attract fish and increase catch. Traps were set with air pockets to prevent non-targeted animals from drowning, and the rope ties were sprayed with animal repellent to deter wildlife. Time of deployment and retrieval of traps was recorded, but effort was summarized as trap sets regardless of the actual time fished.

The time of deployment and retrieval of traps was recorded, but the effort was summarized as trap sets regardless of the actual time fished. All monitoring sites were delineated into mesohabitat types (i.e., run, riffle, pool, etc.) and surveyed separately.

Captured fish were held in buckets with aerators until processed. If there was an abundance of fish or multiple larger species, fish were processed immediately. Otherwise, processing occurred after sampling the selected habitat. Fish were recorded by species and size class. Total length (TL) measurements in millimeters (mm) were recorded for all except for Gila Topminnow and Western Mosquitofish. After measuring one hundred of each species, subsequent fish were categorized by size class as juvenile or adult (Table 2). Fish too small to identify were classified as young-of-year (YOY). Once processed, native fish were returned to the water immediately at or near the point of capture. All nonnative species were euthanized with tricane methanesulfonate (MS-222).

At each monitoring site, the following were recorded: stream name, site name, GPS location, date, time, participants, effort, species of fish captured, length of fish, comments (if any), and gear type. For backpack electrofishing, the gear settings and seconds shocked were recorded, whereas traps included gear dimensions, and the date and time the traps were set and pulled. In addition, the water temperature in Celsius (ºC), pH, conductivity in microsiemens (µS), dissolved oxygen in milligrams per liter (mg/L), and turbidity in Nephelometric Turbidity Units (NTU) were collected.

The American Fisheries Society (AFS) macrohabitat classification (Arend, 1999) was used to identify primary mesohabitats (*i.e.*, pools, riffles, and glides) for quantification at each monitoring site. Pebble counts following Wolman (1954) were used to characterize streambed materials at all permanent monitoring sites. The Wolman technique requires the observer to measure the sizes of random particles using a gravelometer. The gravelometer is more accurate than a ruler, avoids bias for irregular particles, and meets USGS standards. A minimum of 100 measurements are taken to accurately quantify pebble distributions by walking upstream in a zig-zag pattern. Pebble sizes were delimited into 16 size classes (mm) and included: 2, 2.8, 4, 5.6, 8, 11, 16, 22.6, 32, 45, 64, 90, 128, 180, >180, and >256. The first 14 size classes, 2-180mm, are

common sieve sizes. Two additional size classes (>180 and >256) were added to capture larger particles encountered adequately. Particle sizes were then grouped into substrate types (Table 3).

Wet-Dry Mapping 2024

Wet-dry mapping was conducted in June 2024 to map and identify the extent of water present in Bonita Creek and possible causes. The results are displayed in Figure 3.

Results for Annual Monitoring 2024

Backpack Electrofisher Data

A total of 317 individuals, representing six native fish species, two nonnative fish species, and one arthropod species, were collected during electrofishing (Table 4). Native fish comprised 90.19% (n=285) and nonnative fish 8.54% (n=27) of the total catch. Additionally, four unidentified young-of-the-year catostomids representing 1.27% of the total catch, were also captured. One Virile Crayfish was caught below the fish barrier. Speckled Dace was the most abundant native fish captured, comprising 37.66% (n=119) of the total catch. This was followed by Longfin Dace at 25.63% (n=81), Sonora Sucker at 12.03% (n=38), Desert Sucker at 10.13% (n=32), and Gila Chub at 4.43% (n=14). The two nonnative fish species were caught below the fish barrier at Serna Cabin, with Fathead Minnow representing 1.27% (n=4) and Green Sunfish representing 7.28% (n=23) of the total catch. Excluding the Serna Cabin monitoring site, 289 individuals representing six native fish species were collected, resulting in a total catch that comprised 100% (n=289) native fish species, as the four unidentified Catostomid fish are either Sonora or Desert Suckers. Tables 5-10 summarize the backpack electrofisher data from each site.

Promar Collapsible and Gee Metal Minnow Traps Data

Promar collapsible and Gee metal minnow traps were set overnight (minimum 15 hours per net) in pool habitats at Serna Cabin, Upper Site 1, and Lee Trail, and in pool/glide habitat at Red Knolls. A total of 1,290 fish were collected, of which 68.60% (n=885) were native, 31.32% (n=404) were nonnative, and 0.08% was an unidentified YOY catostomid fish (n=1) (Table 11). Additionally, 13 Sonora Mud Turtles were caught in Promar traps. Gila Chub was the most abundant native fish captured and comprised 47.05% (n=607) of the total catch. Sonora Sucker was the second most abundant native fish at 15.35% (n=198), followed by Desert Sucker at 5.04% (n=65), Longfin Dace at 0.47% (n=6), Speckled Dace at 0.47% (n=6), and Gila Topminnow at 0.23% (n=3). Both the Green Sunfish, the most abundant nonnative species at 27.98% (n=361), and the Channel Catfish comprising 0.23% (n=3), were collected only at Serena Cabin, below the fish barrier. Other nonnative species caught include the Fathead Minnow at 2.02% (n=26) and Yellow Bullhead at 1.09% (n=14). The number of native and nonnative individuals captured (#), mean catch-per-unit effort (#/h for traps), and standard error (SE) of the mean are presented in Table 12.

In both electrofishing and trapping efforts, a total of 1,606 individuals were collected; 73.16% (n=1,175) were native, 26.84% (n=431) were nonnative. The five unidentified young-of-year catostomids were either Sonora or Desert Suckers, but they were too small to be assigned to either species.

Habitat Data

Mesohabitat data was collected at six monitoring sites (Serna Cabin, Upper Site 1, Lee Trail, Red Knolls, Midnight Canyon, and Reservation Boundary). The primary habitats encountered were pools, glides, riffles, and runs. Glide habitat (41.54%) comprised the majority of mesohabitat across all monitoring sites, followed by pool (36.82%), run (10.22%), and riffle (7.83%) habitats (Table 13). Secondary habitats such as roads, isolated backwaters and seepages comprised 3.59% of all remaining habitats. Pool was the primary habitat encountered at Serna Cabin (76.62%), Upper Site 1 (59.44%), and Lee Trail (54.36%). Glide was the primary habitat at Red Knolls (60.21%), Midnight Canyon (47.12%) and Reservation Boundary (65.33%).

When gear types are combined, most native fishes were captured in pools (n=890), followed by run (n=102), riffle (n=98), glide (n=77), road (n=3), and isolated backwater (n=1) habitats. All nonnative fishes (n=431) were found in pool habitats. Three unidentified YOY catostomids were collected in glide habitats, one was collected in a pool and the other in a run habitat (Table 20).

Gravel was the dominant substrate encountered at Upper Site 1 (51.92%), Lee Trail (45.11%), and Midnight Canyon (54.12%). Gravel and cobble were equally dominant at Serna cabin, with 41.16% habitat composition for each substrate. Sand, silt, and clay were the dominant substrates at Red Knolls (77.27%). The dominance of silt and clay contributes to habitat marginalization at this site. If all sites are combined, gravel was the dominant substrate at 39.93%, followed by cobble at 30.14%, sand, silt, and clay at 26.95%, and boulder at 2.72% (Table 21).

Discussion

Native Fish Recovery Efforts

One of the key components of the Bonita Creek native fish restoration project was to establish self-sustaining populations of Loach Minnow, Spikedace, Gila Topminnow, and Desert Pupfish. Of the four endangered fish species translocated to Bonita Creek in 2008, only Gila Topminnow established a population. Gila Topminnow dispersed both upstream and downstream of their stocking location and in certain reaches, they numbered in the hundreds in 2009 (Boyarski *et al.*, 2011) and 2010 (Blasius and Conn, 2010). However, their numbers have decreased drastically since that time, likely tied to the spread and establishment of nonnative fish species, specifically the Western Mosquitofish. Limited suitable habitat, predation, and competition from nonnative fishes likely affected the establishment of the other three endangered fish species in the renovated reach.

The dewatering of lower Bonita Creek from the infiltration gallery, pipeline access, beaver dam removal, drought, and heavy recreational use has resulted in significant alteration to both the aquatic and riparian habitats. There are areas of significant drying throughout Bonita Creek, as illustrated by Figure 3. Severe drying was observed between sections 2-3, 4-5, 5-6, and 6-7 above the fish dam after pumping occurred continuously for two weeks. Observed damages were dead native and nonnative fish scattered throughout dry sections, and isolated pools with trapped native fish (Figures 4 and 5). This reduction in available habitat significantly contributes to the decline of resident native fish populations and hinders the establishment of translocated populations.

Summaries for each translocation site (*i.e.*, Lee Trail, Red Knolls, Midnight Canyon, and Reservation Boundary) for Loach Minnow, Spikedace, Gila Topminnow, and Desert Pupfish are provided below.

Lee Trail: In 2010, 834 Gila Topminnow and 264 Desert Pupfish were translocated to Lee Trail. Monitoring in 2010 and 2011 failed to detect either species. Gila Topminnow collections over the years were as follows:

- 2012: 168
- 2013: 96
- 2014: 48
- 2015: 30
- 2016: 14
- 2017: 2
- 2018: 16
- 2019: 3
- 2020: 90
- 2021: 22
- 2022: 0
- 2023: 0
- 2024: 0

Despite inconsistent yearly captures, hundreds of Gila Topminnow were observed at this site during annual monitoring. The reasons for the Desert Pupfish's failure to establish at this location remain unknown.

From 2012 to 2024, pool and glide habitats were the primary mesohabitats at Lee Trail. In 2023, a reduction in beaver activity led to a loss of pool habitat, making run and glide habitats more dominant.

Red Knolls: In 2011, 1,972 Gila Topminnow and 336 Desert Pupfish were translocated to Red Knolls to establish new populations. Monitoring in 2012 failed to capture any Gila Topminnow, although several were observed. Gila Topminnow collections over the years were as follows:

- 2013: 3
- 2014: 1
- 2015: 0
- 2016: 0
- 2017: 10
- 2018: 13
- 2019: 44
- 2020: 29

- 2021: 0
- 2022: 22
- 2023: 0
- 2024: 4

Despite not being collected every year, hundreds of Gila Topminnow have been observed upstream of the Red Knolls monitoring site, indicating a robust population.

Desert Pupfish, on the other hand, did not fare as well. One individual was collected in 2012 and another in 2013, but none have been collected since. The reasons for the failure of Desert Pupfish to establish at this location remain unknown. Similarly, translocations of Spikedace in 2009 and 2010, and Loach Minnow in 2010, likely failed due to limited suitable habitat.

From 2012 to 2023, the habitat at Red Knolls has predominantly consisted of pools, providing suitable conditions for Gila Topminnow. However, upstream pumping for livestock in the uplands is causing water levels to drop, resulting in substantial drying and cattail encroachment resulting in the habitat transitioning from pool to glide habitat. Additionally, unauthorized livestock use has reduced the presence of willows and other herbaceous and woody vegetation. This reduction may limit food and dam-building materials for beavers, leading them to abandon their dams and move to new areas.

Midnight Canyon: In 2014, 288 Loach Minnow were translocated approximately 150 meters downstream of the Midnight Canyon fish monitoring site and in 2020, an additional 472 Loach Minnow were translocated to four sites within and adjacent to the Midnight Canyon fish monitoring site. Loach Minnow collections over the years were as follows:

- 2015: 7
- 2016: 2
- 2017: 0
- 2018: 0
- 2019: 0
- 2020: 5
- 2021: 1
- 2022: 0
- 2023: 0
- 2024: 0

In 2014, 385 Gila Topminnow were translocated into a beaver dam pool in the upper portion of the Midnight Canyon monitoring site. However, a flood in 2016 eliminated this pool. Gila Topminnow collections over the years were as follows:

- 2015: 5
- 2016: 18
- 2017: 3
- 2018: 0
- 2019: 5
- 2020: 11
- 2021: 22
- 2022: 0
- 2023: 0
- 2024: 0

Surveys conducted by the Arizona Game and Fish Department (AGFD) on October 15, 2018, captured 338 Gila Topminnow in minnow traps and 149 by electrofishing.

Over the years, the habitat at Midnight Canyon has experienced significant transitions. From 2011 to 2013 and in 2022, the area was predominantly dominated by riffle habitat. This changed between 2014 and 2021, as well as in 2023, when the habitat shifted to being primarily run habitat, featuring deeper, moderate-flow water with smoother, less turbulent conditions. In 2024, the habitat was predominantly glide and riffle habitats, with smooth, slow-moving water interspersed with shallow, fast-moving sections.

Although the monitoring site contains suitable habitat for Loach Minnow, its extent is extremely limited and varies due to the presence of beaver dams, whose locations change over time and with flooding.

Reservation Boundary: In 2014, 680 Desert Pupfish and 663 Gila Topminnow were translocated near the Reservation Boundary monitoring site. Monitoring by AGFD in 2015 failed to detect either species, prompting additional translocations into separate pool habitats on November 10, 2015 (Table 1). Monitoring in 2016 resulted in the capture of 31 Gila Topminnow in the stocked pool, but no Desert Pupfish were collected. Flooding in 2016 eliminated these habitats.

On September 26, 2017, AGFD surveyed downstream from their 2015 translocation site and captured 289 Gila Topminnow. In 2018, AGFD collected 95 Gila Topminnow in minnow traps and an additional 64 in dipnet sweeps at their monitoring site on October 15. Additionally, 38 Gila Topminnow were collected at the BLM permanent monitoring site, which is upstream from AGFD's 2015 translocation site.

In 2019, the BLM permanent monitoring site was dry due to the creek switching course. As a result, a temporary 100-meter monitoring site was established that year, but no Gila Topminnow were captured.

In 2020, a new permanent monitoring site was selected, and three Gila Topminnow were captured. The following year, seven Gila Topminnow were captured, and dozens were observed swimming. This trend continued in 2022 with the capture of twenty-three Gila Topminnow, accompanied by many more sightings.

In 2023, no Gila Topminnow were collected due to the monitoring site being dry, with severe drying upstream and downstream. A temporary 100-meter monitoring site supported very few fish, likely because it was just being recolonized after being dry.

In 2024, the monitoring site that had dried in 2023 contained water once again. A 100-meter stream segment was monitored, but no Gila Topminnow were collected.

The Reservation Boundary monitoring site has been relocated multiple times since 2011 due to drought-induced drying, changes in streamflow direction, and possibly other unknown factors. From 2011 to 2017, in 2022, and again in 2024, glide habitat was dominant at various

Reservation Boundary sites. However, run habitat was primary in 2018, 2021, and 2023, while riffle habitat dominated in 2019. In 2020, both riffle and run habitats were dominant.

Mesohabitat Data Collection and Analysis

The collection of mesohabitat data began in 2011 to evaluate aquatic habitats, understand their relationship to captured species, and better comprehend the lack of establishment of translocated species. Mesohabitat varies widely by site and time of year, particularly in the lower three monitoring sites (Serna Cabin, Upper Site 1, and Gallery), and is strongly influenced by the City of Safford's water withdrawals.

The habitat sampled from 2023 to 2024 saw a 19.09% decrease from 1374.6 meters in 2023 to 1112.2 meters in 2024. This reduction is due to the Gallery site being dry and the Reservation site only having 100 meters sampled due to drying.

During this period, pool habitats decreased by 29.34%, while riffle habitats increased by 2133.33% (*i.e.,* 83.2 meters). Glide habitats also increased by 44.38% and run habitats decreased by 72.48%.

When examining long-term trends from 2011 to 2024, pool habitats increased by 33.17% and riffle and glide habitats decreased by 77.48% and 27.44%, respectively. Run habitats increased by 12.80% since 2013.

The number of fish captured by electrofishing has been highly variable between years, with the highest number captured (n=1,415) in 2011 and the lowest (n=304) in 2023. Additionally, the effort in shocking seconds by year has varied, with 15,689 backpack electrofishing seconds expended in 2018 and 5,003 in 2024 (Table 23). However, using catch per unit effort (CPUE) as determined by one-way ANOVA ($F(13, 80) = 1.31$, $p = 0.23$), no statistically significant differences were found between years (2011-2024).

Similarly, the number of fish captured by traps from 2011 to 2024 has been variable, with the lowest number of fish (n=284) captured in 2011 and the highest (n=3,088) in 2021 (Table 24). Effort in trap nights also varied by year, with a low of 50 traps in 2011 and a high of 260 traps in 2021. Like backpack electrofishing, Gee minnow trap catch per unit effort ($F(13, 36) = 0.84$, $p = 0.60$) and Promar minnow trap catch per unit effort ($F(13, 36) = 1.11$, $p = 0.38$) showed no statistically significant differences between years.

Nonnative Aquatic Species

It is unknown if the nonnative fish species (*i.e.,* Western Mosquitofish, Green Sunfish, and Yellow Bullhead) that were detected above the barrier in the renovated reach were intentional, accidental human-aided releases, or were already in the renovated reach. Fathead Minnow likely washed downstream during monsoonal flooding as they are present in upper Bonita Creek.

Unpublished data indicates mechanical removal has been effective due to the eradication of Green Sunfish in Bonita Creek. Additionally, eDNA results are negative for Green Sunfish further supporting their removal. Suppression of the other nonnative species is allowing reproduction and recruitment in the two pool fishes Gila Chub and Sonora Sucker. Lack of habitat diversity is likely a causal factor in low numbers of Longfin Dace and Speckled Dace and likely the main reason Loach Minnow and Spikedace failed to persist in Bonita Creek.

In December 2013, nonnative northern crayfish (*Orconectes virilis*), were detected above the barrier during nonnative fish removal. They are present below the barrier and in the Gila River, although they are not abundant in either location. It is unknown at this time whether they will establish a population in Bonita Creek. All crayfish are removed when encountered.

Anchor worm (*Lernaea cyprinacea*) is a deleterious fish ecto-parasite, which has become widely distributed throughout the world presumably through the introduction of various aquatic organisms into new localities (McAllister, *et. al*., 2011). Anchor worm is commonly found on Gila Chub below the City of Safford infiltration gallery but was absent above the infiltration gallery until it was discovered on fish at Lee Trail in March 2012 (Blasius and Conn, 2011). Low levels of Lernaea infestation are usually not life-threatening, however, heavy infestations may cause severe stress in the host fish, with the area of attachment usually the site of hemorrhages and muscle necrosis (Piasecki *et al*., 2004). These areas of inflammation are then susceptible to secondary bacterial and/or fungal infections. Parasitism by Lernaea is generally a problem in aquaculture facilities and in the aquarium trade (Shariff and Roberts 1989), where infestation can be potentially lethal or pathogenic when secondary microbial infections occur at the sites of lesions. Parasitism by Lernaea can, however, also be a conservation concern because of its negative effects on native fish (Durham *et al.,* 2002; Bond, 2004; Hoffnagle *et al.,* 2006) and amphibians (Ming, 2001 and Kupferberg, 2009) when it becomes established in the wild.

REFERENCES

Arend, K. K. 1999. Macrohabitat identification. Aquatic habitat assessment: common methods. American Fisheries Society, Bethesda, Maryland.

Blasius, H. B., and J. A. Conn. 2010. Bonita Creek 2010 Monitoring Report, 2010. Bureau of Land Management, Safford, Arizona. 14pp.

Blasius, H. B., and J. A. Conn. 2011. Bonita Creek Monitoring and Stocking Report, 2011. Bureau of Land Management, Safford, Arizona. 19pp.

Bond, N. R. 2004. Observations on the effects of the introduced parasite Lernaea cyprinacea on a lowland population of a small native Australian fish, Mountain Galaxias (Galaxia olidus). Victorian Naturalist 121:194–198

Boyarski, D. E., A. T. Robinson, and C. D. Crowder. 2011. Repatriation of native fishes to Bonita Creek: annual summary of monitoring and stocking during 2009. Arizona Game and Fish Department, Phoenix.

Durham, B. W., T. H. Bonner, and G. R. Wilde. 2002. Occurrence of Lernaea cyprinacea on Arkansas River Shiners and Peppered Chubs in the Canadian River, New Mexico, and Texas. Southwestern Naturalist 47:95–98.

Hoffnagle, T. L., A. Choudhury, and R. A. Cole. 2006. Parasitism and body condition in

Humpback Chub from the Colorado and Little Colorado rivers, Grand Canyon, Arizona. Journal of Aquatic Animal Health 18:184–193.

Kupferberg, S. J., A. Catenazzi, K. Lunde, A. Lind, and W. Palen (2009) Parasitic Copepod (Lernaea cyprinacea) Outbreaks in Foothill Yellow-legged Frogs (Rana boylii) Linked to Unusually Warm Summers and Amphibian Malformations in Northern California. Copeia 2009 (3): 529-537.

McAllister, C. T., C. R. Bursey, S. D. Martin. 2011. Lernaea cyprinacea (Crustacea: Copepoda: Lernaeidae) Anchorworms from two larval aquatic insects (Ephemeroptera: Baetidae, Trichoptera: Hydropsychidae) in Northeastern Oklahoma.

Ming, L. T. 2001. Parasitic copepods responsible for limb abnormalities? Froglog 46:3. Piasecki, W., A. E. Goodwin, J. C. Eiras, and B. F. Nowak. 2004. Importance of Copepoda in Freshwater Aquaculture. Zoological Studies 43(2): 193-205.

Robinson, A. T., C. Carter, D. Ward, and H. Blasius. 2009. Bonita Creek native fish restoration: native aquatic species salvage, chemical renovation, and repatriation of native aquatic species. Arizona Game and Fish Department, Phoenix.

Shariff M., and R.J. Roberts. 1989. The experimental histopathology of Lernaea polymorpha Yu, 1938 infection in naive Aristichthys nobilis (Richardson) a comparison with the lesion in naturally infected clinically resistant fish. Journal of Fish Disease 12(5): 405-414.

Wolman, M.G., 1954. A Method of Sampling Coarse River-Bed Material. Transactions of the American Geophysical Union 35(6):951-956.

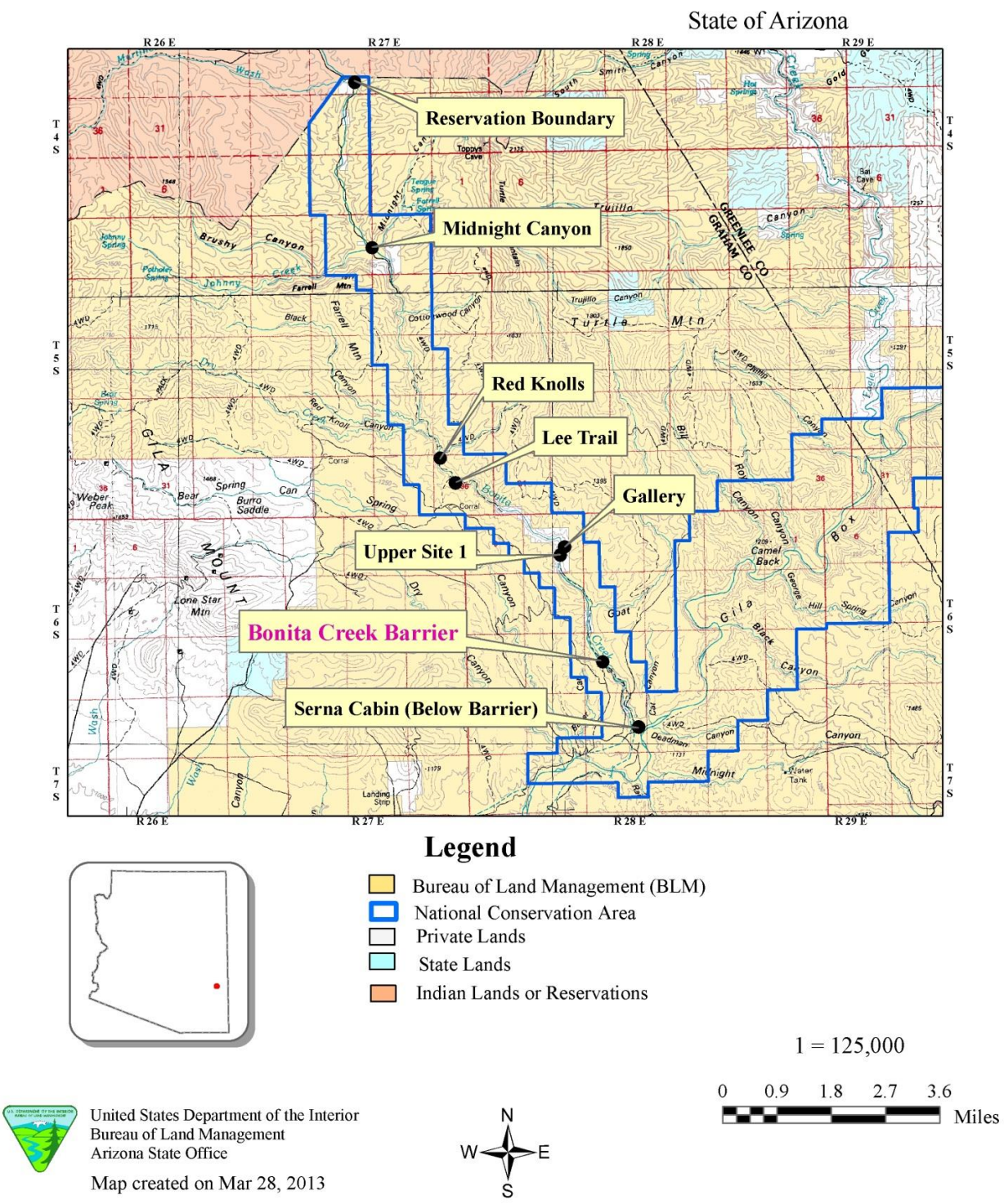

Figure 1. Map showing the locations of the seven monitoring sites and fish barrier.

Figure 2. Bonita Creek fish grate that prevents nonnative fish from moving above the fish barrier.

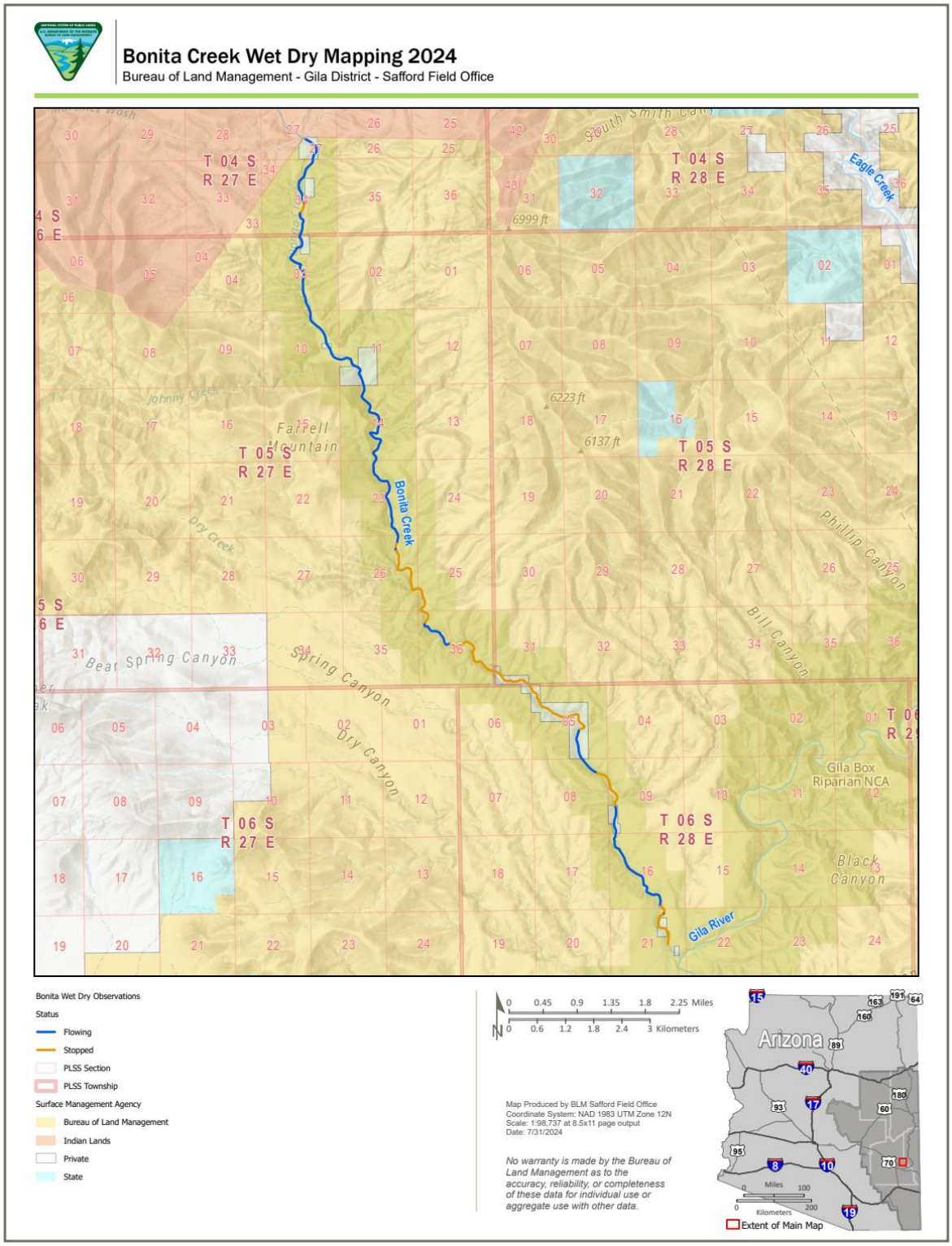

Figure 3. Map showing the wet and dry regions of Bonita Creek in June 2024.


Figures 4 and 5. The dewatering of Bonita Creek dried sections of the creek causing mortality in Gila Chub and other aquatic species.

Table 1. Native fish translocations into Bonita Creek, Graham County, Arizona from 2008 through 2020.

Location	Year	Number and Species Stocked	Lineage	Origin of fish (Donor site)
Treatment reach, between road crossings 13 and 14	2008	687 Loach Minnow	Blue River	ARCC
		448 Spikedace	Upper Gila River	ARCC
Treatment reach, between road crossings 13 and 14	2008	147 Desert Pupfish	El Doctor Marsh	TNC-LSPRP
Treatment reach, between road crossings 2 and 3	2008	975 Gila Topminnow	Bylas Spring	TNC-LSPRP
Red Knolls Crossing	2009	165 Spikedace	Upper Gila River	ARCC
Lee Trail	2010	264 Desert Pupfish	El Doctor Marsh	TNC-LSPRP
		834 Gila Topminnow	Bylas Spring	TNC-LSPRP
Red Knolls Crossing	2010	156 Loach Minnow	Blue River	ARCC
		567 Spikedace	Upper Gila River	ARCC
Red Knolls Crossing	2011	1,972 Gila Topminnow	Bylas Spring	TNC-LSPRP
		336 Desert Pupfish	El Doctor Marsh	TNC-LSPRP
Midnight Canyon	2014	288 Loach Minnow	Blue River	ARCC
		385 Gila Topminnow	Bylas Spring	TNC-LSPRP
Reservation Boundary	2014	680 Desert Pupfish	El Doctor Marsh	TNC-LSPRP
		663 Gila Topminnow	Bylas Spring	TNC-LSPRP
Reservation Boundary	2015	343 Desert Pupfish	El Doctor Marsh	TNC-LSPRP
		998 Gila Topminnow	Bylas Spring	TNC-LSPRP
Midnight Canyon	2020	472 Loach Minnow	Blue River	ARCC

Table 2. Native fish size classes used during monitoring to differentiate putative juvenile fish (small) from putative adult fish (large). Fish measurements are total length (TL) in millimeters (mm).

Fish Species	Size Class	
	Small	Large
Longfin Dace	<45	≥45
Gila Chub	<90	≥90
Speckled Dace	<45	≥45
Sonora Sucker	<150	≥150
Desert Sucker	<125	≥125
Loach Minnow	<38	≥38
Spikedace	<45	≥45
Gila Topminnow	<20	≥20
Desert Pupfish	<20	≥20

Table 3. Wolman's classification of stream substrate by particle size.

Substrate Name	Size Classes (mm)
Sand, silt, clay	≤ 2
Very Fine Gravel	2-4
Fine Gravel	4-8
Medium Gravel	8-16
Coarse Gravel	16-32
Very Coarse Gravel	32-64
Small Cobble	64-90
Medium Cobble	90-128
Large Cobble	128-180
Very Large Cobble	180-256
Boulder	≥256

Table 4. Fishes captured from Bonita Creek, Arizona, April 27-28; and May 8, 2024, by electrofishing. Data represents number of individuals for each species at a site, total number across all sites and proportion for each species across sites, and total catch for each site for backpack electrofishing. Native fish species are indicated with an asterisk (*).

Species	Serna Cabin	Upper Site 1	Lee Trail	Red Knolls	Midnight Canyon	Reservation Boundary	Total	Percent Total
*Gila Chub			2		11	1	14	4.43%
*Longfin Dace			2	2	11	66	81	25.63%
*Gila Topminnow				1			1	0.32%
*Speckled Dace			23	1	76	19	119	37.66%
*Sonora Sucker		7	10		19	2	38	12.03%
*Desert Sucker				1	25	6	32	10.13%
*YOY Catostomid			2		2		4	1.27%
Fathead Minnow	4						4	1.27%
Green Sunfish	23						23	7.28%
# Native Species	0	7	39	5	144	94	285	90.19%
# Nonnative Species	27	0	0	0	0	0	27	8.54%
Total Fish	27	7	39	5	144	94	316	100.00%
Virile Crayfish	1						1	

Table 5. Summary of fishes sampled by backpack electrofisher at Serna Cabin, 2024.

Species	Number	CPUE (fish/20.92 min)	% of total
Fathead Minnow	4	0.19	14.81
Green Sunfish	23	1.10	85.19
Total	27	1.29	100.00

Table 6. Summary of fishes sampled by backpack electrofisher at Upper Site 1, 2024.

Species	Number	CPUE (fish/8.27 min)	% of total
Sonora Sucker	7	0.85	100.00
Total	7	0.85	100.00

Table 7. Summary of fishes sampled by backpack electrofisher at Lee Trail, 2024.

Species	Number	CPUE (fish/12.30 min)	% of total
Longfin Dace	2	0.16	5.13
Speckled Dace	23	1.87	58.97
Gila Chub	2	0.16	5.13
Sonora Sucker	10	0.81	25.64
YOY Catostomid	2	0.16	5.13
Total	39	3.17	100.00

Table 8. Summary of fishes sampled by backpack electrofisher at Red Knolls, 2024.

Species	Number	CPUE (fish/7.70 min)	% of total
Longfin Dace	2	0.26	40.00
Speckled Dace	1	0.13	20.00
Gila Topminnow	1	0.13	20.00
Desert Sucker	1	0.13	20.00
Total	5	0.65	100.00

Table 9. Summary of fishes sampled by backpack electrofisher at Midnight Canyon, 2024.

Species	Number	CPUE (fish/21.85 min)	% of total
Gila Chub	11	0.50	7.64
Longfin Dace	11	0.50	7.64
Speckled Dace	76	3.48	52.78
Sonora Sucker	19	0.87	13.19
Desert Sucker	25	1.14	17.36
YOY Catostomid	2	0.09	1.39
Total	144	6.59	100.00

Table 10. Summary of fishes sampled by backpack electrofisher at Reservation Boundary, 2024.

Species	Number	CPUE (fish/12.35 min)	% of total
Gila Chub	1	0.08	1.06
Longfin Dace	66	5.34	70.21
Speckled Dace	19	1.54	20.21
Sonora Sucker	2	0.16	2.13
Desert Sucker	6	0.49	6.38
Total	94	7.61	100.00

Table 11. Fishes captured from Bonita Creek, Arizona, April 24-28, 30; and May 1, 2024, in Promar collapsible and Gee metal minnow traps. Data represent number of individuals for each species, total number, and proportion for each species across sites. Native fish species are indicated with an asterisk (*).

Species	Serna Cabin Promar	Serna Cabin Metal	Upper Site 1 Promar	Upper Site 1 Metal	Lee Trail Promar	Lee Trail Metal	Red Knolls Promar	Red Knolls Metal	Total	Percent Total
*Gila Chub			3	15	128	224	134	103	607	47.05%
*Longfin Dace					2	4			6	0.47%
*Speckled Dace						6			6	0.47%
*Sonora Sucker			10	6	53	87	26	16	198	15.35%
*Desert Sucker					42	20	2	1	65	5.04%
*Gila Topminnow								3	3	0.23%
Fathead Minnow				2		1	3	20	26	2.02%
Green Sunfish	47	314							361	27.98%
Channel Catfish	3								3	0.23%
Yellow Bullhead	5		9						14	1.09%
# Native Species	0	0	13	21	225	335	162	123	885	68.60%
# Nonnative Species	55	314	9	2	0	1	3	20	404	31.32%
YOY Catostomid								1	1	0.08%
Total Fish	55	314	22	23	225	342	165	144	1,290	100.00%
Sonora Mud Turtle	2		1		2		8		13	

Table 12. Fishes captured from Bonita Creek, Arizona in Promar collapsible and Gee metal minnow traps. Data represent number of individuals for each species captured (#), mean catch-per-unit effort (#/hour) and standard error (SE). Sample size (N) is the number of collapsible or metal minnow trap sets. Native fish species are indicated with an asterisk (*).

Species	Statistics	Serna Cabin		Upper Site 1		Lee Trail		Red Knolls	
		Promar (N=12)	Metal (N=12)	Promar (N=10)	Metal (N=10)	Promar (N=25)	Metal (N=20)	Promar (N=25)	Metal (N=25)
*Gila chub	Number			3	15	128	224	134	103
	Mean #/Hour			0.02	0.08	0.28	0.60	0.27	0.21
	SE			0.01	0.03	0.06	0.10	0.10	0.03
*Longfin Dace	Number					2	4		
	Mean #/Hour					0.00	0.01		
	SE					0.00	0.00		
*Speckled Dace	Number						6		
	Mean #/Hour						0.02		
	SE						0.01		
*Sonora sucker	Number			10	6	53	87	26	16
	Mean #/Hour			0.05	0.03	0.12	0.23	0.05	0.03
	SE			0.02	0.01	0.03	0.05	0.02	0.01
*Desert sucker	Number					42	20	2	1
	Mean #/Hour					0.09	0.05	0.00	0.00
	SE					0.04	0.01	0.00	0.00
* Gila Topminnow	Number								3
	Mean #/Hour								0.01
	SE								0.00
Fathead Minnow	Number				2		1	3	20
	Mean #/Hour				0.01		0.00	0.01	0.04
	SE				0.01		0.00	0.00	0.01
Green Sunfish	Number	47	314						
	Mean #/Hour	0.17	1.15						
	SE	0.04	0.30						
Channel Catfish	Number	3							
	Mean #/Hour	0.01							
	SE	0.01							
Yellow Bullhead	Number	5		9					
	Mean #/Hour	0.02		0.05					
	SE	0.01		0.02					
YOY Catostomid	Number								1
	Mean #/Hour								0.00
	SE								0.00
*Sonora Mud Turtle	Number	2		1		2		8	
	Mean #/Hour	0.01		0.01		0.00		0.02	
	SE	0.00		0.01		0.00		0.01	

Table 13. Length (m) and percent length (in parentheses) of mesohabitat types at each permanent monitoring site within Bonita Creek, 2024.

Monitoring Site	Riffle	Run	Glide	Pool	Road	Isolated Backwater	Seepage	Total Length
Serna	0	31.4 (17.35%)	11.1 (6.13%)	138.5 (76.62%)	0	0	0	181
Upper Site 1	0	0	44.5 (30.90%)	85.6 (59.44%)	0	8.9 (6.18%)	5 (3.47%)	144
Lee Trail	0	20 (9.69%)	74.2 (35.95%)	112.2 (54.36%)	0	0	0	206.4
Red Knolls	0	19.4 (6.80%)	171.9 (60.21%)	68.2 (23.89%)	26 (9.11%)	0	0	285.5
Midnight Canyon	87.1 (43.95%)	12.7 (6.41%)	93.4 (47.12%)	5 (2.52%)	0	0	0	198.2
Reservation Boundary	0	30.2 (34.67%)	56.9 (65.33%)	0	0	0	0	97.1
Total Mesohabitat Composition	87.1 (7.83%)	113.7 (10.22%)	462 (41.54%)	409.5 (36.82%)	26 (2.34%)	8.9 (0.80%)	5 (0.45%)	1,112.2

Table 14. Total number of native and nonnative fish species collected by mesohabitat type at Serna Cabin using a backpack electrofisher and traps, 2024. Native fish species are indicated with an asterisk (*).

Serna Cabin						
	Glide	Pool	Riffle	Run	Road	Isolated Backwater
Fathead Minnow		4				
Green Sunfish		384				
Channel Catfish		3				
Yellow Bullhead		5				
Total		396				
*Sonora Mud Turtle		2				
Virile Crayfish				1		

Table 15. Total number of native and nonnative fish species collected by mesohabitat type at Upper Site 1 using a backpack electrofisher and traps, 2024. Native fish species are indicated with an asterisk (*).

Upper Site 1						
	Glide	Pool	Riffle	Run	Road	Isolated Backwater
*Gila chub		18				
*Sonora Sucker	2	20				1
Fathead Minnow		2				
Yellow Bullhead		9				
Total	2	49				1
*Sonora Mud Turtle		1				

Table 16. Total number of native and nonnative fish species collected by mesohabitat type at Lee Trail using a backpack electrofisher and traps, 2024. Native fish species are indicated with an asterisk (*).

Lee Trail						
	Glide	Pool	Riffle	Run	Road	Isolated Backwater
*Gila chub	2	352				
*Longfin Dace	2	6				
*Speckled Dace	11	6		12		
*Sonora Sucker	10	140				
*Desert Sucker		62				
*YOY Catostomid	2					
Fathead Minnow		1				
Total	27	567		12		
*Sonora Mud Turtle		2				

Table 17. Total number of native and nonnative fish species collected by mesohabitat type at

Red Knolls using a backpack electrofisher and traps, 2024. Native fish species are indicated with an asterisk (*).

Red Knolls					
Species	Glide/Pool	Riffle	Run	Road	Isolated Backwater
*Gila chub	237				
*Longfin Dace			1	1	
*Speckled Dace			1		
*Sonora Sucker	42				
*Desert Sucker	3			1	
*Gila Topminnow	3			1	
* YOY Catostomid	1				
Fathead Minnow	23				
Total	309		2	3	
Sonora Mud Turtle	8				

Table 18. Total number of native and nonnative fish species collected by mesohabitat type at Midnight Canyon using a backpack electrofisher and traps, 2024. Native fish species are indicated with an asterisk (*).

Midnight Canyon						
	Glide	Pool	Riffle	Run	Road	Isolated Backwater
*Gila chub	7		4			
*Longfin Dace	5		1	5		
*Speckled Dace	6		66	4		
*Sonora Sucker	9		7	3		
*Desert Sucker	4		20	1		
*YOY Catostomid	1			1		
Total	32		98	14		

Table 19. Total number of native and nonnative fish species collected by mesohabitat type at Reservation Boundary using a backpack electrofisher and traps, 2024. Native fish species are indicated with an asterisk (*).

Reservation Boundary						
	Glide	Pool	Riffle	Run	Road	Isolated Backwater
*Gila Chub				1		
*Longfin Dace	15			51		
*Speckled Dace	2			17		
*Sonora Sucker	2					
*Desert Sucker				6		
Total	19			75		

Table 20. Total combined number of native and nonnative species collected by mesohabitat type in Bonita Creek using backpack electrofisher and traps, 2024. Native fish are indicated with an asterisk (*).

	Glide	Pool	Riffle	Run	Road	Isolated Backwater	Total
*Gila Chub	9	607	4	1			621
*Longfin Dace	22	6	1	57	1		87
*Speckled Dace	19	6	66	34			125
*Sonora Sucker	23	202	7	3		1	236
*Desert Sucker	4	65	20	7	1		97
*Gila Topminnow		3			1		4
*YOY Catostomid	3	1		1			5
Fathead Minnow		30					30
Green Sunfish		384					384
Channel Catfish		3					3
Yellow Bullhead		14					14
# Native Species	80	890	98	103	3	1	1,175
# Nonnative Species	0	431	0	0	0	0	431
Total Fish	80	1,321	98	103	3	1	1,606
Sonora Mud Turtle		13					
Virile crayfish				1			1

Table 21. Count and percent composition of substrate types by monitoring sites in 2024.

Monitoring Site	Sand, silt, clay	Gravel	Cobble	Boulder	Total
Serna Cabin	22 (16.06%)	57 (41.16%)	57 (41.16%)	1 (0.73%)	137
Upper Site 1	20 (19.23%)	54 (51.92%)	30 (28.85%)	0 (0.00%)	104
Lee Trail	19 (14.29%)	60 (45.11%)	52 (39.10%)	2 (1.50%)	133
Red Knolls	102 (77.27%)	17 (12.88%)	11 (27.65%)	2 (1.52%)	132
Midnight Canyon	27 (15.88%)	92 (54.12%)	47 (27.65%)	4 (2.35%)	170
Reservation Boundary	28 (21.05%)	43 (32.33%)	49 (36.84%)	13 (9.77%)	133
Total	218 (26.95%)	323 (39.93%)	246 (30.14%)	22 (2.72%)	809

Table 22. Year monitored, effort, number of fish captured by backpack electrofishing, and catch per unit effort from Bonita Creek, 2011-2024.

Year	Effort (Seconds / Minutes)	Number of Fish	CPUE (Minutes)
2011	13,620 / 227	1,415	6.23
2012	7,954 / 133	715	5.39
2013	10,035 / 167	706	4.22
2014	9,040 / 151	488	3.24
2015	7,434 / 124	684	5.52
2016	6,390 / 107	668	6.27
2017	9,927 / 165	635	3.84
2018	15,689 / 261	1067	4.08
2019	9,917 / 165	397	2.40
2020	9,353 / 156	934	5.99
2021	5,902 / 98	522	5.31
2022	11,039 / 184	478	2.60
2023	12,454 / 208	304	1.46
2024	5,003 / 83	316	3.79

Table 23. Year monitored, gear type, effort, number of fish captured, and CPUE from Bonita Creek, 2011-2024.

Year	Gear Type	Effort	Number of Fish	CPUE (Net Night)
2011	Promar Collapsible Trap	25	216	8.64
2011	Gee Metal Minnow Trap	25	68	2.72
2012	Promar Collapsible Trap	125	708	5.66
2012	Gee Metal Minnow Trap	105	1,123	10.70
2013	Promar Collapsible Trap	120	992	8.27
2013	Gee Metal Minnow Trap	105	988	9.41
2014	Promar Collapsible Trap	120	708	5.90
2014	Gee Metal Minnow Trap	105	939	8.94
2015	Promar Collapsible Trap	105	762	7.26
2015	Gee Metal Minnow Trap	95	982	10.34
2016	Promar Collapsible Trap	115	840	7.30
2016	Gee Metal Minnow Trap	95	1,002	10.55
2017	Promar Collapsible Trap	120	292	2.43
2017	Gee Metal Minnow Trap	105	800	7.62
2018	Promar Collapsible Trap	90	400	4.44
2018	Gee Metal Minnow Trap	90	705	7.83
2019	Promar Collapsible Trap	106	347	3.27
2019	Gee Metal Minnow Trap	106	845	7.97
2020	Promar Collapsible Trap	124	693	5.59
2020	Gee Metal Minnow Trap	124	1,200	9.68
2021	Promar Collapsible Trap	130	1,190	9.15
2021	Gee Metal Minnow Trap	130	1,898	14.60
2022	Promar Collapsible Trap	115	407	3.53
2022	Gee Metal Minnow Trap	115	682	5.93
2023	Promar Collapsible Trap	60	210	3.50
2023	Gee Metal Minnow Trap	60	285	4.75
2024	Promar Collapsible Trap	72	467	6.49
2024	Gee Metal Minnow Trap	67	823	12.28

Date	Observer(s)	Observations	Number of Livestock Observed	River Mile	Livestock Owner P=permittee; T=Tribal; U=unknown; N=non BLM permittee	Number of Livestock Removed	Action	BLM Follow-up/ Final Result	BLM Follow-up/ Final Result
1/19/2024	J. Jett, BLM River Ranger	Gila River Float Trip Jan 19-20, 2024. Two black bulls at west of day use near OSMB, three black cows at Oak Canyon and three cows (black/white, white, and brown) at mile 12. The Eagle Creek water gap and wing fence is up and functional.	8	0, 3, 3	P	5	1/22/2024 Received report of livestock. I contacted MR LLC who stated he went in horseback a week ago to remove the two bulls and did not find them. He stated he will ride back in soon and talk to Turtle Cattle Company LLC (TCC LLC) about a making a joint sweep. -RD. 1/22/2024 Left message for TCC LLC to contact	1/26/2024 MR LLC reported that he removed three black cows and two calves from the GBRNCA's east end. He stated that he is actively trying to remove the two bulls. He has ridden the area of the OSMB twice since 1/19/2024 and were unable to locate the bulls as the brush is very thick. -RD. See	
1/21/2024	C. Romero, BLM LE	Gila River. Red white faced muley cow and solid red calf on the south side of the river. Sighted from 32.88406 -109.50811.	2	22.3	P	2	1/22/2024 Received report of livestock, contacted C. Romero for a clarified location and color. -RD. 1/22/2024 Contacted the A-Y	1/29/2024 A-Y Ranch LLC reported to R. Peterson, that he removed the cow and calf on 1/23/2024, that he found where	
1/22/2024	R. Johnson, BLM LE	Gila River. On the Black Hills Country Byway road, at the northside cattle guard near OSMB. Cattle tracks stepping into and over the wing fence of the cattle guard, entering GBRNCA.	0	0	P		1/22/2024 I let C. Porter know that further work needs to be done on the cattle guard as livestock are going around or through the barrier that was installed on 11/20/2023. -RD.	1/26/2024 MR LLC stated he fixed the fence at the cattle guard to prevent cattle from walking around the cattle guard. -RD. See report date 1/29/2024 for removal totals. -RD.	
1/25/2024	C. Romero, BLM LE	Gila River. One black bull at the day use area off of the Black Hills Country Byway road, near the OSMB.	1	0	P		1/25/2024 I left message for MR LLC approximately one hour after the bull was sighted to report the bull's location. This is the same	See report date 1/29/2024 for removal totals. -RD.	
1/29/2024	C. Porter - BLM Range Tech	Gila River. Two black bulls, one on either side of the channel, east of the OSMB. Checked the permittee's work on the GBRNCA fence at the cattle guard. Checked the water gap, it was up and functioning.	2	0	P	10	1/30/2024 Notified RMS of findings. -CP.	1/30/2024 Contacted the MR LLC to give updated location. He stated on 1/28/2024 he reinforced the water gap as the two bulls had pushed under the gap fence. He also found where the bulls had broken down a gate, he repaired that also. MR LLC stated that on 1/29/2024, he made a sweep downstream and upsteam to the water gap, removing eight cows and the two bulls. Today, 1/30/2024, MR LLC is riding east of the GBRNCA boundary to gather	1/30/2024 Spoke with C. Porter about further shoring up the cattle guard wing fence to prevent livestock from gaining access into the GBRNCA by stepping into the metal wing to bypass the cattle guard. -RD. 1/31/2024 C. Porter and R. Dees added more structure to the cattle guard to prevent cattle from stepping into the cattle guard wing. -RD.
1/29/2024	TV Ranch LLC	Bonita Creek. Removed two cows and two calves near Red Knolls.	4		P	4	2/5/2024 TV Ranch LLC reported the removal to RMS. -RD.	None.	
2/5/2024	J. Jett, BLM River Ranger	Gila River. Checked the OSMB area for fresh sign of cattle, none detected.	0				2/5/2024 Report received from River Ranger. -RD.	None.	
	MR LLC	None.					2/5/2024 MR LLC reported to RMS that he has made two sweeps in the GBRNCA since 1/29/2024 and has not found any	2/5/2024 MR LLC stated that they are trying to plan a day with TCC LLC to make a full sweep of the Gila River. TCC LLC reports	
2/12/2024	TV Ranch LLC	Bonita Creek. Removed two cows, two calves and a bull near Red Knolls.	5			5	2/12/2024 TV Ranch LLC reported the removal to RMS. -RD.	None.	
2/23/2024	Rich Law - Retired BLM River Ranger	Gila River. Approximately 20 head, with 10 of those at river mile 8.5.	20	8.5	P	7	2/23/2024 J. Jett, BLM River Ranger encountered floaters who reported cattle to him. 2/26/2024 I received report of cattle, contacted Menges Ranches LLC (MR LLC) and Turtle Cattle Company LLC (TCC LLC). MR LLC stated that the river level has risen, but can ride the sides back towards Gillard Hot Spring, as they won't have to cross the river. He stated he would talk to TCC LLC but thinks that they won't be able to ride upstream like they	3/10/2024 MR LLC stated he removed three cows, three calves and a bull from the area near Gillard Hot Springs. He stated the Gila River flow level is up, that they did find a wider, shallower spot to cross and that spot was up to their horse's bellies. - RD.	
2/23/2024	J. Jett, BLM River Ranger	Gila River. Fresh sign at the boat put in, water gap is up under the Old Safford Morenci Bridge (OSMB).		0	P		2/23/2024 J. Jett, BLM River Ranger encountered floaters who reported cattle to him. 2/26/2024 I received report of cattle, contacted MR LLC. MR LLC stated that he would go in and remove what he could find. He stated that he had talked to a	See 3/3/2024 for removal totals. - RD	

2/24/2024	J. Jett, BLM River Ranger	Bonita Creek. Fresh sign at Serna Cabin.			U		2/23/2024 J. Jett, BLM River Ranger encountered floaters who reported cattle to him. 2/26/2024 I received report of cattle, contacted TV Ranch LLC, he stated he would go in and check the area today. I contacted TCC LLC and he stated he would get with TV Ranch LLC and plan a	See 4/26/2024 removal totals. - RD	
3/1/2024	J. Jett, BLM River Ranger	Gila River. One black bull at the day use area off of the Black Hills Country Byway road, near the OSMB.	1	0	P		3/4/2024 Contacted MR LLC gave him the report of the bull. - RD. See report date 2/23/2024.	See 3/3/2024 for removal totals. - RD	
3/3/2024	P. Hathaway - BLM Park Ranger	Gila River. One black bull behind the bathrooms at the boat put in, near the OSMB.	1	0	P	2	3/4/2024 Contacted MR LLC gave him the reports of the bull. He stated that he removed the bull on 3/1/2024. He was unaware that it was back in there, he stated that he would check the fences nearby and check for tracks at the cattle guard as he may be walking over it. He stated that he has hauled him to a	3/12/2024 MR LLC reported that he removed two bulls from the OSMB area on 3/5/2024. -RD.	
3/7/2024	J. Hall, BLM Law Enforcement (LE)	Gila River. Two pairs black horned cattle between Riverview Campground and Serna Cabin.	4		P		3/7/2024 I contacted TCC LLC and reported sighting. He stated that he would go in and check on 3/8/2024. - RD. 3/8/2024 Spoke with Tollgate permittee and informed them of the cattle. They said they did not think they were theirs but they would check and remove them if they were able. Also called Bullgap permittee but only left a message of the same information. - RP. 3/11/2024 Asked TV Ranch LLC if they had any horned cattle. Asked TCC LLC for a follow up. - RD.	3/11/2024 TCC LLC stated he made a sweep of the area on 3/8/2024, he stated he saw the tracks which had gone up the Gila River. He stated the river was running too hard to safely cross. He made a sweep through the lower part of Bonita Creek and did not find any cattle. On 3/9/2024 he went back, and did not see any cattle. - RD. 3/11/2024 I reported to TV Ranch LLC, who stated he would check the area as well. He has very few horned cattle. - RD. 3/11/2024 Bullgap permittee came into the office and reported that they went out there to remove the livestock but they saw only fresh sign but	See 4/26/2024 removal totals. -RD
3/12/2024	Public land user	Gila River. Two pairs black cattle at Riverview Campground.	4		P		3/12/2024 I received a call from a public land user stating that there were two cows and two calves at the Riverview Campground. - RD. 3/12/2024 I contacted TCC LLC, I told him that the report came in a last few minutes ago. TCC LLC stated that he was already in the area and would try to go get them today, if they crossed the river he	See 4/26/2024 removal totals. - RD.	
3/19/2024	TV Ranch LLC	Bonita Creek. Removed a bull near Red Knolls.	1		P	1	3/21/2024 TV Ranch LLC reported the removal to RMS. -	None.	
3/20/2024	CBD Group float trip	Gila River. One pair black cattle at the confluence of Eagle Creek and Gila River, and three herds of unknown numbers, some had ear tags.	2 and ?		P/U		3/21/2024 I received a copy of the CBD letter dated 3/20/2024, a Gila River float trip was made 3/3 - 3/5/2024. CBD reported sign in the GBRNCA; encountered three different herds of cattle and photographed one cow and one calf near the confluence of Eagle Creek. No brands, or ear tag color reported. No total head reported.	4/11/2024 I spoke with J. Jett, BLM River Ranger, he stated that the water levels of the Gila River are high. - RD. 4/22/2024 The water levels are still at higher flow levels. - RD.	5/8/2024 TCC LLC reported that he was planning a sweep in the near future with TV Ranch LLC. - RD. See 4/26/2024 for removal update. - RD.
3/26/2024	None.	None.					3/26/2024 I spoke with J. Jett, the BLM River Ranger about the water levels on the Gila River. He stated they were not safe to be riding	4/11/2024 I spoke with J. Jett, BLM River Ranger, he stated that the water levels of the Gila River are high. - RD.	5/8/2024 TCC LLC reported that he was planning a sweep in the near future with TV Ranch LLC. - RD.
3/28/2024	J. Jett, BLM River Ranger	Gila River Float Trip March 28-29, 2024. One calf. San Francisco and Eagle Creek confluence water gaps are down. Tree has fallen on the fencing at Eagle Creek confluence.	1		P		4/22/2024 Received river report, contacted MR LLC and TCC LLC with this finding. Water levels are still at high flow levels. - RD.	4/22/2024 The water levels are still at higher flow levels. - RD.	5/8/2024 TCC LLC reported that he was planning a sweep in the near future with TV Ranch LLC. - RD. See 4/26/2024 for removal
3/29/2024	Jeremy Jonas - Public land user	Gila River. Jonas floated the Gila River from 3/29 through 3/30/2024. Stating livestock sign was observed along banks from three miles above the confluence with the San Francisco River. Livestock were observed on the west side of the confluence with Eagle Creek.	9		p		4/11/2024 BLM received an email from Jeremy Jonas who floated the Gila River from 3/29 through 3/30/2024. Stating cattle sign observed along banks from three miles above the confluence with the San Francisco River. Cattle were observed on the west side of the confluence with Eagle Creek. No description of brands, earmarks or colors given. - RD.	5/8/2024 TCC LLC reported that he was planning a sweep in the near future with TV Ranch LLC. - RD. See 4/26/2024 for removal update. - RD.	See 4/26/2024 for removal totals. -RD.

3/30/2024	TV Ranch LLC	Bonita Creek. Removed a bull.	1		P	1	3/30/2024 TV Ranch LLC reported the removal to RMS. -	None.	
3/31/2024	TV Ranch LLC	Bonita Creek.	UNK		P	UNK	3/31/2024 TV Ranch LLC reported that they were trailing across Bonita Creek channel with livestock when they were attacked by bees. The cattle were abandoned above Lee Trail Campground as the area was unsafe. He stated that he thinks the livestock will go back out of the GBRNCA and back to their pasture in the uplands. - RD. 4/1/2024 TV Ranch LLC stated two of the riders were sent to the hospital, while others were stung but okay. I asked that they let me know when they remove the livestock. - RD.	4/2/2024 TV Ranch LLC reported that they pushed the cattle to the west of Red Knolls Road, out of Bonita Creek channel on foot/UTV. He stated that they would go back in on 4/3/2024 with horses to make a sweep. - RD. 4/4/2024 TV Ranch LLC stated that they rode horseback and checked from Red Knolls Road down to Jones Road and then further past Jones Road by a couple crossings. They did not find any cattle. They shut the gate at Jones Road, and said there were a lot of tracks where the cattle went back to their pasture after the bee attack. There were no tracks going upstream from Red Knolls Road. They also checked the Lee Trail	
3/31/2024	Christian Timmerman - Public land user	Gila and San Francisco confluence.	5	6.5	P		4/2/2024 BLM received an email on 3/31/2024 from a public land user that reported five head of livestock at the confluence. No brands, or ear tags reported. - RD. 4/2/2024 I contacted MR LLC and TCC LLC and informed them of the sighting. - RD.	4/11/2024 I spoke with J. Jett, BLM River Ranger, he stated that the water levels of the Gila River are high. - RD. 4/22/2024 The water levels are still at higher flows. - RD. 5/7/2024 I made contact with MR LLC and TCC LLC . MR LLC stated the Gila River was receding quickly and he is planning on making a sweep on Thursday, with Monday or Tuesday checking the San Francisco River. I left a	5/8/2024 TCC LLC reported that he was planning a sweep in the near future with TV Ranch LLC. - RD. See 4/26/2024 for removal update. - RD. 5/14/2024 MR LLC reported that he repaired the water gap fence across the confluence of the Gila and San Francisco River confluence. - RD.
4/18/2024	J. Jett, BLM River Ranger	Gila River Float Trip April 18-19, 2024. Observed one black cow and calf at RM 1; seven mixed size/color at RM 9; and six mixed size/color upstream of Bonita Creek, and heard unknown number of cattle upsteam of Bonita Creek confluence. San Francisco and Eagle Creek confluence water gaps are down.	15	1, 9, 19	P		4/22/2024 Received river report, contacted MR LLC and TCC LLC with this finding. Water levels are still at higher water levels. - RD.	5/7/2024 I made contact with MR LLC, TCC LLC, and TV Ranch LLC. MR LLC stated the Gila River was receding quickly and he is planning on making a sweep on Thursday, with Monday or Tuesday checking the San Francisco River. I left a message for TCC LLC. TV Ranch LLC stated that the cattle observed near river mile 19/campground did not belong	See 4/26/2024 for removal totals. - RD.
4/26/2024	Jeremy Jonas - Public land user	Gila River. Jonas reported livestock at three locations, noting five cows spotted at approximately river mile 10.9.	5+?	2.5, 10.9, 17.5	P	4 +23	4/30/2024 I received a forwarded email from Jody Jett, BLM River Ranger. The email is a report from Jeremy Jonas dated 4/30/2024. Jeremy reported to Jody, that there were livestock at three locations, noting five cows spotted at approximately river mile 10.9. For the other two locations, Jeremy Jonas did not give a number of head sighted. No physical descriptions, brands, or earmarks. No dates for float trip given. - RD. 4/30/2024 I passed along the reports to MR LLC, TCC LLC, and TV Ranch LLC. - RD. 4/30/2024 TCC LLC stated he would try removing very soon and keep me informed. - RD.	5/7/2024 I made contact with MR LLC, TCC LLC, and TV Ranch LLC. MR LLC stated the Gila River was receding and he is planning on making a sweep on Thursday, with Monday or Tuesday checking the San Francisco River. I left a message for TCC LLC. TV Ranch LLC stated that he was skeptical the livestock reported in these areas belonged to him due to the distance to his allotments. - RD. 5/8/2024 TCC LLC reported that he was planning a sweep in the near future with TV Ranch LLC. - RD. 5/10/2024 MR LLC reported that on 5/9/2024 they rode from Gillard Hot Springs back up to the OSMB, removed one cow, one calf and two steers. He reported seeing a bull which escaped (see report date	5/15/2024 MR LLC contacted me and stated that on 5/14/2024 they rode from Gillard Hot Spring to the Gila River and San Francisco River confluence, fixed the gap fence and did not find any livestock. He stated that the vegetation from Gillard Hot Spring to the OSMB has vegetation about 4 foot tall which made tracking the cattle a little difficult on 5/9/2024 , but the cattle were not wild and would only run ahead then stop. He stated that the footing for the horses was very soft and deep water in most places. As of yesterday he reported that both river's water levels were dropping fast. - RD.
5/9/2024	H. Blasius -BLM Fisheries Biologist	Bonita Creek. Four head of black cows south of the Red Knolls crossing. A cow was heard near the tribal boundary.	4+?		P & U or T	4	5/8/2024 I received a report from Heidi Blasius. 5/9/2024 I contacted TV Ranch LLC, Teresa Goseyun and Clark Richins of SCAT and passed along the report. -RD.	5/11/2024 TV Ranch LLC reported that the four head of livestock were removed. - RD. 5/20/2024 TV Ranch LLC stated that about two months ago he saw two mature Hereford bulls near the confluence of Johnny Creek and Bonita Creek area. He is sure that they are still in that area. No response from SCAT at	

5/9/2024	MR LLC	Gila River. One mature bull near Gillard Hot Springs	1		P	1	5/10/2024 MR LLC reported that during a sweep, this bull split off from the rest of the cattle, and escaped by crossing deep water. MR LLC could not get a brand. He stated it does not belong to him. - RD. 5/11/2024 reported sighting to TCC LLC. - RD.	5/15/2024 TCC LLC stated on 5/14/2024 they tried to coordinate with MR LLC for a sweep, but were not able to ride much further upstream from the Eagle Creek confluence due to the soft, water logged terrain and deep pockets of the river. He stated that they covered approximately three miles downstream of the Eagle Creek confluence. They removed	
5/14/2024	P. Hathaway - BLM Park Ranger	Bonita Creek	0		P/T/U/N		5/14/2024 The Park Ranger and River Ranger visited the area of 33.017649 -109.559181 a day or two prior, noting one very large track in the area. - RD. 5/15/2024 Emailed the Teresa Goseyun and Clark Richins of SCAT, reporting the track as it is probably a	5/20/2024 TV Ranch LLC stated that about two months ago he saw two mature Hereford bulls near the confluence of Johnny Creek and Bonita Creek area. He is sure that they are still in that area. No response from SCAT at this time. -RD. 6/13/2024 No	
5/14/2024	MR LLC	Gila and San Francisco confluence.	0				5/14/2024 MR LLC reported that he repaired the water gap fence across the San Francisco River confluence with the Gila River. He checked from Gillard Hot Springs to the Gila River and the	None.	
5/14/2024	TCC LLC	Gila River and Eagle Creek confluence	0				5/15/2024 TCC LLC reported that they fixed the damage to the fence caused by cottonwood tree falling on it. He stated the actual	None.	
5/19/2024	Roberta Lopez - BLM AFM Non-renewable & husband.	Gila River.	6	20.9	P		5/20/2024 Roberta reported to me that on 5/19/2024, 1730 hrs, at the Flying W recreation site she saw three head of unauthorized livestock. She stated her husband say them first and counted six head. I contacted TV Ranch LLC, A-Y Ranch LLC and TCC LLC, and reported the sighting to them at the approximate location of	See report date 5/22/2024 for removal.	
5/22/2024	R. Johnson, BLM LE	Gila River. Two cows at the Flying W ramada.	2	20.9	P	6	5/22/2024 BLM LE R. Johnson reported two cows at the Flying W Ramada. Contacted TV Ranch LLC, A-Y Ranch LLC and TCC LLC, and reported the sighting to them, using the same approximate location of 32.884194 -109.483079, that was reported on 5/20/2024. These are the same cattle reported on 5/19/2024. - RD.	5/23/2024 TV Ranch LLC reported that he made a sweep and the cattle belong to TCC LLC and A-Y Ranch LLC. I reported the finding to TCC LLC and A-Y Ranch LLC. -RD. 5/26/2024 TCC LLC reported that he removed 3 cows, two yearlings, and one calf from the area of Riverview campground. He stated a young bull calf ran off and escaped removal. He did not find the mature bull that was reported. A-Y Ranch stated he talked with TCC LLC and he planned to ride with them but he	6/3/2024 A-Y Ranch LLC stated on 6/1/2024 he made a pass through the area of the Flying W ramada and did not locate the bull. -RD.
5/23/2024	MR LLC	Gila River at old Safford Bridge. Observed tracks.		0	P		5/23/2024 MR LLC reported that on 5/17/2024 he put the water gap back up across the Gila River channel and it is now functional. He stated that he did see some	See report date 5/24/2024.	
5/23/2024	Public land user	Gila River. One bull at the boat put in.	1	0	P		5/24/20204 Public sighting of this bull was reported to Jody Jett, BLM River Ranger on 5/23/2024. Contacted MR LLC and let him know of the sighting. MR LLC said that he had seen the sign	See report date 5/24/2024.	
5/24/2024	C. Romero, BLM LE	Gila River. Two bulls and five cows east of the boat put in.	7	0	P	7	5/28/2024 Received report of cattle near the OSMB and that the water gap was needing repair. I made contact with MR LLC and updated him with the recent sighting as these are the same unauthorized cattle reported on 5/23/2024 by MR LLC and public land user. MR LLC stated that 5/26/2024 he rode from the boat put in down stream past Subia's following a bull track. He did not find the bull and assumed it was the bull he had encountered on 5/10/2024. He stated that the bull's track was traveling along looking for cows, not meandering. MR LLC stated that	5/29/2024 MR LLC stated he repaired the water gap across the Gila River again. He stated the fence was up but cattle crossed under the wire within the channel as the water receded. He weighted the fence down to prevent cattle from crossing under. He stated that he did not see any fresh tracks in that area and believes the cattle went back out under the gap. He will continue to monitor for sign in that area. - RD. 6/5/2024 Spoke with P. Hathaway - BLM Park Ranger, he stated he has not seen any cattle at the boat put in. - RD.	

6/9/2024	J. Jett, BLM River Ranger & P. Hathaway, BLM Park Ranger	Bonita Creek. Black white face bull and cow (hereford crosses); seven brown with white faces (hereford); one black cow; two brown calves (hereford).	12		P/T/U/N		6/10/2024 Report received of unauthorized livestock near Pueblo Devol, 33° 2'37.98"N 109°33'44.68"W. I contacted TV Ranch LLC, as the two black cows could belong to them. I emailed Teresa Goseyun and	6/13/2024 No response or communication from SCAT. - RD. 7/11/2024 See 6/24/2024 for removal of TV Ranch LLC livestock. -RD.	
6/13/2024	F. Marley - BLM AFM - Renewables, R. Peterson and R. Dees, BLM RMSs	Gila River.	0	18.2-18.9			6/13/2024 Checked the area for unauthorized livestock. The sign present was not fresh. Annual forbs and grasses dried up. Some perennial forbs detected. Bermuda grass green and growing in places along the		
6/14/2024	Heidi Blasius - BLM	Bonita Creek. Observed approximately ten head of cattle. Of those ten head two were mature Hereford bulls, one mature black white faced bull, one black cow with yellow eartag right ear; and six Hereford cows and calves. At locations 33.03185N 109.56290W and 33.03190N 109.56292w, all north of Red Knolls crossing.	10		T/U/P	3	6/24/2024 I received a report of cattle sighting on 6/14/2024. Total number of head and locations not given. I contacted TV Ranch LLC and SCAT.- RD. 7/1/2024 The approximate total of head and locations were given. Did not update SCAT of TV Ranch LLC as it is 16 days later. - RD.	7/11/2024 TV Ranch LLC reported he removed his cow, calf and bull from BC. - RD.	
6/24/2024	P. Hathaway - BLM Park Ranger	Gila River. One black muley bull at the boat put in near OSMB.	1	0	P		6/24/2024 Contacted MR Ranch LLC and reported the sighting. - RD. 6/26/2024 Contacted MR LLC who stated he has not removed the bull. - RD. 6/28/2024 MR LLC reported that he will not be able to remove the bull himself as he is sick. He stated he is trying to get another rider to come assist his employee. But will remove the bull soon. - RD.	7/1/2024 MR LLC stated he checked for the bull in the morning and did not find the bull. He stated he would check back in the evening as well. - RD. 7/8/2024 MR LLC stated on 7/1/2024 they checked from the boat put in to approximately river mile 1.2 and did not see any tracks. Stated it had rained so it made tracking easy. He will check again this week. - RD. 7/4/2024 BLM LE Romero reported sign along the river	
7/2/2024	TCC LLC	Gila River. Two cows at the confluence of Eagle Creek. Gap across Eagle Creek is up.	2		P		7/18/2024 TCC LLC reported that two head were removed at the confluence of Eagle Creek. Area covered was two miles downstream and one mile	8/21/2024 MR LLC did not think this bull was still in the area of the OSMB. I was told that a bull was seen near Owl Creek Campground in the uplands and	
8/20/2024	P. Hathaway - BLM Park Ranger	Gila River. Near OSMB. Cow track.	1	0	P	4	8/21/2024 I contacted MR LLC, he stated that he thinks it is a cow, and that the water gap may be washed out. He will check it	9/13/2024 MR. LLC informed of four livestock that had been removed from the area in response to this report, and the	
9/13/2024	P. Hathaway - BLM Park Ranger	Gila River. One steer at the boat put in.	1		P		9/13/2024 I contacted MR LLC, he stated he would go in tomorrow and remove the steer	See 9/15/2024 report date for removal. -RD.	
9/15/2024	C. Romero, BLM LE	Gila River. One black cow, tag 21 or 22	1	0	P	10	9/15/2024 I contacted MR LLC, he stated he would make a sweep of the area on 9/16/2024. - RD.	9/16/2024 I contacted MR LLC, they said that there were unable to find any livestock there at the boat put in so they rode into the box to see what they could find. They found a small group, probably the same livestock that were seen at the put in, and are taking them out right now. He said the water gap fence is up. - RP. 9/16/2024 MR LLC stated he	
9/27/2024	MR LLC	Gila River and San Francisco River confluence	0				9/27/2024 MR LLC reported that three riders went from the OSMB to the San Francisco confluence, no cattle encountered. Water gap	None. - RD.	
10/7/2024	J. Jett, BLM River Ranger	Gila River. Float trip	29		P	5 + 19	10/7/2024 Received report of float trip completed on 10/3 though 10/4/2024. - RD. 10/7/2024 Passed report of cattle to TCC LLC and MR LLC. - RD. 10/7/2024 Also contacted Permittee on Tollgate Alltoment about several cattle near that allotment. Though they may not be theirs, the permittee said they would go in over the next few	10/24/2024 MR LLC reported he made a sweep down the San Francisco to the confluence of the Gila River, then back upstream of the Gila River. He removed two bulls, the water gap was up and functioning, but someone had left the gate down. -RD. 10/24/2024 TCC LLC removed three head near Eagle Creek confluence and plan to	12/23/2024 TCC LLC reported on 12/23/2024 that they had made a sweep beginning on 12/15/2024, camping overnight and ending on 12/16/2024. TCC LLC split up with riders coming down from the San Francisco, and riders going upstream from the Riverview Campground
11/15/2024	TV Ranch LLC	Bonita Creek. One cow, one calf and two mature bulls.	4		P/P	4	11/15/2024 TV Ranch LLC made a sweep of the lower part of Bonita Creek. He removed one cow, one calf and one bull that	None.	

12/4/2024	R. Peterson, BLM	Bonita Creek. Two black bulls, one black cow and calf, all with yellow tags approximately one mile north of the fish barrier.	4		P	1 + 4	12/4/2024 I contacted TV Ranch LLC and reported sighting. -RD.	LLC for a removal update. He stated he went in yesterday and did not find any sign. He asked for a better description of the location, which I provided. He said he will go again this afternoon and search. - RD. 12/11/2024 TV Ranch LLC reported not finding reported	12/23/2024 TV Ranch LLC reported removing one bull. - RD. 1/3/2025 TV Ranch LLC reported he removed 1 bull and 3 heifers. - RD.

GRAZING SURVEY METHODOLOGY AND SURVEYOR CREDENTIALS

Survey Methodology

Since 2017, Center for Biological Diversity field biologists have conducted field assessments of livestock grazing impacts to aquatic and riparian critical habitat in the Southwest, including impacts to the physical and biological features that are essential to the conservation of endangered and threatened species.

Field assessments characterize livestock grazing impacts to aquatic and riparian critical habitat and document whether livestock are present in critical habitats from which they have been excluded under previous agency decisions. These transect assessments characterize, photograph, and rank damage from livestock grazing to primary constituent elements ("PCEs") and physical or biological features ("PBFs") of critical habitat. This includes (1) removal of herbaceous vegetation and grasses, and (2) multi-year woody stems and regeneration, (3) severity and extent of soil and ground disturbances, (4) severity and extent of streambank degradation, as well as checking functionality of grazing exclosures.

On an annual basis, survey data are recorded and databased with updated, georeferenced photographs. Using a standardized protocol, surveyors record:

(1) severity of grazing impacts on herbaceous vegetation and grasses;
(2) severity of browsing impacts on streamside woody regeneration;
(3) severity of ground disturbances from trailing, trampling, and wallowing;
(4) extent of ground disturbances from trailing, trampling, and wallowing;
(5) severity of streambank degradation; and
(6) extent of streambank degradation.

Each survey is broken down into ¼-½ mile field-delineated segments of designated critical habitat based on topography, access, and trends in severity of cattle impacts. At each segment endpoint, a condition score is recorded for each of the six impact categories along a range of 0 to 4 based on the severity and extent of the impact (*see* Table A-1 below). A segment is rated 0 for a particular category if no evidence of impact is observed, 1 if impacts are limited, 2 if impacts are light and scattered, 3 if impacts are moderate and widespread, and 4 if impacts are severe and pervasive. Following field surveys of designated stream reaches, each segment's "overall impact level" (defined as absent, light, moderate or significant) is calculated. To determine overall impact level, condition severity scores for each segment endpoint are collated and weighted (*see* Table A-2 below).

Multiple georeferenced photographs are taken per survey segment to document and corroborate condition scores. Overall livestock impacts are summarized and mapped by allotment and critical habitat stream segment. All data are stored in a GIS database alongside hundreds of corresponding photographs documenting damage to critical habitat stream reaches. These data are the most comprehensive, quantifiable, and up-to-date assessments of riparian conditions and cattle occupancy for each area surveyed. Transect field assessments provide the

best available scientific information about the condition of aquatic and riparian critical habitats in the Southwest.

Table A-1. Condition descriptors and severity score guidelines for the six cattle impact categories used in stream assessment surveys.

Category	Condition 1	Condition 2	Condition 3	Condition 4
GRAZING EVIDENCE ON GRASSES AND HERBACEOUS GROWTH	**LIMITED** Less than 1% of the grasses impacted.	**LIGHT** Few patches of grazed areas, selective grazing in patches.	**MODERATE** Multiple grass patches grazed, more than 20% of grass impacted in patches.	**SEVERE** Multiple patches grazed, heavy grazing pressure (more than 30%) in patches.
BROWSE PRESSURE/WOODY STEMS	**LIMITED** Less than 1% of woody stems impacted.	**LIGHT** Browsing limited to multi-year stems.	**MODERATE** Browse pressure on near channel woody recruitment.	**SEVERE** Multiple green-line or near-channel recruitment browse.
GROUND COVER DISTURBANCE/INTENSITY	**LIMITED** Only transient evidence of use; no examples of sustained use.	**LOW** Trailing apparent and/or cow trails developing.	**MODERATE** Multiple, well-worn trails with examples of wallows and rutting. Bare soils developing.	**SEVERE** Trails, plus wallows, rutting and soil compaction leading to more denuded ground. Large areas of bare soils.
GROUND COVER DISTURBANCE/EXTENT	**LIMITED** Isolated example of ground disturbance. Evidence of only transient use.	**SCATTERED** Trails or other disturbances in more than one location throughout segment.	**MODERATE** Trails meander through entire segment, three or more examples of bare soil from cattle across segment (see above).	**PERVASIVE** Multiple locations of disturbance and multiple types of disturbances including severe, moderate and low (see above).
STREAMBANK DEGRADATION/INTENSITY	**LIMITED** Cattle sign present but no obvious signs of bank degradation.	**LOW** Trails lead to streambanks and water, evidence of cows in stream.	**MODERATE** Trailing creating unstable banks with evidence of chiseling, shearing, or crumbling via hoof action.	**SEVERE** Trailing leads to chutes, shearing and/or removal of portions of the streambank. Vertical surfaces may be present. Evidence of cows lingering in stream.
STREAMBANK DEGRADATION/EXTENT	**LIMITED** Isolated example of streambank entry.	**SCATTERED** Low to moderate bank degradation in more than one location.	**MODERATE** Three or more examples of low to moderate degradation across segment (see above).	**PERVASIVE** Multiple examples of low, moderate, ***and*** severe degradation (see above).

Table A-2. Weighting table for overall impact levels of stream reach segments based on condition scores (0-4) from the six categories of cattle impacts.

ABSENT	LIGHT IMPACT	MODERATE IMPACT	SIGNIFICANT IMPACT
ALL ZEROS	ANY COMBINATION OF ONE'S & TWOS & ZEROS	AT LEAST (5) TWOS WITH ANY OTHER NUMBER	ANY TIME THERE ARE (3) THREES WITH ANY OTHER COMBINATION OF NUMBERS
		ANY COMBINATION OF TWOS, THREES, AND ONE'S	ANY COMBINATION OF NUMBERS WITH AT LEAST (1) FOUR
	(UNLESS (5) TWOS-` then moderate)	*(UNLESS (3) THREES- then significant)*	

Surveyor Credentials

The Center's Cattle Impact Surveys (CIS) are led by Todd Shulke and Chris Bugbee and our data are collected by a team of professional biologists, ecologists, and botanists.

Mr. Schulke is cofounder of the Center for Biological Diversity and oversees the Center's forest protection and restoration program. Mr. Schulke holds a bachelor's degree in environmental studies from Evergreen State College and has a background in youth wilderness education. He is a board member of the New Mexico Wilderness Alliance and Gila WoodNet. He also sits on the Western Governors' Forest Health Advisory Committee, Arizona Governor's Forest Health Committee, Collaborative Forest Landscape Restoration Program Advisory Committee, and New Mexico Forest and Watershed Health Planning Committee.

Mr. Bugbee obtained his Master of Science degree from the University of Florida in 2007, majoring in interdisciplinary ecology with a specialty focus in the field of wildlife conservation. Ever since, Mr. Bugbee has worked as a professional biologist—in a variety of freshwater and arid lands ecosystems on public lands—for multiple State and Federal agencies (including U.S. Geological Survey and U.S. Forest Service ("USFS")), universities, consulting firms and non-profit organizations. He has conducted focused biological surveys and scientific research on fish, amphibians, reptiles, and mammals, including invasive species and on rare, protected species. He has been with the Center since 2020.

To complete hundreds of survey miles each year across the Southwest, the Center hires contract biologists and trains them at length in survey protocol and data collection. Contractors must either possess a master's degree in biology, botany or forestry or hold a bachelor's degree in a similar field and have at least three years of relevant experience such as conducting biological inventories, monitoring vegetation, or conducting stream restoration. One exception was made to help finish our 2025 survey season. This was a recent graduate from Cornell University's College of Agriculture and Life Science who majored in Environment and

Sustainability with a focus in Environmental Biology & Applied Ecology, had a GPA of 3.94, made Dean's List for seven semesters, and is currently applying to graduate school with a research proposal involving cattle impacts to desert ecosystems specifically.

Collectively, our current team of contract surveyors has: worked as a biologist for U.S. Fish and Wildlife Service ("FWS"), conducted endangered fish monitoring with FWS, worked as a biologist for the Arizona Game and Fish Department, conducted stream restoration and riparian tree planting in collaboration with FWS and USFS, installed and read long-term vegetation monitoring plots for National Park Service, conducted bird surveys for Audubon Society, and has conducted rare plant surveys, spring/seep surveys, standard forestry measurements, and rangeland inventories (quadrats and belt transects to quantify cover types and plant species richness and abundance, vegetation mapping, soil surveys to assess annual production) under their own registered biological consulting LLC.

Outlook

Trespass cattle currently damaging critical habitat within the Gila Box RNCA

From Chris Bugbee <cbugbee@biologicaldiversity.org>
Date Fri 3/27/2026 10:25 AM
To Ray Suazo (rmsuazo@blm.gov) <rmsuazo@blm.gov>; Brady, Lance R <lrbrady@blm.gov>; Whitlaw, Heather <heather_whitlaw@fws.gov>
Cc Amy Lueders (RDLueders@fws.gov) <rdlueders@fws.gov>; blm_az_sfoweb@blm.gov <blm_az_sfoweb@blm.gov>

Dear Director Suazo, District Manager Brady and Supervisor Whitlaw,

Between March 18-March 21, 2026, the Center surveyed critical habitat designations within the Gila Box RNCA and documented ongoing and significant impacts throughout the entire cattle-excluded Gila Box. Surveyors observed 20+ cows and documented identifiable cattle brands (https://agriculture.az.gov/animals/livestock-brands) that can be readily traced back to grazing permittees, who are required to work with the BLM to remove trespass livestock and maintain fence lines that protect riparian resources.

Center surveyors documented trespass cattle damage and browsed woody recruitment on nearly every exposed terrace and river access point throughout the Gila Box, again in 2026, in areas where BLM has prohibited cattle since 1998.

Included below are some of our trespass cattle photos, with locational information, provided herein for the record. We strongly urge agency officials to use this information to effectually address these ongoing issues in a timely manner.

Sincerely,
Chris Bugbee
Southwest Conservation Advocate
cbugbee@biologicaldiversity.org
livestock@biologicaldiversity.org

Trespass cattle on Morenci allotment. 32.926589, -109.459639

Two photos documenting a trespass herd (with brand) on Morenci allotment. 32.960518, -109.402778

Trespass cows consuming willow regeneration on Bullgap Community allotment. 32.926589, -109.459639

Trespass bulls at the Bonita Creek confluence, on Bonita Creek allotment. 32.894871, -109.476753

CENTER for BIOLOGICAL DIVERSITY Because life is good.

April 7, 2026

Raymond Suazo, State Director
U.S. Bureau of Land Management
Arizona State Office
One N Central Ave., Suite 800
Phoenix, AZ 85004-4427
rmsuazo@blm.gov

Lance Brady, Gila District Manager
U.S. Bureau of Land Management
3201 E. Universal Way
Tucson, AZ 85756
Lrbrady@blm.gov

Heather Whitlaw, Arizona State Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
9828 N 31st Ave., Phoenix, AZ 85051
heather_whitlaw@fws.gov

Re: Annual Documentation of Trespass Livestock and Damage on the Gila River– Immediate Action and Response Requested

Dear State Director Suazo, District Manager Brady and State Supervisor Whitlaw,

From April 2-4, 2026, surveyors for the Center for Biological Diversity ("the Center") observed numerous unauthorized/trespass cattle and/or fresh cattle sign and significant damage to critical habitat within riparian areas of the A-Diamond, Teacup Ranch, LEN, Cochran, Horsetrack, Myers, Whitlow, Christmas, and Mescal Mountain allotments along the Gila River within BLM's Gila District.

Widespread damage was again predictably documented in designated critical and/or known occupied habitat for southwestern willow flycatchers and western yellow-billed cuckoo, both protected under the Endangered Species Act. Damage included degraded and sloughing streambanks, trampled and grazed riparian understory vegetation, denuded riparian terraces, and consumption of cottonwood and willow regeneration. Virtually every riparian access point for cows showed significant, ongoing damage. According to the 2024 Biological Opinion for continued grazing within BLM's Gila District, there is no authorized grazing in these allotments past April 1st.

We have consistently provided documentation of unauthorized and unlawful cattle grazing along this stretch of the Gila River since 2022 and now must repeat our efforts again in 2026. Despite this being our **third letter concerning this stretch of the Gila River over the course of the past year,** livestock grazing along the Middle Gila continues to cause extensive habitat destruction to threatened and endangered species and their critical habitat—all in violation of BLM-mandated permit conditions that limit the location and time of use by cattle

within this stretch, and in a manner that degrades endangered species habitat in conflict with the relevant biological opinions and biological assessments.

FWS's determinations in its January 31, 2024, Biological Opinion that grazing in the Gila District would not jeopardize the cuckoo and flycatcher nor adversely modify their critical habitat are based on assumptions that exclosure fences will keep livestock out of riparian areas and that seasonal restrictions will be obeyed and enforced. Although not designated as critical, the Mescal Mountain allotment contains occupied habitat for flycatchers and is potentially occupied by cuckoos during nesting season. According to the 2024 Biological Opinion, regarding the Mescal Mountain allotment, "this area supports most flycatchers in the action area."[1] As such, the BLM's 2023 Biological Evaluation (upon which the 2024 Biological Opinion is based) claims that in the Mescal Mountain allotment a "fence prevents cattle's access to Gila River."[2] The 2023 Biological Evaluation also states: "For those allotments with exclusion fencing, livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-November 1).[3]

Across the **nine grazing allotments again at issue here**, surveyors observed an estimated total of close to **100 head** of cattle (many with identifiable brands) from numerous herds within seasonally off-limits riparian areas. We assume that those cattle continue to graze presently. Below is a subset of our survey photos taken within areas closed to livestock between April 1 and November 1 each year, to protect riparian habitat pursuant to the 2024 Biological Opinion.

Unauthorized/trespass cattle, with identifiable brand, grazing in designated critical habitat for flycatchers and cuckoo on A-Diamond allotment. 33.109317, -111.020109. April 2, 2026.

[1] 2024 BiOp at 163.
[2] 2023 Biological Evaluation at 202.
[3] *Id*., page 164.

An example of unauthorized and unlawful grazing in designated critical habitat for flycatchers and cuckoo at the LEN/ Teacup Ranch allotment boundary. 33.109030, -111.101191. April 2, 2026.

An example of a damaged riparian terrace in designated critical habitat for flycatchers and cuckoo on LEN allotment. 33.096741, -111.178228. April 2, 2026.

Riparian terraces– designated as critical for flycatcher and cuckoo recovery– routinely exhibit significant sloughing of banks, browsed and stunted riparian trees, and bare soils. This example is from Horsetrack allotment. 33.092082, -111.186651. April 2, 2026.

Unauthorized cow with identifiable brand in designated critical habitat for flycatchers and cuckoo on Horsetrack allotment. 33.094355, -111.186411. April 2, 2026.

Unauthorized cow with identifiable brand in designated critical habitat for flycatchers and cuckoo on Myers allotment. 33.085352, -111.209178. April 2, 2026.

Unauthorized cattle with the same identifiable markers damaging seasonally off-limits and designated riparian terraces on Myers allotment. 33.090731, -111.219340. April 2, 2026.

An unauthorized cow with identifiable markers urinating in designated critical habitat for flycatchers and cuckoo on Whitlow allotment. 33.084820, -111.212202. April 2, 2026.

Another unauthorized cow in designated critical habitat for flycatchers and cuckoo on Whitlow allotment. Yellow ear tags match the observed brands. 33.091507, -111.223906. April 2, 2026.

A substantial herd of unauthorized cattle, with the same identifiable markers, unlawfully damaging seasonally off-limits and designated riparian critical habitat on Whitlow allotment. 33.084920, -111.212268 (2). April 2, 2026.

More unauthorized cattle, with the same identifiable markers, unlawfully damaging seasonally off-limits designated riparian critical habitat on Myers allotment. 33.100810, -111.247508. April 2, 2026.

Unauthorized/trespass cows in designated critical habitat for cuckoo on the Christmas allotment. 33.097912, -110.683527. April 4, 2026.

Unauthorized/trespass cows in designated critical habitat for cuckoo on the Christmas allotment. 33.116087, -110.670892. April 3, 2026.

A herd of unauthorized/trespass cows within occupied flycatcher habitat on Mescal Mountain allotment. 33.155033, -110.559276. April 3, 2026.

Another herd of unauthorized/trespass cows within occupied flycatcher habitat on Mescal Mountain allotment. 33.143309, -110.612560. April 3, 2026.

Yet another herd of unauthorized/trespass cows within occupied flycatcher habitat on Mescal Mountain allotment. 33.120736, -110.651088. April 3, 2026.

Center surveys are designed to catalogue damage to Primary Constituent Elements (PCEs) or Physical and Biological Features (PBFs) of endangered species habitat, which are defined by FWS as required to ensure survival, reproduction, and recovery of endangered species. For example, cuckoo require dense, multi-layered regenerating riparian vegetation (e.g., cottonwood, willow, mesquite) for nesting, cover, and shade and an herbaceous understory (e.g., sedges, grasses) for foraging or cover. Center surveys quantify specific metrics such as (1) removal of herbaceous vegetation and grasses, (2) removal of multi-year woody stems and regeneration, (3) severity and extent of soil and ground disturbances, (4) severity and extent of streambank degradation. Surveyors also examine functionality of grazing exclosures and document instances of unauthorized grazing.

Center surveys reveal that unenforced seasonal restrictions and inadequate grazing exclosures along the Middle Gila, within BLM's Gila District, are failing to prevent livestock intrusion and damage and are thereby failing to protect PCEs and PBFs required for species recovery.

The January 2024 Biological Opinion continues to assume that livestock are excluded from important riparian areas within the Gila District, including the **nine grazing allotments again at issue here**. For example,

> For those allotments with exclusion fencing, livestock grazing will be excluded within occupied and un-surveyed, suitable habitat during the breeding season (April 1-November 1).[4]

As such, the above photos and subsequent damage to designated and/or potentially occupied habitat for flycatcher and cuckoo documented here are from unauthorized/trespass livestock, almost certainly a direct result of authorized grazing within other portions of these allotments. We therefore continue to demonstrate that unauthorized livestock is a ubiquitous and significant problem throughout BLM's Gila District and that authorized grazing inevitably becomes unauthorized and unlawful grazing.

The January 2024 Biological Opinion also mandates that BLM take prompt action to remove unauthorized cattle. For example,

> Upon receipt of information regarding unauthorized livestock in sensitive riparian areas, BLM will take action as described in GCM 4 to address unauthorized livestock in a timely manner.[5]

This letter serves as your receipt of information regarding unauthorized livestock in sensitive riparian areas where livestock are prohibited after April 1. The mandatory conservation measure #4 (referenced above as "GCM 4") states that the BLM must now:

> Work to remove unauthorized livestock from areas excluded or otherwise closed to grazing that provide a benefit to listed species and their habitat (see Table 4 in 2012 BO

[4] 2024 Biological Opinion, page 23.
[5] *Ibid.*

for a current list of exclosures). The BLM will contact the owner, if the owner is identifiable, of the livestock as soon as possible after the unauthorized use is reported and request removal. The BLM will work as quickly as practical to repair exclosure fences and/or notify permittees to repair fences. Where unauthorized use is a recurrent problem, alteration or additional barriers to livestock movement will be considered.[6]

We request that BLM provide us with written confirmation (via email) of receipt of this letter, and a written report concerning what action BLM will take or has taken to address this incidence of unauthorized grazing, including any action to ensure the prompt removal of livestock, the necessary repair of any fences, and any other action to ensure unauthorized grazing in these sensitive areas does not recur. As you know, flycatcher and cuckoo recovery depends directly upon regeneration of riparian forest that is being precluded by cattle along the Middle Gila and throughout the region. We will be following up on these issues as we get closer to flycatcher nesting season and to the annual arrival of breeding cuckoos to Arizona.

Sincerely,

Chris Bugbee
Southwest Conservation Advocate
Center for Biological Diversity
cbugbee@biologicaldiversity.org
livestock@biologicaldiversity.org

Robin Silver, M.D.
Co-founder and Board Member
Center for Biological Diversity
rsilver@biologicaldiversity.org
livestock@biologicaldiversity.org

[6] *Id*., page 20.