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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 Cattle Grazing on the Agua Fria National Monument Does Not Jeopardize the Western Yellow-Billed Cuckoo or Gila Chub, And Does Not Adversely Modify or Destroy Their Critical Habitat.

Dear Secretary Haaland, Directors Stone-Manning and Williams, State Director Suazo, Field Manager Ford, Monument Manager Holden, Acting Supervisor Lamb, and Regional Director Lueders,

The U.S. Secretary of the Interior, U.S. Bureau of Land Management ("BLM") Director, U.S. Fish and Wildlife Service ("FWS") Director, BLM Arizona State Director, BLM Hassayampa District Field Manager, Agua Fria National Monument ("AFNM") Manager, FWS Arizona Ecological Services Acting Supervisor, and FWS Regional Director 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, its implementing regulations, 50 C.F.R. §§ 402.01-402.17, the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701-706, and the Antiquities Act, 54 U.S.C. §§ 320301 to 320303.

We file this Notice in connection with: (1) the November 2, 2006 Biological Opinion for Phoenix Field Office Planning Decisions and Associated Activities on Gila Chub in the Agua Fria National Monument (02-21-03-F-0409-R1); (2) the December 18, 2006 Biological Opinion on the Effects of the Agua Fria National Monument and Bradshaw-Harquahala Resource Management Plan on Federally-Listed Species (22410-05-F-0785); (3) BLM's October 1, 2018 Biological Assessment ("BA") and request for informal consultation on the Horseshoe Allotment Grazing Authorization Renewal (DOI-BLM-AZ-P030-2018-0002-EA), and the FWS's November 6, 2018 concurrence ("Concurrence") thereto; and (4) BLM's reliance on these unlawful and arbitrary consultation documents in allowing continued destructive cattle grazing on the Agua Fria National Monument.

Following our ***second*** Notice of Intent for these serious legal issues, filed in 2022, BLM reinitiated consultation for continued grazing on Agua Fria National Monument. Since that time, however, BLM has failed to rein in the unlawful and destructive grazing practices occurring within the Monument, and the resulting damages we've recorded in 2023 are among the worst yet and include desecration of archaeological and cultural treasures.

The ongoing harm to listed species, and the ongoing destruction and adverse modification of critical habitat caused by BLM's authorization of ongoing livestock grazing and the agency's failure to prevent destructive grazing despite commitments to do so, violates ESA Section 7(a)(2).

While undertaking reinitiating and completing consultation on the impacts of livestock grazing on Agua Fria National Monument allotments, the BLM and FWS have also violated and remain in ongoing violation of the ESA Section 7(d) by failing to protect critical habitat designations from "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)."

In this Notice, the Center and Maricopa Audubon provide pertinent and previously ignored background information and identify the legal violations that we intend to challenge in federal court should FWS 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 cattle grazing continues, we are not willing to further delay filing a lawsuit should FWS and BLM continue failing to correct these violations within 60 days.

EXECUTIVE SUMMARY

The Center conducted Cattle Impact Surveys ("CIS") of designated Critical Habitat within the Agua Fria National Monument ("AFNM") grazing allotments between March 28, 2023, and April 7, 2023. This Notice presents photo-documentation of continued widespread and significant grazing impacts on designated riparian Critical Habitat, which is legally supposed to be managed **primarily** for the **recovery** of two species of imperiled, native riparian-obligate species.

The two federally listed vertebrate species at issue here are the Gila Chub (*Gila intermedia*, "Chub"), which was listed as federally endangered and granted Critical Habitat designations in 2005[1] and the Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*, "Cuckoo") which was listed as threatened under the ESA in 2014.[2] Critical Habitat for Cuckoo was designated on April 21, 2021.[3] Although the Cuckoo has yet to receive a Recovery Plan, FWS has recommended that the general guidelines for livestock grazing as expressed in the Southwestern Willow Flycatcher ("WFC") Recovery Plan[4] can serve as yellow-billed cuckoo grazing standards until species-specific recommendations are developed."[5] According to the WFC Recovery Plan, if potential WFC habitat is degraded and grazing is a major stressor, and that habitat is restorable without grazing, then grazing should be excluded.[6]

The applicable Biological Opinions ("BOs") for the grazing program on AFNM are the November 2, 2006, Biological Opinion for Phoenix Field Office Planning Decisions and Associated Activities on Gila Chub in the Agua Fria National Monument (02-21-03-F-0409-R1), and the December 18, 2006, Biological Opinion on the Effects of the Agua Fria National Monument and Bradshaw-Harquahala Resource Management Plan on Federally-Listed Species (22410-05-F-0785). Further, grazing on the Horseshoe allotment is governed by BLM's 2018 Horseshoe Allotment BA and FWS's November 6, 2018 Concurrence for the ten-year renewal of livestock grazing there.

Both BOs and the measures in BLM's 2018 Horseshoe Allotment BA and FWS's 2018 Concurrence have proven to be ineffectual, and neither BO includes Incidental Take Statements ("ITS") that discuss Chub and Cuckoo Critical Habitat and mitigation measures that will adequately address impacts to these species consistent with ESA's protective intent. Well-documented and significant information from the Center's critical habitat surveys and

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[1] FWS. Rules and Regulations. Listing Gila Chub as Endangered with Critical Habitat; Final Rule. Federal Register Vol. 70, No. 211. Wednesday, November 2, 2005.

[2] 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

[3] 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.

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

[5] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from FWS 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.

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

subsequent NOIs over the prior two years (2021-2022) have already resulted in the BLM conceding to reinitiate consultation for grazing in AFNM.

While BLM states that is has reinitiated consultation on the impacts of livestock grazing on Agua Fria National Monument allotments, the BLM has continued greenlighting environmentally destructive business-as-usual grazing management on our National Monument, resulting in ecological damage that equals or exceeds what we have documented previously. Widespread adverse impacts are causing the destruction of designated riparian Chub and Cuckoo Critical Habitat with no enforcement of grazing rules and no way of triggering a "Take". Thus, BLM has violated and remains in ongoing violation of ESA Section 7(a)(2) by allowing the destruction and adverse modification of critical habitat and jeopardizing the continued existence of these listed species.[7] To comply with Section 7(a)(2), BLM must cease immediately livestock grazing that is resulting in such critical habitat degradation.

Environmental damage documented by the Center again in 2023 is substantial and continues to occur as the result of BLM's disregard for the protection of Public Lands, of rare wetland habitat, and of endangered species protection laws. Cattle are chronically grazing, trampling, and defecating in riparian areas that Chub and Cuckoo depend on for their reproduction, their general life history requirements, and thus their eventual recovery. **This occurs every year, throughout the AFNM, regardless of written seasonal limits and restrictions.** Yet again, the vast majority of riparian designations surveyed in 2023 were significantly damaged by authorized and unauthorized grazing. Many riparian ecosystems surveyed were so impacted by cattle that their function as designated Chub and Cuckoo critical foraging and breeding habitat is obviously diminished.

For example, as Cuckoo migrate to Arizona to reproduce during the summer months, they require riparian habitat with dense layers of vegetation in both the subcanopy and ground layers as well as perennial surface water. Food availability for nesting Cuckoo is influenced by the density and species composition of understory and overstory vegetation that supports required insect prey for nesting adults and chicks.[8] Cattle grazing in Agua Fria National Monument has significantly diminished and/or eliminated these habitat characteristics that FWS describes as essential to Yellow-billed Cuckoo nesting and conservation and recovery.

The 5 allotments at issue are **Horseshoe, Box Bar, E-Z Ranch, 2Y**, and **Sycamore** allotments. Cattle impact surveys in 2023 reveal that grazing on the five Agua Fria National Monument allotments has adversely affected, adversely modified, and destroyed, is currently adversely affecting, adversely modifying and destroying, and will continue to adversely affect threatened and endangered species and adversely modify and destroy their critical habitat, in violation of ESA Section 7(a)(2).

The photos presented in this Notice make clear that current grazing management strategies only result in chronic and continued degradation of vital Critical Habitat

[7] 16 U.S.C. § 1536(a)(2).

[8] 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.

components. This includes a complete lack of enforcement and monitoring, but also the strategy of managing threatened and endangered species' habitat by using cattle grazing metrics. Imperiled birds and a suite of other native wildlife would benefit tremendously from full exclusion of cattle grazing in riparian ecosystems.

The ESA 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."[9] 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."[10]

The current AFNM grazing program is obviously diminishing the likelihood of successful Chub and Cuckoo 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 these species is reduced.

The destructive, outdated, and unjustifiable commercial practice of public lands grazing is also occurring against the backdrop of a rapidly warming climate and the prolonged, 1,200-year drought currently facing the southwestern United States[11] and is exacerbating the negative effects of these very serious circumstances.[12]

In addition, BLM and FWS have violated 7(d) by failing to protect critical habitat designations from "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)."[13] Cattle impact surveys in 2023 reveal that grazing on the five Agua Fria National Monument allotments has adversely affected, adversely modified, and destroyed, is currently adversely affecting, adversely modifying and destroying, and will continue to adversely affect threatened and endangered species and adversely modify and destroy their critical habitat 1) in a manner and to an extent not considered in either the 2006 BOs or the 2018 BA and Concurrence[14], and 2) to an extent that is 'irreversible' and 'irretrievable.'[15]

When agencies reinitiate consultation due to significant new information that the authorized action is causing harm to ESA-listed species to an extent that has not been considered, as is the case on the AFNM allotments following the Center's surveys in 2021 and 2022, then it reasonably follows that the action must cease while consultation is completed and new and updated ITS are published and put into effect, in order to comply with ESA Section 7(d). The

[9] 50 C.F.R. § 402.02; 16 U.S.C. § 1531 *et seq.*
[10] *Id.*
[11] 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.
[12] 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.
[13] 16 U.S.C. § 1536(d).
[14] 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.16(a).
[15] 16 U.S.C. § 1536(d).

period of reinitiation is not a free pass to conduct activities that allow ESA violations to continue; the 2006 BOs are still in effect and BLM's legal violations continue to multiply.

Further, the Center intends to challenge BLM's 2018 Horseshoe Allotment BA and FWS's November 6, 2018 Concurrence for the ten-year renewal of livestock grazing on the Horseshoe Allotment, pursuant to the ESA and Administrative Procedure Act. New information, including our 2023 surveys, reveals damage from livestock grazing on the Horseshoe Allotment is ongoing in a manner and to an extent that was not considered in BLM's 2018 BA nor in FWS's 2018 Letter of Concurrence.

BLM's authorization and management of livestock grazing within the five allotments, with its ongoing adverse modification and destruction of critical habitat for the Chub and Cuckoo, also violate ESA Section 7(a)(1), which requires that BLM "utilize [its] authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species" listed under the ESA.[16] The destruction of habitat critical to Chubb and Cuckoo is almost certainly resulting in a "take" of these species by, among other things, depriving them of habitat, food, and cover necessary for survival and restricting their range, and physically displacing them. Thus, livestock grazing "significantly disrupt[s] normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering," resulting in "take" under FWS regulations.[17]

Besides violating the ESA, BLM's management scheme also violates the Administrative Procedure Act requirement that federal decisions are not "arbitrary, capricious, or an abuse of discretion."[18] And in addition to the chronic and excessive overuse that is degrading precious, protected and ESA-designated riparian zones, **the grazing program at AFNM is responsible for damage to invaluable and irreplaceable archaeological treasures** for which the National Monument was created to protect. This is in direct violation of the Antiquities Act, which provides legal protection to historic and prehistoric sites and prohibits excavation and/or destruction of antiquities, and is the Act through which AFNM was created, and the Federal Land Policy and Management Act (FLPMA).[19]

To summarize our concerns and to identify specific ESA violations alleged herein:

1. BLM's livestock grazing within the five allotments: has jeopardized threatened and endangered species and adversely affected, adversely modified, and destroyed their critical habitat; is currently jeopardizing, adversely modifying and destroying their critical habitat; and will continue to jeopardize, and adversely modify and destroy their critical habitat, in violation of ESA Section 7(a)(2). BLM must halt these violations immediately.

2. The BLM's continued reliance on the November 2, 2006, and the December 18, 2006, Biological Opinions, and on BLM's October 1, 2018 BA and FWS's

[16] 16 U.S.C. § 1536(a)(1).
[17] 50 C.F.R. § 17.3.
[18] 5 U.S.C. § 706(2)(A).
[19] Plaintiffs need not provide notice to federal agencies before bringing claims pursuant to the Federal Land Policy and Management Act or the Antiquities Act.

November 6, 2018 concurrence for the Horseshoe Allotment, in allowing continued cattle grazing in designated riparian Critical Habitat on the 5 AFNM allotments noted in this Notice is not legal.

a. The BLM must ensure its own compliance with the ESA and "cannot abrogate its responsibility to ensure that its actions will not jeopardize a listed species" merely by relying upon a Biological Opinion or Concurrence issued by FWS.

b. The BLM must cease reliance on the 2006 BOs and on its 2018 BA and FWS's 2018 Concurrence that allow ESA-listed species to be managed by unenforced seasonal restrictions and disregarded cattle utilization metrics that do not protect riparian-dependent ESA-listed species; this is a disingenuous scheme, and we will continue to document the resulting environmental damage.

3. The BLM's destruction of Chub and Cuckoo critical habitat is causing 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. BLM must halt these violations immediately.

4. Despite BLM's promise to reinitiate consultation, destructive cattle grazing in designated riparian Critical Habitat in AFNM continues as recklessly as ever. This destructive cattle grazing must cease during the new consultation to prevent the BLM from further jeopardizing Chub and Cuckoo and from further and irreversibly destroying their designated riparian Critical Habitat in violation of ESA Section 7(d).

a. Cuckoo recovery hinges on riparian woodland regeneration. Livestock graze unchecked in AFNM riparian zones during growing seasons and during winter/spring germination of native riparian trees[20], leaving sprouts and seedlings vulnerable to consumption by cattle. Failed cohorts of trees represent irreversible and irretrievable losses. This violates ESA Section 7(d).

b. Erosion is irreversible. Poorly managed livestock grazing in AFNM has resulted in accelerated erosion, sedimentation and stream widening. This was a significant problem documented in 2023 and its effects are irreversible. The combined effect of high stream flows with *years of documented overuse* has caused irreversible and irretrievable soil loss, damage to watershed function and damage to critical habitat features.

5. New consultation needs to be completed that meaningfully incorporates the information presented in this and the Center's previous two Notices. When such new information becomes available, or when take has been exceeded, agencies, such as the BLM and FWS, who fail to reinitiate consultation violate 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14. Revised Biological Opinions need to

[20] 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.

meaningfully incorporate the best available science, the intent of ESA-listed species Recovery Plans.[21]

a. 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."

b. The BLM must produce an Incidental Take Statement for Chub and Cuckoo that meaningfully relates to and provides protection for the habitat impacts associated BLM's authorized cattle grazing action. They must provide enforceable protections for designated riparian Critical Habitat essential for long-term species **recovery**.

c. More of the same improper and illegal grazing and the widespread ecological destruction that follows will not change the trajectory of species experiencing chronic declines. New ITS must be produced that have habitat recovery in mind, not BLM impunity. It must be possible for the grazing program to result in a 'Take'.

d. New Biological Opinions must provide reasonable and meaningful discussion on climate change effects to designated habitats and consider additive and cumulative impacts of riparian cattle grazing using the extensive body of scientific literature that exists regarding climate change compounded with cattle grazing.[22]

6. FWS violated the ESA in preparing the November 6, 2018 Concurrence for the Horseshoe Allotment, and the 2018 Concurrence is arbitrary, capricious, and contrary to the ESA.[23] BLM likewise violated the ESA in preparing its 2018 Horseshoe Allotment BA and concluding that livestock grazing as authorized in that allotment was "not likely to adversely affect" the Cuckoo, the Chub, or their critical habitat. Both BLM's and FWS's determinations that authorized grazing within the Horseshoe Allotment is not likely to adversely affect any threatened or endangered species, or critical habitat, is unsupported, arbitrary and capricious,

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[21] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from FWS 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, page 11.

[22] 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.

[23] 16 U.S.C. § 1536; 5 U.S.C. § 706(2)(A).

and inconsistent with the best available scientific evidence and information.[24] Additionally, BLM's reliance on the FWS's 2018 Concurrence violates the agency's independent and continuing duty to insure that its authorization and implementation of the Horseshoe Allotment renewal is 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, in violation ESA Section 7.[25]

7. The BLM must comply with the ESA Section 7(a)(1) obligation to "carrying out programs for the conservation of endangered species."[26] The BLM has a legal duty to conserve, not a duty to degrade. The ongoing destruction and adverse modification of critical habitat identified and described below demonstrates BLM's Section 7(a)(1) violation.

8. The grazing program at AFNM is responsible for damage to invaluable and irreplaceable archaeological treasures for which the National Monument was created to protect. This is in direct violation of the Antiquities Act. This damage, just like the ecological damage we've documented, must cease immediately.

We assert that permanent exclusion of cattle in Chub and Cuckoo critical habitat designations is required so that authorized agency actions follow the legal requirements and intent of the Endangered Species Act and fulfill the affirmative duty of the BLM to conserve listed species.

The BLM's scheme of avoiding protection of designated riparian Critical Habitat by relying on unenforced seasonal restrictions and non-applicable cattle utilization metrics instead of exclosures must end immediately to assure Chub and Yellow-billed Cuckoo survival, reproductive success, and eventual **recovery**. Only complete exclusion of cattle from AFNM

[24] *Id*.
[25] 16 U.S.C. § 1536(a)(2).
[26] 16 U.S.C. § 1536(a)(1).

designated riparian Critical Habitat can protect and rehabilitate these fragile areas.[27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40]

We hope the BLM and FWS 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.

[27] 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.

[28] 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.

[29] 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.

[30] 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.

[31] 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.

[32] 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.

[33] 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.

[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] 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.

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

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

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

[40] 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.

DOCUMENT STRUCTURE

I. GENERAL BACKGROUND

On January 11, 2000, Presidential Proclamation 7263 created the Agua Fria National Monument in southeastern Yavapai County, Arizona. The Monument contains 70,900 acres of BLM-administered land and 1,444 acres of private land. The Monument includes one of the most significant systems of prehistoric sites in the American Southwest, as well as outstanding biological resources. The Monument is primarily composed of semi-desert grassland, and includes important riparian habitat along the Agua Fria River, Silver Creek, and other tributaries.

The AFNM Proclamation identifies objects including riparian forests, diversity of vegetation communities, a wide array of sensitive wildlife species, native fish, and the availability of water to be protected above all else. The January 11, 2000, AFNM Proclamation states:

> "In addition to its rich record of human history, the monument contains other objects of scientific interest. This expansive mosaic of semi-desert grassland, cut by ribbons of valuable riparian forest, is an outstanding biological resource. The diversity of vegetative communities, topographical features, and relative availability of water provide habitat for a wide array of sensitive wildlife species, including the lowland leopard frog, the Mexican garter snake, the common black hawk, and the desert tortoise. Other wildlife is abundant and diverse, including pronghorn, mule deer, and white-tail deer. Javelina, mountain lions, small mammals, reptiles, amphibians, fish, and neotropical migratory birds also inhabit the area. Elk and black bear are present, but less abundant. Four species of native fish, including the longfin dace, the Gila mountain sucker, the Gila chub, and the speckled dace, exist in the Agua Fria River and its tributaries."[41]

Notably, livestock grazing is not mentioned as an object to be protected, but wildlife, ecosystems, and archaeological resources are.

The Monument Proclamation and case law makes clear that protection of Monument objects should be the priority for land managers.[42] The Proclamation states,

> "there are hereby set apart and reserved as the Agua Fria National Monument, for the purpose of protecting the objects identified above, all lands and interests in lands owned or controlled by the United States within the boundaries of the area described on the map entitled ''Agua Fria National Monument'' attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 71,100 acres, which is the smallest area compatible with the proper

[41] Agua Fria National Monument proclamation, Jan. 11, 2000.

[42] *See W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1042 (9th Cir. 2013) (FLPMA's "multiple-use-and-sustainable-yield mandate guides BLM's management of public lands 'except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law.' 43 U.S.C. § 1732(a). Under this provision, BLM must manage the Monument in compliance with the terms of the Proclamation.").

care and management of the objects to be protected", and that "the national monument shall be the dominant reservation."

The two federally listed vertebrate species at issue for ESA violations on AFNM are the Gila Chub and Yellow-billed Cuckoo. Gila Chub are found in only 10-15% of their former range and require perennial pools, uncontaminated water at an appropriate temperature, healthy instream and riparian vegetation and a natural hydrologic regime[43], all of which are impacted and altered by grazing cattle.[44] Small, isolated populations cause Chub to be highly susceptible to threats, including habitat degradation from livestock.[45]

Yellow-billed Cuckoo migrate to Arizona beginning in late 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.[46] Food availability for nesting Cuckoo is influenced by density and species composition of understory and overstory vegetation that supports required insect prey for nesting adults and chicks.[47] But, on Agua Fria National Monument, habitat characteristics that FWS describes as essential to Cuckoo conservation and recovery are allocated to poorly-managed cattle.

Other impacted sensitive, threatened and endangered species within AFNM include Gila Topminnow (*Poeciliopsis occidentalis occidentalis*), Northern Mexican Garter Snake (*Thamnophis eques megalops*), lowland leopard frog (*Lithobates yavapaiensis*), longfin dace (*Agosia chrysogaster*), and desert sucker (*Catostomus clarki*). 179 bird species are known to occur within the Monument's boundaries, including 28 with special conservation status.

The BLM has conceded that the agency's current grazing program at AFNM harms numerous native species, including those listed under the ESA and those identified as Monument objects. For example, BLM stated that their current grazing program results *"in a reduced quality of habitat and water quality in Silver Creek for many species including Gila chub, lowland leopard frog, longfin dace, desert sucker and riparian obligate migratory birds*."[48]

Due to the Center's previous Notices of Intent to sue BLM for ESA violations at AFNM, we were able to 1) compel reinitiation of ESA Section 7(a)(2) consultation[49] to remedy BLM authorized grazing activities that are impairing Yellow-Billed Cuckoo and Gila Chub and

[43] FWS. Rules and Regulations. Listing Gila Chub as Endangered with Critical Habitat; Final Rule. Federal Register Vol. 70, No. 211. Wednesday, November 2, 2005.
[44] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.
[45] FWS. Rules and Regulations. Listing Gila Chub as Endangered with Critical Habitat; Final Rule. Federal Register Vol. 70, No. 211. Wednesday, November 2, 2005.
[46] 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.
[47] 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.
[48] The 2020 Final Environmental Assessment for Horseshoe Allotment Grazing Authorization Renewal, DOI-BLM-AZ-P030-2020-0001-EA, page 43.
[49] 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

destroying their designated Critical Habitat in a manner or to an extent not previously considered, and to reflect changed circumstances due to the designation of Critical Habitat in 2021[50]; and 2) to compel reinitiation of ESA Section 7(a)(2) consultation to prepare new Incidental Take Statements ("ITS") that are not arbitrary and capricious. To the best of the Center's knowledge, BLM has not completed that consultation with FWS.

Although the Center is excluded from the process of drafting new consultation documents, we expect to see objective, clear, and enforceable triggers for reinitiation of consultation, and an adoption of reasonable and prudent measures that are tethered to habitat conditions caused by the permitted activities (i.e., grazing).

During the BLM's reinitiation process, the Center again conducted CIS surveys of designated Critical Habitat within the boundaries of the Agua Fria National Monument between March 28, 2023, and April 7, 2023. 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. Using our CIS data, stream reaches were then analyzed and ranked with absent, light, moderate or significant grazing impacts. Surveys covered approximately 24.41 miles of riparian habitat along streams, 16.56 miles (or 68%) of which were significantly impacted by cattle grazing. Our 2023 CIS surveys clearly demonstrate continued adverse damage to both riparian and upland plant communities from livestock grazing in designated Chub and Cuckoo Critical Habitat. The table below summarizes our 2023 findings.

Allotments	Absent Miles	Light Miles	Moderate Miles	Significant Miles	Grand Total
BLM 2Y			0.29	0.59	**0.88**
BLM Box Bar			0.45	7.46	**7.90**
BLM E-Z Ranch	0.32	0.42	1.85	2.78	**5.37**
BLM Horseshoe		2.41	1.62	5.34	**9.37**
BLM Sycamore			0.48	0.40	**0.88**
Grand Total	**0.32 (1%)**	**2.83 (12%)**	**4.69 (19%)**	**16.56 (68%)**	**24.41**

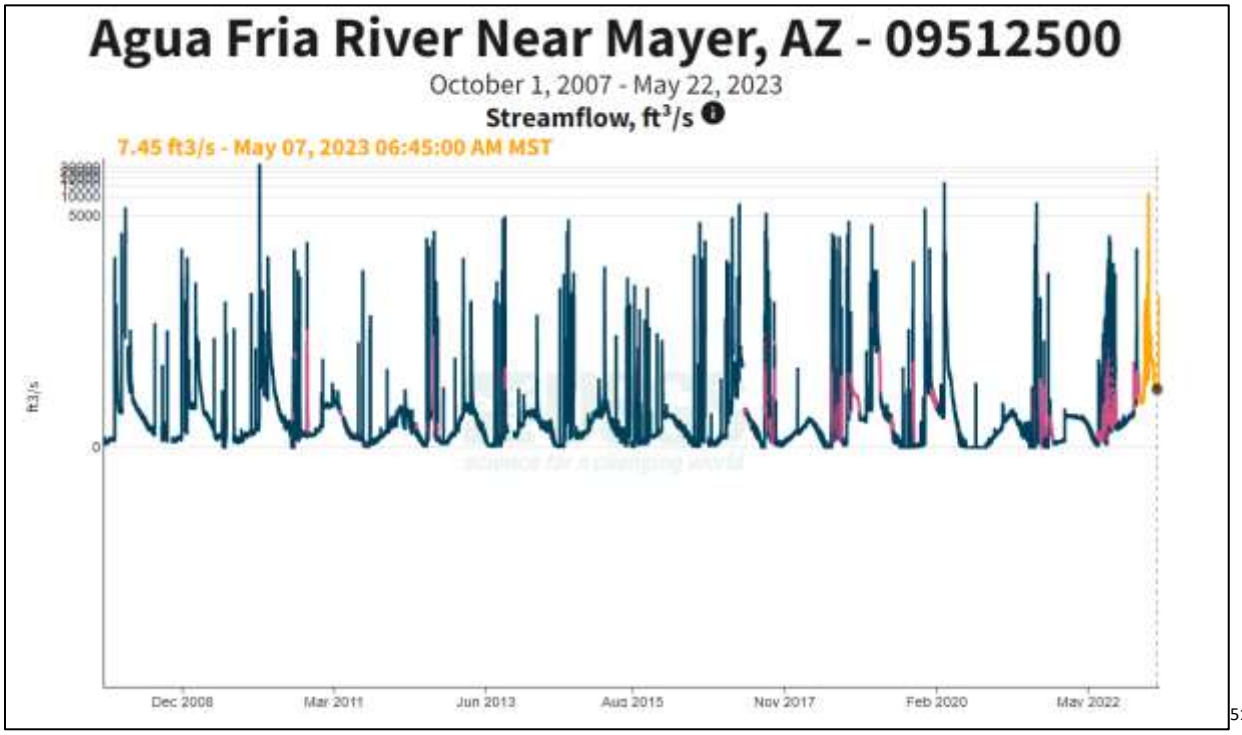
Thus, while undertaking, reinitiating and completing consultation on the impacts of livestock grazing on Agua Fria National Monument allotments, the BLM and FWS have chosen to continue greenlighting destructive business-as-usual grazing management on our National Monument, resulting in environmental damage that equals or exceeds what we have documented

[50] Stipulated Settlement Agreement, *Center for Biological Diversity v. U.S. Bureau of Land Management*, Case No. 3:22-cv-8005-SMB (D. Ariz. Oct. 14, 2022), Doc. 21-1, at page 2 ("since the filing of Plaintiffs' amended complaint, BLM has reinitiated consultation with the Service under Section 7(a)(2) of the Endangered Species Act to cover all of the grazing allotments identified in Plaintiffs' complaint").

previously. Widespread adverse impacts continue to cause the destruction of designated riparian Chub and Cuckoo Critical Habitat with no way of triggering a "Take".

The widespread adverse impacts that the Center has observed and documented yet again on Agua Fria National Monument occur as the result of BLM personnel's disregard for the protection of Public Lands, of rare wetland habitat, of endangered species protection laws, and of irreplaceable archaeological and cultural treasures.

Importantly, our 2023 surveys followed some of the most productive summer monsoon and winter rain seasons in history that occurred in 2021 and 2022. Considering the significant amount of rainfall the region received prior to our 2023 surveys, environmental damage to designated critical habitat, as illustrated in this Notice, is especially concerning and obviously occurs every year regardless of precipitation.



[51]

For example, the above graph shows that in spring 2023, the Agua Fria River had its third highest flow (in orange) since 2007. Such plentiful springtime precipitation and subsequent high-water events are vital to the establishment of native riparian tree seedlings and should be the catalyst for new tree cohorts to recruit into the ecosystem. However, when precipitation flows through a chronically degraded, disturbed and denuded landscape, it will instead result in widespread and significant erosion of soils.

[51] https://waterdata.usgs.gov/ accessed May 23, 2023.

Runoff and erosion are furthered through soil compaction from chronic trampling.[52] Soil compaction leads to inhibited root growth,[53] affects seed production of plants,[54] and reduces the "sponge" effect of riparian areas, leading to reductions in permeability and eventually of perennial water.[55] Other mechanisms of perennial water loss from cattle include changes in channel form through trampling.[56] Trampled desert streams become wider and shallower through bank-shearing and sedimentation, resulting in warmer temperatures and higher rates of evaporation through increased surface area and sun exposure.[57]

Streambanks degraded by cattle hoof action slough away during high flows. These negative and irreversible consequences hinder stream recovery and foster permanent degradation of water and wildlife resources on public lands. Examples of this dire and unwarranted circumstance are clearly illustrated by the photos in this NOI.

[52] 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., 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.

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

[54] 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.

[55] 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.

[56] 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.

[57] 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.

Irreversible erosion and stream degradation in progress within yellow-billed cuckoo critical breeding habitat designations. Note the dislodged clumps of former streambank in the water caused by cattle in Silver Creek (34.254583, -112.043173) and Dry Creek (34.35862, -112.065115), Agua Fria National Monument.

The above photos illustrate how cattle grazing steadily degrade and destabilize stream banks causing increased erosion and sedimentation, and there are many more such photos in this Notice. Such impacts represent permanent and irretrievable loss of soil, and lead to unnaturally wider, shallower, and warmer stream systems and hydrological conditions that permanently impair watershed dynamics, ecosystem function, and native tree regeneration.

Significant streamflow events in good rain years are wasted opportunities for ecosystem renewal if cattle are in the riparian zone altering the channel and consuming sprouts and seedlings. Proper conditions for native tree germination are naturally and inherently restrictive,

such that they do not naturally occur every year.[58] Thus, when well-timed, high-flow events create conditions for seed germination, it is vital that cattle are absent from the riparian zone to allow for seedling establishment and growth.

Aside from direct 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. While studying Date Creek for example, which is grazed/browsed by cattle from November to March, Stromberg (1997) [59] proposed that on cattle-grazed rivers, recruitment should be protected year-round from livestock, for multiple consecutive years, to allow seedlings to grow past browse height. Most riparian miles in Agua Fria National Monument lack young cohorts of riparian trees due to cattle grazing, despite being protected monument objects (i.e. "riparian forests") and despite occurring within ESA-designated critical habitat which is set aside for species recovery.

In combination with dire climate projections that predict increasingly hotter and drier summers with less predictable precipitation[60], furthered vegetation loss is expected and worsened by a lack of monitoring, a lack of enforcement of grazing rules and limits, and though the use of grazing promotion and perpetuation schemes that are not relevant to the protection of endangered species and their designated riparian Critical Habitat.

It is obvious that managing for riparian tree establishment is not a priority for BLM or FWS, yet this is a prerequisite for Cuckoo recovery.[61] A lost cohort of riparian trees and cattle-created conditions that prevent plant recovery represent irreversible damages to Cuckoo critical habitat that hinders recovery. This is a violation of ESA Section 7(a)(2) as well as Section 7(d).

The following images are examples of the condition of Cuckoo Critical Habitat on Agua Fria National Monument grazing allotments, prior to arrivals of Cuckoo to raise chicks:

[58] 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.

[59] 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.

[60] 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.

[61] Wohner, P.J., Laymon, S.A., Stanek, J.E., King, S.L. and Cooper, R.J., 2021. Challenging our understanding of western Yellow-billed Cuckoo habitat needs and accepted management practices. Restoration Ecology, 29(3), p.e13331.

Widespread soil compaction in grazed yellow-billed cuckoo critical breeding habitat inhibits plant growth, even in years with high rainfall. 34.296879, -112.012435, April 3, 2023 (1); and 34.361028, -112.061924, March 29, 2023 (2).

Not only does such reckless and irresponsible management fail 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 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 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."[62]

As our surveys have again revealed, and as FWS' own species experts have documented on public lands elsewhere in southeastern Arizona (for example on the Coronado National Forest), use of cattle grazing utilization and rest-rotation schemes to manage critical habitat has resulted in widespread degradation, loss, and regeneration impediment to essential woody riparian vegetation.

For example, On October 29, 2018, **FWS' own species experts said** in the "Supplemental Summary of Concerns"[63] 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."[64]
> "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** …"[65]

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

> "**We all discussed that the range grazing measures are inadequate to measure needs for sensitive/listed for wildlife**."[66]

In November 2021, **FWS's lead Yellow-billed Cuckoo species expert reported** in "Survey Results at Five Sites on the Coronado National Forest"[67]:

> "**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

[62] 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.
[63] Coronado National Forest (FS) Grazing Consultation Supplemental Summary of Concerns, U.S. Fish and Wildlife Service, October 29, 2018.
[64] *Id.,* page 1.
[65] *Id.,* page 3.
[66] Email from Sferra, Susan, to: Servoss, Jeff; RE: suggestion from Shawn [Sartorius] on grazing BO; July 5, 2019.
[67] 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.

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**."[68]

On November 11, 2021, **FWS' lead Yellow-billed Cuckoo species expert reported** in "Grazing Impacts Input"[69]:

"**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**."[70]

"**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)[71] is just one of the most recent studies."[72]

"**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**."[73]

"**Perennial plant recruits can be killed by just a few cattle in drainage bottoms in the same season, regardless of time of year**."[74]

"**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**."[75]

"**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 change, but we can control livestock impacts from grazing, trampling, erosion, and soil compaction**."[76]

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[68] *Id.*
[69] Grazing Impacts Input, Susan Sferra, November 11, 2021.
[70] *Id*., page 1.
[71] 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.
[72] Grazing Impacts Input, Susan Sferra, November 11, 2021, page 1.
[73] *Id.,* page 2.
[74] *Id.*
[75] *Id.*
[76] *Id.,* page 3.

"**Utilization rates for grazing often exceed standards for healthy ecosystems and should be adjusted.**"[77]

And according to recent peer-reviewed scientific publication by Wohner et al. (2021),

> "while early successional habitat needs may not be the only limiting factor, our study suggests the lack of young habitat and/or understory vegetation, which is also habitat for insect prey for many species, may be limiting Cuckoos", and "Cuckoos readily move to the youngest stands (McNeil et al. 2019) indicating choice for young stands when water is not limiting. Movement to very young patches is characteristic of other early successional species like Southwestern Willow Flycatcher (*Empidonax traillii extimus*; Theimer et al. 2018)."[78]

For the five AFNM allotments at issue[79], cattle grazing in Chub and Cuckoo Critical Habitat is governed by cattle forage utilization standards and seasonal restrictions which are not adequate for the protection of threatened and endangered riparian species. By allocating vital habitat constituents to cattle during winter and spring, critical habitat designations for Chub and Cuckoo are left diminished at the time of breeding and over the long term. This problem is amplified by the BLM perpetuating a dishonest management scheme that, instead of providing riparian cattle exclosures, relies on **unenforced** seasonal limitations and **unmonitored** cattle grazing utilization metrics to govern cattle management.

AFNM has unfortunately become a case study on poorly managed, improper and illegal grazing operations. The photos in this Notice, for the third consecutive year, clearly demonstrate that BLM's authorization and management of livestock grazing is continuing to result in the destruction and adverse modification of critical habitat, violating ESA Section 7(a)(2).

The Center has recent, successful legal challenges against the environmentally damaging rangeland programs of Apache-Sitgreaves,[80] Coconino,[81] Gila,[82] Prescott[83] and Tonto[84] National Forests. However, in violation of ESA Sections 7(a)(1), 7(a)(2), 7(d), and 9, widespread adverse

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[77] *Id.*

[78] Wohner, P.J., Laymon, S.A., Stanek, J.E., King, S.L. and Cooper, R.J., 2021. Challenging our understanding of western Yellow-billed Cuckoo habitat needs and accepted management practices. Restoration Ecology, 29(3), p.e13331.

[79] Horseshoe allotment, Box Bar allotment, E-Z Ranch allotment, 2Y allotment, and Sycamore allotment within the Agua Fria National Monument.

[80] 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.

[81] 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.;

[82] 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.

[83] 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.;

[84] 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.;

destruction of designated riparian Critical Habitat and take of listed species continues BLM lands managed by the Hassayampa Field Office.

The ultimate duty to protect and conserve listed species lies with the action agency under, inter alia, ESA Section 7(a)(1). Incidental Take Statements provide for mitigation measures that adequately address impacts on listed species consistent with ESA's protective intent,[85] that are causally linked between the action and the take of the species,[86] and that provides for a take-triggering metric that is finite and measurable.[87] Consequently, an action agency's reliance on an inadequate, incomplete, or flawed biological opinion is arbitrary, capricious, and unlawful.[88] The November 6, 2006 and December 18, 2006 Biological Opinions, as well as BLM's October 1, 2018 BA and FWS's November 6, 2018 concurrence thereto, do not contain ITS that protect Chub and Cuckoo Critical Habitat, nor do they contain mitigation measures that adequately address impacts to these species consistent with ESA's protective intent.[89] And while they are presumably being reworked in ongoing reinitiated consultation as result of the Center's previous litigatory action against the BLM, the same damages continue within AFNM critical habitat designations in violation of the Endangered Species Act's Section 7(d).

Termination of the destructive cattle grazing is required by ESA Section 7(a)(2) which prohibits the destruction or adverse modification of critical habitat.

In addition, termination of the destructive cattle grazing during consultation is required by Section 7(d) of the Endangered Species Act to prevent the BLM from further jeopardizing the continued existence of an endangered species and from causing further destruction and adverse modification of designated riparian Critical Habitat. Specifically, Section 7(d) states that the BLM must stop "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)."[90]

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."[91] 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."

Besides violating the ESA, managing critical habitat solely through unenforced seasonal restrictions and cattle grazing metrics also violates the Administrative Procedure Act, a requirement that federal decisions are not "arbitrary, capricious, or an abuse of discretion."[92]

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[85] *Center for Biological Diversity v. BLM*, 698 F.3d 1101, 1115 (9th Cir. 2012).
[86] 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).
[87] *Center for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139 (D. Ariz. 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.").
[88] *See, e.g.*, *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010).
[89] *Center for Biological Diversity v. BLM*, 698 F.3d 1101, 1115 (9th Cir. 2012).
[90] 16 U.S.C. § 1536(d).
[91] 50 C.F.R. § 402.02.
[92] 5 U.S.C. § 706(2)(A).

Improper grazing management in Agua Fria National Monument has also violated the Antiquities Act through desecration of irreplaceable cultural treasures, the presence of which was a primary driver of the very creation of Agua Fria National Monument.

CATTLE GRAZING IN ARID LANDS

Because the BLM range program routinely ignores decades of peer-reviewed science pertaining to the impacts of grazing to arid land ecosystems, this section was deemed necessary as a refresher for those agencies charged with recovering habitat for threatened and endangered species.

Livestock grazing causes declines in diversity, abundance, and species composition of riparian-obligate wildlife communities from direct or 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.[93] 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.[94]

Cattle 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.[95] Reduced herbaceous vegetation leads to accelerated soil loss due to increased exposure of soils to downpour events and reduced sediment filtering capabilities of the vegetation.[96] Litter is reduced by trampling and churning into the soil, thus reducing cover for soil, plants, and wildlife.[97] 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 gaseous emissions spurred by a reduction in vegetative ground cover, particularly at lower elevations.[98]

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[93] Platts, W.S., 1990. Managing fisheries and wildlife on rangelands grazed by livestock: a guidance and reference document for biologists.

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

[95] 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.

[96] 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.

[97] 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.

[98] 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.

Hoof action causes loss of cryptobiotic soil crusts and increases soil compaction, erosion, and gullying.[99] Compaction of soil by livestock hooves results in decreased rainfall 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.[100] An experiment in Arizona specifically documented how losses in vegetation have led to increases in interrill areas, decreases in runoff infiltration, and the possibility of greater susceptibility to frost action.[101]

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.[102] A review of grazing impacts on hydrological impacts concluded that grazing at any intensity reduced water infiltration.[103] 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.[104] 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.[105]

Livestock grazing causes long-term changes to entire watersheds and their functions.[106] Cattle alter 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.[107] These alterations in stream conditions can rapidly affect the entire food chain.

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[99] 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., 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.

[100] 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.

[101] 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.

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

[103] 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.

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

[105] 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.

[106] 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.

[107] 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 cattle, stream bank degradation and significant, ongoing erosion of yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.243014, -112.062547. April 6, 2023.

RIPARIAN TREE REGENERATION

Most western riparian areas are already deficient in willow understory and nearly devoid of overstory cottonwood due to for-profit cattle grazing.[108,109] Foraging cattle 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

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

[109] 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.

means.[110,111,112,113,114] These unwarranted ecological impacts have resulted in doomed woodlands where old cottonwood trees in the overstory are dying with no new recruitment to replace themselves.[115,116,117,118]

Grazing has long been recognized as a detriment to the reproduction of riparian trees.[119,120,121,122,123,124,125,126,127,128] For example, cattle interfere directly with the cottonwood tree's life cycle, and thus cattle presence can directly preclude cottonwood recruitment and forest

[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] 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.

[112] 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*.

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

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

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

[116] 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*.

[117] 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.

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

[119] 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.

[120] 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).

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

[122] 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.

[123] 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).

[124] 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.

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

[126] 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.

[127] 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).

[128] 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.

regeneration.[129,130,131,132] Such impacts of cattle grazing on riparian vegetation are magnified in arid and semi-arid regions[133,134] Many bird species associated with mature cottonwood trees are rare or endangered in the Southwest.[135,136] Loss of riparian habitat regeneration caused by poorly managed grazing is an acknowledged and prominent threat to Cuckoo, according to FWS.[137]

Yellow-billed Cuckoo have disappeared throughout most of their former range due to habitat loss.[138,139] 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."[140]

According to FWS,

> "the primary threat to the cuckoo is loss or fragmentation of high-quality riparian habitat suitable for nesting (FWS 2014a, b). Habitat loss and degradation results from several interrelated factors, including alteration of flows in rivers and streams,

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[129] 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.

[130] 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).

[131] 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.

[132] 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.

[133] 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.

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

[135] 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.

[136] 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.

[137] 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.

[138] 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.

[139] 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.

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

> 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, wildfire, establishment of nonnative vegetation, drought, and prey scarcity due to pesticides."[141]

Also, according to FWS,

> "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."[142]

According to FWS, "where tree regeneration and survival are lacking, suitable cuckoo habitat may cease to exist or may support fewer cuckoos when mature trees die."[143] 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."[144]

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.

Cattle 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.[145] Without mechanisms of riparian exclusion, cattle degrade riparian conditions by removing vegetation, preventing tree establishment, compacting soil, increasing surface runoff, and

[141] 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.

[142] 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.

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

[144] *Ibid.*

[145] 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.[146,147,148,149,150] In combination, such landscape alterations can eliminate and prevent the regeneration of native riparian plant communities and foster establishment of invasive species.[151,152,153,154] Riparian zones suffering from long-term grazing effects are also more susceptible to damage during extreme flooding, further diminishing the proper conditions to support sprouting trees.[155] This is certainly a problem in AFNM allotments.

Diminished riparian vegetation, as observed throughout AFNM grazing allotments, 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 habitat.[156] Riparian vegetation and intact grasses, required to capture sediment during rainy seasons, become seedbeds for germination and growth of the riparian vegetation upon which Cuckoo depend.

Significantly grazed riparian zones, like those documented annually in AFNM, 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 a variety of riparian obligates including Cuckoo for nesting and foraging.[157] Therefore, grazing of the severity that we have observed on the AFNM has immediate short-term impacts on Cuckoo fitness as well as long-term impacts that gradually cause the loss of riparian forests, which is also a listed Monument object.

The 2014 Yellow-billed Cuckoo ESA determination clearly states that "managing grazing so that native riparian trees and shrubs will regenerate on a regular basis is especially

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

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

[148] 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.

[149] 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.

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

[151] 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.

[152] 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.

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

[154] 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.

[155] 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.

[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 48552.

[157] *Ibid.*

beneficial."[158] Unfortunately, managing grazing for riparian tree regeneration is not the case in AFNM allotments. As illustrated in this Notice, unauthorized cattle 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 Cuckoo populations by removing habitat structure and associated prey base.

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 be adopted to encourage regeneration of young forest." [159] Not only does BLM lack a grazing program with this management objective in mind, but once again we demonstrate in this Notice that current BLM cattle management is preventing recovery of threatened and endangered species by blatantly prioritizing cattle and practicing hands-off cattle 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 Chub and Cuckoo habitat within the boundaries of AFNM.

INEFFECTUAL RANGE MANAGEMENT STRATEGIES

For the five BLM-managed allotments at issue in this Notice[160], cattle grazing in Chub and Cuckoo Critical Habitat is governed by cattle forage utilization standards and seasonal restrictions which are 1) inadequate for the protection of threatened and endangered riparian species, and 2) go unmonitored and unenforced. By allocating vital habitat constituents to cattle during winter and spring, critical habitat designations for Chub and Cuckoo are left diminished at the time of breeding and over the long term. The photos in this Notice clearly illustrate this problem.

Grazing impacts on AFNM are measured using unenforced livestock forage standards with no ecological context.[161] Structural habitat requirements for wildlife, including imperiled nesting birds like Cuckoo, cannot be assessed, measured, or managed by utilization or stubble height measurements, according to rangeland experts.[162] There are many impacts of grazing that utilization or stubble measurement do not capture, including cattle use of preferentially selected and highly palatable forage species known as "ice cream species." This term has been used for

[158] 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.

[159] 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

[160] Horseshoe allotment, Box Bar allotment, E-Z Ranch allotment, 2Y allotment, and Sycamore allotment within the Agua Fria National Monument.

[161] 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.

[162] 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.

exceptionally palatable plants since at least the 1930's.[163] 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."[164] Highly palatable and protein rich, cattle selectively browse Fremont cottonwood seedlings and saplings[165, 166,167] and can wipe out entire seedling reestablishment sites in a single week through hoof action alone.[168]

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."[169] Generally, when the key species and key area are considered properly used, the entire pasture is considered correctly used.[170] 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 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%)."[171]

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."[172] Here, it is directly inferred that watering areas receive *improper* use, which is exactly what the Center tends to observe in our surveys. In many cases, the designated riparian Critical Habitat *is* the watering point or valley bottom where cattle concentrate, and therefore is the 'sacrifice area'!

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

[164] 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.

[165] 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).

[166] 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).

[167] 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.

[168] 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.

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

[170] *Ibid.*

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

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

To reiterate, 'sacrifice areas' are not monitored. Monitoring points are typically located ¼ to 1 mile away from these sacrifice areas, so that the true environmental impact of cattle simply and routinely goes unrecorded. There should be no 'sacrifice areas' in designated critical habitat. Full cattle 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 riparian zones and endangered species in the first place, it appears there has been complete lack of adherence to utilization limits on the AFNM allotments, and likewise no monitoring of cattle consumption or trampling of cottonwood and willow seedlings. Our photos certainly don't reflect the conservative use of herbaceous ground cover. Instead, it appears fully removed.

Based on direct observations presented again in this Notice, there is clearly no monitoring or enforcement of seasonal limitations. Monitoring is supposed to be done prior to, during, and after the livestock have used a riparian pasture. We have documented unauthorized cattle in riparian zones on every visit to AFNM over the last 3 years.

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 would certainly not allow germination and critical growth periods of riparian trees to advance in size past the reach of cattle and would result in significant impairment of critical habitat to the point that its function as designated Cuckoo critical foraging and breeding habitat is diminished.

Although the Cuckoo has yet to receive a Recovery Plan, FWS has recommended that the general guidelines for livestock grazing as expressed in the Southwestern Willow Flycatcher ("WFC") Recovery Plan[173] "can serve as yellow-billed cuckoo grazing standards until species-specific recommendations are developed."[174] And according to the WFC Recovery Plan, if potential WFC habitat is degraded and grazing is a major stressor, and that habitat is restorable sans grazing, then grazing should be excluded.[175]

According to the WFC Recovery Plan, "If livestock grazing is a major stressor, implement general livestock grazing guidelines from Appendix G[176] in currently suitable or potentially suitable habitat."[177] 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

[173] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Pages 26-27.
[174] Correspondence to Field Manager, Tucson Field Office, Bureau of Land Management, Tucson, Arizona from FWS 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.
[175] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan, Appendix G, Albuquerque, New Mexico. Page 26.
[176] In the 2002 WFC Recovery Plan, 'Appendix G' focuses specifically on "*Management of Livestock Grazing in the Recovery of the Southwestern Willow Flycatcher*".
[177] U.S. Fish and Wildlife Service. 2002. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico page. 114.

by low stature (3-4m willows) and only provisional grazing in all other habitat types (assuming that grazing is not a significant stressor).[178]

> "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."

In the case of AFNM, FWS believes in good faith that the BLM will follow their stated grazing program as it appears on paper. They have not. Instead, the BLM is negating its responsibilities to assist in the recovery of imperiled Cuckoo by turning a blind eye to destructive land use activities. As we demonstrate in this Notice, management strategies to promote and protect Cuckoo habitat are ignored completely by the BLM on the ground. Cattle in AFNM allotments have contributed to loss of habitat and reduced productivity of habitat through improper grazing, overgrazing, and possibly harassment, displacement and reduced survivorship of Cuckoo due to unauthorized cattle.

Like WFC, it is vitally important in that riparian and understory vegetation remain intact at the onset of Cuckoo arrivals in Arizona for breeding beginning at the end of May.

To corroborate this statement, FWS 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."[179]

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

According to FWS, "if an area with grazing activity degrades riparian habitat attributes and prevents long-term health and persistence of these systems, it is considered overgrazing."[180] In another example, FWS defines overgrazing as grazing activities that reduce quality and

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

[179] 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.

[180] 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.

quantity of breeding habitat.[181] FWS 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."[182] Cuckoo usually occupy wider, shallower portions of drainages with gradually sloped walls than the steeper narrower portions of the canyons.[183] These are also areas that are more accessible and attractive to cattle, necessitating the immediate and dire need for cattle exclosures.

Considering the BLM's abysmal track record for managing cattle in AFNM, full exclusion is required to sustain and promote Chub and Cuckoo habitat on the Monument. It is the best way to mitigate climate change and aridification. It is also an essential moral, ethical, and legal obligation.

Considering the previous section on riparian tree regeneration, seedlings of cottonwood, willow, and other riparian trees tend to recover rapidly after exclusion of livestock grazing.[184,185,186] Removal of cattle grazing has been correlated with dramatic increases in dense willow thickets necessary for Cuckoo and other riparian species.[187,188,189] 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 cattle (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.[190]

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."[191]

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[181] *Ibid.,* page 20853.
[182] 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.
[183] The December 4, 2017, Biological Opinion for Catalina-Rincon FireScape Project, AESO/SE 02EAAZ00-2016-F-0773, p. 57.
[184] 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.
[185] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.
[186] 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.
[187] 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.
[188] Klebenow, D.A. and Oakleaf, R.J., 1984. Historical avifaunal changes in the riparian zone of the Truckee River.
[189] Taylor, D. M., and C. D. Littlefield. 1986. Willow flycatcher and yellow warbler response to cattle grazing. American Birds 40:1169-1173.
[190] 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.
[191] Smith, J.J., 1990. Recovery Of Riparian Vegetation on An Intermittent Stream Following Removal of Cattle. In California Riparian Systems Conference, p. 217.

Previously, elimination of grazing in Little Ash Creek in Arizona (a stream in AFNM) quickly resulted in changes in tree size distribution, with much higher density of young cottonwoods and documented stand reproduction on the ungrazed site.[192] This 40-year old study provides direct evidence that riparian systems on AFNM can recover sans cattle, that is if replication of these results haven't already been precluded by advancing climate change and drought. The hour is getting late.

In another local example in Pima County's Cienega Creek, FWS 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."[193]

Cattle exclusion is a vital first step of restoration, and arid-lands restoration cannot occur without this exclusion in place. FWS freely acknowledges that meaningful protection and restoration of remaining Cuckoo habitat involves livestock exclusion and active restoration of native vegetation and trees. [194] It is time to begin **mitigating** significant grazing damages and **mitigating** climate change and drought. Full exclusion from cattle is required in AFNM if the vitally important stretches of perennial water contained therein are to continue supporting wildlife and human society alike.

DROUGHT

Public-land range conditions have generally worsened in recent decades,[195] perhaps due to the reduced productivity of these lands caused by past grazing in conjunction with a changing

[192] 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.

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

[194] Correspondence to Sallie Diebolt, Chief, Arizona Branch, Department of the Army from FWS 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.

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

climate.[196] 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.[197] 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.[198]

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.[199] [200] In combination with dire climate projections that predict increasingly hotter and drier summers with less predictable precipitation,[201] status quo cattle 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, cattle 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 and upon maintaining a global temperature rise less than 1.5°C above pre-industrial standards.

Cattle damage ecosystem resources in ways that accentuate and amplify climate impacts.[202] 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 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.[203]

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[196] 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.

[197] 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.

[198] 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.

[199] 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

[200] 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.

[201] 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.

[202] 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.

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

In terms of water resources, the spatial extent of perennial water on the Agua Fria River, decreased ~26% from 2008 to 2016.[204] Lack of perennial water will result in significant direct losses of riparian vegetation communities. The rapid loss of water from the Agua Fria River ecosystem should be enough justification to not add the additional stressor of domestic cattle on AFNM. Barriers and exclosures will help the river recover, thus ensuring compliance with the law and protection of AFNM objects.

"Water quantity" is specifically listed in the AFNM proclamation, which states "there is hereby reserved, as of the date of this proclamation and subject to valid existing rights, a quantity of water sufficient to fulfill the purposes for which this monument is established". According the 2018 Land Health Evaluation for Horseshoe allotment permit renewals, the BLM stated "PFC data also shows that groundwater pumping and drought are likely having an impact on Indian Creek".[205]

Removal of water also goes against the Monument proclamation. Since water quantity on AFNM is already in the process of rapid reduction, we hold that no additional riparian stressors be deliberately allowed in AFNM riparian areas, including cattle. To conserve Chub and Cuckoo and their required habitat, BLM management must stop perpetuating improper grazing practices that degrade rare ecosystems and amplify climate change impacts.

One good water year won't be enough to reverse the state's growing drought. Water, or lack thereof, defines Arizona's future. In these 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.

II. STATUTORY BACKGROUND

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[206] The statute's primary goal is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved."[207] 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."[208]

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.[209] Section 4 also requires the Secretary to develop and implement recovery plans

[204] Allen, D.C., Kopp, D.A., Costigan, K.H., Datry, T., Hugueny, B., Turner, D.S., Bodner, G.S. and Flood, T.J., 2019. Citizen scientists document long-term streamflow declines in intermittent rivers of the desert southwest, USA. Freshwater Science, 38(2), pp.244-256.
[205] Horseshoe Allotment Renewal Land Health Evaluation, page 43.
[206] *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978).
[207] 16 U.S.C. § 1531(b).
[208] *Hill*, 437 U.S. at 184.
[209] 16 U.S.C. § 1533(a).

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.[210]

To receive the protection of the ESA, a species must first be listed by the Secretary of the Interior as "endangered" or "threatened."[211] 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 FWS, and the duty to ensure that those agencies' actions do not jeopardize the continued existence of listed species or adversely modify critical habitat.[212]

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."[213]

Thus, the ESA requires FWS to designate Critical Habitat at the same time a species is listed.[214] Any designation of Critical Habitat must be based on the "best scientific data available."[215]

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."[216] "Conservation," is defined in turn to include all methods that 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."[217] As such, "the purpose of establishing 'critical habitat' is for the government to carve out territory that not only is necessary for the species' survival but also is essential for the species' recovery."[218]

Once a species is listed and critical habitat designated, Section 7(a)(2) of the ESA requires each federal agency, in consultation with a federal wildlife agency (in this case, FWS), 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.[219] 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."[220] "Destruction or adverse modification" of critical habitat

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[210] 16 U.S.C. § 1533(f).
[211] *See* 16 U.S.C. § 1533.
[212] *See Hill*, 437 U.S. at 180-82.
[213] H.R. Rep. No. 94-887 at 3 (1976).
[214] 16 U.S.C. §§ 1533(a)(3)(A)(i), 1533(b)(6)(C).
[215] *Id.* § 1533(b)(2).
[216] *Id.*
[217] *Id.* § 1532(3).
[218] *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1070 (9th Cir. 2004).
[219] 16 U.S.C. § 1536(a)(2).
[220] 50 C.F.R. § 402.02.

means "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation or a listed species."[221] And "conservation," as noted, means recovery to the point where the ESA's protections are no longer needed.[222] 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 FWS whether any listed or proposed species may be present in the area of the proposed action.[223] 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.[224] If the agency determines that its proposed action may affect any listed species or critical habitat, the agency must engage in "formal consultation" with FWS.[225]

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 FWS.[226] Formal consultation results in a biological opinion detailing "how the agency action affects the species or its critical habitat."[227]

It is essential that FWS define the scope of formal consultation to encompass the entire proposed action.[228] 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."[229] FWS is accordingly required to consider "all phases" of the agency action in its analysis.[230]

FWS 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."[231]

Federal agencies must "use the best scientific and commercial data available" in assessing a proposed action's impact on a protected species.[232]

To complete formal consultation, FWS must provide the action agency with a "biological opinion" explaining how the proposed action will affect the listed species or habitat.[233] The biological opinion "is required to address both the 'no jeopardy' and 'no

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[221] *Id.*
[222] 16 U.S.C. § 1532(3).
[223] 16 U.S.C. § 1536(c)(1); 50 C.F.R. § 402.12.
[224] *Id.*
[225] 50 C.F.R. § 402.14.
[226] 50 C.F.R. § 402.02.
[227] 16 U.S.C. § 1536(b)(3)(A).
[228] *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)).
[229] *Id*.
[230] *Id.*
[231] 50 C.F.R. § 402.02 (emphasis added).
[232] 16 U.S.C. § 1536(a)(2).
[233] 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14.

adverse modification' prongs of Section 7."[234] If FWS concludes in the biological opinion that the proposed action will jeopardize the continued existence of a listed species, or will result in the destruction or adverse modification of critical habitat, FWS must outline "reasonable and prudent alternatives" to the proposed action that FWS believes would not jeopardize the listed species or result in the destruction or adverse modification of its Critical Habitat.[235]

If the biological opinion concludes that the proposed action is not likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat, FWS must provide an "incidental take statement," specifying the amount or extent of such incidental taking on the species, any "reasonable and prudent measures" that FWS considers necessary or appropriate to minimize such impact, and setting forth the "terms and conditions" that must be complied with by the agency to implement those measures.[236] In order to monitor the impacts of incidental take, the agency must report the impact of its action on the listed species to FWS.[237] If during the course of the action the amount or extent of incidental taking is exceeded, the agency must reinitiate consultation immediately.[238]

After a species has been listed and with every action evaluated by a FWS 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."[239] With a FWS biological opinion where a listed species is likely to be adversely affected, FWS must provide an Incidental Take Statement and Reasonable and Prudent Measures 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.[240] Incidental Take Statements provide for mitigation measures that adequately address impacts on listed species consistent with ESA's protective intent,[241] that are causally linked between the action and the take of the species,[242] and that provides for a take-triggering metric that is finite and measurable.[243]

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.[244]

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[234] *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)).
[235] 16 U.S.C. § 1536(b)(3)(A).
[236] 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).
[237] 50 C.F.R. § 402.14(i)(3).
[238] 50 C.F.R. § 401.14(i)(4); *see also* 50 C.F.R. § 402.16.
[239] 16 U.S.C. § 1532, 50 C.F.R. § 17.21, 16 U.S.C. § 1536(b)(4).
[240] 16 U.S.C. § 1536(a)(2).
[241] *Center for Biological Diversity v. BLM*, 698 F.3d 1101, 1115 (9th Cir. 2012).
[242] 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).
[243] *Center for Biological Diversity v. Rumsfeld,* 198 F. Supp. 2d 1139 (D. Ariz. 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.").
[244] *See, e.g.*, *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010).

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."[245] A court's review under this standard, while "narrow," is also "searching and careful."[246]

Reinitiation of Section 7 consultation is required and shall be requested by the Federal action agency or by FWS 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.[247]

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)"[248] [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 FWS, to "carry out programs for the conservation" of listed species.[249] This provision imposes an "affirmative duty on each federal agency to conserve each of the species listed." *Sierra Club v. Glickman*, 156 F.3d 606,616 (5th Cir. 1998); *accord Pyramid Lake Paiute Tribe of Indians v. Dep't of the Navy,* 898 F.2d 1410, 1416-17 (9th Cir. 1990) (noting that federal agencies have "affirmative obligations to conserve under [S]ection 7(a)(1)"). "Conserve" is defined by the Act to mean *recovery, i.e.,* the "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary."[250] 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. Vilsack,* 276 F. Supp. 3d 1015 (D. Nev. 2017).[251]

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 FWS to ensure that BLM's activities will not jeopardize survival and recovery of these species.[252]

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[245] 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).
[246] *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 378 (1989).
[247] 50 C.F.R. § 402.16.
[248] 16 U.S.C. § 1536(d).
[249] 16 U.S.C. § 1536(a)(1).
[250] *Id*.
[251] Order, *Center for Biological Diversity, et al., Plaintiffs, v. Tom Vilsack, et al*.,; Case No. 2-13-cv-01785-RFB-GWH (D. Nev. August 1, 2017).
[252] 16 U.S.C. § 1536(a)(2) and 50 C.F.R. § 402.14(g).

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)"[253] [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 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."[254]

The Antiquities Act was the first U.S. law to provide general legal protection of cultural and natural resources of historic or scientific interest on public lands. Its aim is to protect both historic and prehistoric sites and to prohibit excavation and/or destruction of such antiquities.

The American Indian Religious Freedom Act (AIRFA) commits the federal government "to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian ... including, but not limited to, access to sites,

[253] 16 U.S.C. § 1536(d).
[254] 5 U.S.C. § 706(2)(A).

use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites."

Executive Order 13007, Indian Sacred Sites, applies to all federally owned lands except Indian trust lands (that is, reservations). It requires the BLM and other agencies that manage federal lands to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; and (2) avoid adversely affecting the physical integrity of such sites.

Executive Order 13175, Consultation and Coordination with Tribal Governments requires consultation with Indian Tribal Governments in "formulating or implementing policies that have tribal implications" and aims in part "to strengthen the United States' government-to-government relationships with Indian tribes." Consultation processes must embody the unique relationship between the U.S. and the Indian tribe(s).

III. YELLOW-BILLED CUCKOO AND GILA CHUB BACKGROUND

Western Yellow-billed Cuckoo- The U.S. Fish and Wildlife Service listed the Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) as a Threatened Species in 2014.[255] This listing compiled by FWS 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.[256]

Yellow-billed Cuckoo are facing steep and continued population declines in its western breeding grounds owing primarily to loss of native habitat.[257] Once a fairly common summer resident from throughout Arizona, FWS concluded that Arizona Yellow-billed Cuckoo populations declined significantly starting in the 1970's and that this was directly paralleled by the decline of its preferred breeding habitat, cottonwood-willow riparian communities.[258] 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[259] and AFNM is no exception.

California once possessed the greatest number of nesting Yellow-billed Cuckoos north of Mexico. California's Yellow-billed Cuckoo populations have been decimated, predictably following the loss, fragmentation, and degradation of Yellow-billed Cuckoo breeding habitat consisting of mature and contiguous cottonwood-willow riparian gallery forests. Arizona now

[255] 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.
[256] *Ibid.*
[257] 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.
[258] FWS. 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.
[259] 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.

maintains the largest Yellow-billed Cuckoo populations in the United States even though it is still experiencing dramatic population declines.[260]

Optimal reproductive habitat and associated micro-environments for Yellow-billed Cuckoo have been established, are well known, and are thoroughly documented. Optimal Yellow-billed Cuckoo 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.[261] 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.[262]

According to FWS in their 2021 final determination of cuckoo 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."[263]

Food availability for Yellow-billed Cuckoo is largely influenced by the health, density, and species composition of understory and overstory vegetation.[264] FWS 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 to be an essential physical or biological feature for this species.[265] 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

[260] Krzysik 2014. Western Yellow-billed Cuckoo Critical Habitat in Arizona. Technical Report. Prescott, AZ 12 October 2014.
[261] 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.
[262] 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.
[263] *Ibid*., page 20815.
[264] 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.
[265] 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.

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).[266]

Yellow-billed Cuckoo require multi-aged and multi-height forests for breeding and foraging, or alternatively patches of overstory trees and/or young riparian trees adjacent to mesquite terraces.[267] Vegetative structure and cover must be diverse and varied.[268] Yellow-billed Cuckoo often nest where young trees interface with more mature trees, such as along the scour zone of rivers or newly planted revegetation sites.[269] Humid and cooler conditions created by surface and subsurface moisture and trapped by the multilayered canopy appear to be important habitat parameters for the Yellow-billed Cuckoo.[270] In southeastern Arizona, Yellow-billed Cuckoo are known to breed in ephemeral and intermittent drainages as well, as they do in Sonora.[271] These breeding habitats are composed of more xeroriparian trees like oak, sycamore, hackberry, juniper, ash, walnut, and desert willow. Elevated humidity is especially important in southeastern Arizona, where Yellow-billed Cuckoo breed in intermittent and ephemeral drainages.[272] According to FWS 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 Yellow-billed Cuckoo. This is especially true in ephemeral, tree-lined xeroriparian drainages."[273]

Despite the importance of understory vegetation and ground cover to Yellow-billed Cuckoo, especially in their breeding grounds in AZ that are protected with critical habitat designations, cattle grazing degrades these important features in riparian and aquatic habitats throughout the arid Southwest.[274] Overgrazing in riparian (including xeroriparian) habitat has been identified by FWS as an ongoing threat to Yellow-billed Cuckoo habitat that may require special management, especially where water is limited. Grazing at any level can impact riparian habitat according to FWS.[275]

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[266] 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.

[267] 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 20839.

[268] *Id*., page 20842.

[269] The December 4, 2017, Biological Opinion for Catalina-Rincon FireScape Project, AESO/SE 02EAAZ00-2016-F-0773, p. 49.

[270] *Ibid.*

[271] 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 20836.

[272] *Id.,* page 20940.

[273] *Id.,* page 20815.

[274] 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.

[275] 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.

FWS discusses the full suite of threats to Yellow-billed Cuckoo brought on by 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 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."[276]

Furthermore, FWS defines overgrazing as "grazing activity (that) degrades riparian habitat attributes and prevents long-term health and persistence of these systems.[277] In another example, FWS defines overgrazing as grazing activities that reduce quality and quantity of breeding habitat.[278] FWS has defined "'poor' livestock management'" as:

> "We consider poor livestock management to mean grazing conducted in a manner not in accordance with approved allotment management plans **or otherwise considered adverse to maintaining natural habitat characteristics**."[279]

Cattle grazing in Yellow-billed Cuckoo critical habitat, as we illustrate in this Notice, has significantly impacted riparian systems, has fouled water, and has left little to no herbaceous food and cover for invertebrate communities. We again demonstrate that abundant and healthy riparian vegetation is missing from grazing allotments that contain Yellow-billed Cuckoo critical habitat in the AFNM. Indeed, according to FWS, 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.[280] This Notice strongly supports FWS' claim that overgrazing is a ubiquitous threat to Yellow-billed Cuckoo.

Gila Chub- Gila Chub were granted Endangered species status in 2005 and received critical habitat designation concurrently with their listing.[281] Historically, Gila Chub were found in approximately 43 rivers, streams, and spring-fed tributaries throughout the Gila River basin in

[276] 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.

[277] 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.

[278] *Ibid.,* page 20853.

[279] 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.

[280] 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.

[281] FWS. Rules and Regulations. Listing Gila Chub as Endangered With Critical Habitat; Final Rule. Federal Register Vol. 70, No. 211. Wednesday, November 2, 2005.

southwestern New Mexico, central and southeastern Arizona, and northern Sonora, Mexico[282] but now occur in only 10-15% of their former range. These fish require perennial pools, uncontaminated water at an appropriate temperature, healthy instream and riparian vegetation and a natural hydrologic regime[283] all of which are impacted and altered by grazing cattle[284] Gila chub breeding pulses which begin in February and last into the fall.[285]

Small, isolated populations leave Chub highly susceptible to threats, including habitat degradation from livestock.[286] In an extensive 2004 survey of impaired riparian zones in southeastern Arizona, Stefferud and Stefferud (2004)[287] provide several examples of how small, arid-land streams can heal following cattle exclusion, including improvement in vegetative cover, stream function and extent of perennial water. Chub and other native, imperiled fish will ultimately require this management action to persist in an increasingly hotter and drier climate.[288]

The November 2, 2006 Biological Opinion for activities that impact Gila Chub on the Agua Fria National Monument goes into full discussion on the ways cattle grazing is detrimental to Gila Chub and their habitat:

> "The March 1 season-of-use end date will reduce the impacts to eggs and fry. GC [Gila Chub] spawn in warmer water temperatures than generally occur at on the AFNM in the winter (Nelson 1993, Weedman et al. 1996). Livestock use of streambanks as movement corridors, regardless of time-of-year, can effect GC habitat. Gila Chubs are highly secretive, preferring quiet deeper waters, especially pools, or remaining near cover including overhanging terrestrial vegetation, boulders, undercut banks and fallen logs (Rinne and Minckley 1991, Nelson 1993).
>
> Steep vertical banks which develop undercuts are easily sheared off by hoof action (Rosgen 1996). Undercut banks are also lost when streambank vegetation is removed. Dense roots help support undercut banks; reduced plant vigor from livestock overgrazing can reduce root mass and increase erosion and mass wasting of undercut and vertical banks (Micheli and Kirchner 2002). This decreases GC habitat suitability and increases the lateral erosion of the stream reach. The major effects to GC will be increased susceptibility to predators from the loss of cover and the direct losses of preferred deep-pool and undercut-bank habitats.
>
> Reduced riparian vegetation reduces streambank stability which increases the width while decreasing the depth of the channel (Simon and Collison 2002). This morphologic change decreases the stream's ability to transport sediment through the

[282] *Id.*
[283] FWS. Rules and Regulations. Listing Gila Chub as Endangered with Critical Habitat; Final Rule. Federal Register Vol. 70, No. 211. Wednesday, November 2, 2005.
[284] Fleischner, T.L., 1994. Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), pp.629-644.
[285] U.S. Fish and Wildlife Service. 2015. Gila chub (*Gila intermedia*) Draft Recovery Plan. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico. 118 pp., page 5.
[286] *Id.*
[287] Jerome A. Stefferud Sally E. Stefferud 2004. Aquatic and Riparian Surveys of Selected Stream Courses on Sierra Vista and Nogales Ranger Districts, Coronado National Forest, Cochise and Santa Cruz Counties, Arizona.
[288] 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.

system. Increased streambank erosion can increase sediment into a stream; up to 85% of the overall sediment yield into a stream can be attributed to streambank erosion (Simon et al. 2000). Decreased depths reduce generated shear stress needed to move sediment. If there is an increased supply of sediment from excessive upland or streambank erosion, fine sediments can accumulate and reduce the volume and depth of pools used by GC (Hilton and Lisle 1993). Excessive sediment deposition in riffle habitats between pools can act as barriers to fish movement throughout the reach during low-flow periods (Schaefer 2001). During low-flow periods fish can be concentrated in small pools with limited water volume. The effects of low water volume and decreased water quality can be exacerbated by dry weather and/or drought (Magoulick and Kobza 2003), which can reduce the quality of or eliminate GC habitat.

The effects of livestock wading in stream courses are of particular concern in the intermittent reaches of streams where GC could be found. Between the period of spring runoff and summer monsoons, GC can be stranded in pools ranging in size from several thousand square feet to just a few square feet. As these habitats begin to dry, GC can become more susceptible to disturbances and predation, and livestock drinking from and trampling the pools can eliminate this habitat. The very nature of these small pockets of habitat leads to the potential for livestock to harm and/or harass GC in pool situations. Livestock impacts to fish or fish eggs are not well documented in the literature. However, there are a few citations available that have documented livestock and humans trampling fish and/or fish eggs. For example, Minckley (1973) noted that Sonoran topminnow (*Poeciliopsis occidentalis*) were eliminated from Astin Spring by livestock trampling.

During dry winter periods when base flows are low and open surface water is limited, livestock water consumption can be a concern. This would cause special concern if dry conditions cause a lack of upland waters which would concentrate livestock in the stream bottom. There is also the potential for livestock to drink occupied GC habitat dry, under certain conditions. According to Vallentine (1990), the Forest Service (USFS 1969) states that cattle will drink 12 to 15 gallons per day per individual and the University of Nebraska Extension Service (http://www.ianr.unl.edu/pubs/Beef/g372.htm) estimates that at an average maximum daily temperature of 90 degrees Fahrenheit an individual animal (bull, growing cattle, finishing cattle, nursing calves, heifers) may use from 10 to 23 gallons of water per day.

Since cattle will have access to a stock tank for water in the Boone Pasture, water usage in riparian areas will most likely be limited due to the proposed fall-winter use. However, it may be possible for a small number of cattle to deplete a small pool very quickly (depending upon temperature, time in riparian pool, etc.) and indirectly kill any GC that may occupy the pool. This is especially an issue during drought conditions."[289]

[289] The November 2, 2006 Biological Opinion for the Existing Phoenix Field Office Planning Decisions and Associated Activities on Gila Chub in the Agua Fria National Monument, 02-21-03-F-0409-R1, pg. 13-14.

IV. GENERAL ENDANGERED SPECIES ACT VIOLATIONS

Cattle on Agua Fria National Monument are managed solely on promised seasonal restrictions and utilization limits that appear to exist only on paper. We document again in this 2023 Notice that the BLM's unenforced and unmonitored seasonal grazing scheme leaves Chub and Cuckoo critical breeding habitat fully impacted by cattle at the onset of reproductive seasons. We demonstrate in this Notice that habitat components required by Cuckoo, including understory vegetation, regenerating willow and successional riparian forest are removed, diminished, and precluded both long term and prior to reproductive seasons.

Thus, without monitoring and enforcement, the livestock exclusion times are ineffectual and do not encompass winter/spring germination of native riparian trees, leaving sprouts and seedlings vulnerable to consumption by cattle. Highly palatable and protein rich, cattle selectively browse Fremont cottonwood seedlings and saplings[290, 291, 292] and can wipe out entire seedling reestablishment sites in a single week through hoof action alone.[293] This negative effect of cattle 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.[294]

ESA Section 7 requires federal agencies, in consultation with FWS, 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 FWS, 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

[290] 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).

[291] 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).

[292] 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.

[293] 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.

[294] 16 U.S.C. § 1536(a)(2).

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 FWS 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 FWS. 50 C.F.R. § 402.14. To complete formal consultation, FWS must provide the action agency with a "biological opinion" explaining how the proposed action will affect the listed species or habitat. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14.

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

V. SPECIFIC ENDANGERED SPECIES ACT VIOLATIONS

The December 18, 2006, Biological Opinion confirms authorization of seasonal grazing only (November 1 – March 1 annually) in riparian areas on the AFNM.[295] This Biological Opinion remains in effect until a newer Biological Opinion is issued. Similarly, the BLM's 2018 BA for the Horseshoe Allotment, with which FWS concurred, limits livestock grazing in riparian pastures to what BLM calls the winter non-growing season (November 1-March 1).[296]

The Center's annual surveys of critical habitat designations on AFNM have established that the BLM's 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.[297]

Despite the Center forcing the BLM to reinitiate consultation in 2022, the BLM and FWS have violated and remain in ongoing violation of the ESA by failing to rein in the impacts of BLM's livestock grazing program on AFNM allotments, in violation of ESA Sections 7(a)(1), 7(a)(2), 7(d), and 9. The Center holds that if reinitiation of consultation has been forced, due to significant new information that the authorized action is causing harm to ESA-listed species to an extent that has not been considered, then it should reasonably follow that the action must cease until consultation is completed and new and updated ITS are published and put into effect.

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."[298]

Cattle Impact Surveys on Agua Fria National Monument

The purpose of our Cattle Impact Survey (CIS) surveys was to determine and quantify cattle impacts in designated critical habitat within the AFNM allotments. Staff of the Center for Biological Diversity conducted Cattle Impact Surveys in designated critical habitat on Agua Fria National Monument grazing allotments including the **Horseshoe allotment, Box Bar allotment, E-Z Ranch allotment, 2Y allotment, and Sycamore allotment,** from March 28- April 7, 2023. Our professional field biologists 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. We documented and quantified livestock grazing impacts to riparian vegetation, soils, and streambanks and examined condition of cattle exclosure fencing. We also documented nonfunctional or absent exclosure fencing, damaged mesquite terraces and impacts

[295] The December 18, 2006 Biological Opinion on the Effects of the Agua Fria National Monument and Bradshaw-Harquahala Resource Management Plan on Federally-Listed Species AESO/SE 22410-05-F-0785, page 10.

[296] BLM, Biological Assessment Horseshoe Allotment Grazing Authorization Renewal (Oct. 2018) ("BLM 2019 Horseshoe Allotment BA") at 9; Memorandum of FWS Field Supervisor, Arizona Ecological Field Service Office to BLM, Field Manager, Hassayampa Field Office (Nov. 6, 2018) ("FWS 2018 Concurrence") at 3.

[297] 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.16(a).

[298] 5 U.S.C. §706(2)(A).

to streams and surface waters. We further document that grazing is chronically occurring outside of permitted grazing seasons in riparian areas on the National Monument.

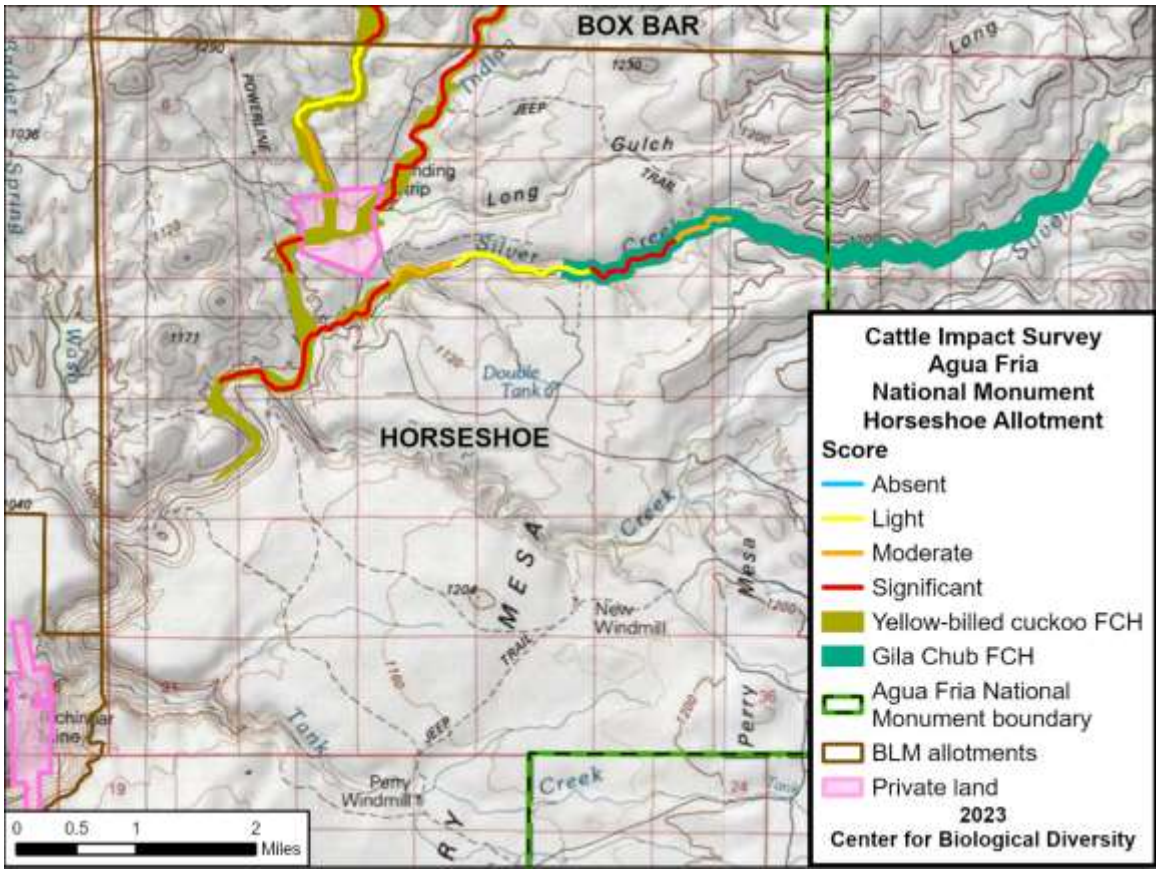
Data were recorded and multiple georeferenced photo points were taken along each survey segment to document evidence of livestock impacts. These data represent comprehensive and quantifiable inspections of riparian and xeroriparian conditions on Agua Fria National Monument allotments. The Center's surveys demonstrated chronic degradation of ecological conditions within designated critical habitat on the National Monument.

Using our survey data, designated stream reaches of the Agua Fria River, Indian Creek, Sycamore Creek, and Little Ash Creek were analyzed to illustrate overall grazing impacts. Following field surveys, each 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.

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 March 28- April 7, 2023, within designated **yellow-billed cuckoo** and **Gila Chub** critical habitat on the **Horseshoe allotment, Box Bar allotment, E-Z Ranch allotment, 2Y allotment, and Sycamore allotment** on the Agua Fria National Monument.

Horseshoe allotment, Agua Fria National Monument

Between March 28-April 6, 2023, we documented unauthorized cattle and their impacts in all three major riparian reaches of the Horseshoe allotment, including Indian Creek, Silver Creek, and the Agua Fria River.



Map 1. Center 2023 Cattle Impact Survey results for Horseshoe Allotment.

The Center's Cattle Impact Survey found 5.34 miles of riparian areas (57% of those surveyed) within the Horseshoe allotment significantly impacted by livestock grazing, 1.62 miles (17%) moderately impacted, and 2.41 miles (26%) lightly impacted.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.241041, -112.072977. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.241587, -112.071071. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.241551, -112.068058. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.241551, -112.068058. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.241371, -112.067474. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.241122, -112.066854. April 6, 2023.

Unauthorized bank degradation in grazed yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.240322, -112.065645. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.24026, -112.065403. April 6, 2023.

Unauthorized cattle and bank degradation in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.240435, -112.06380. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.243083, -112.062681. April 6, 2023.

Unauthorized cattle and stream bank degradation in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.243014, -112.062547. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat at the Silver Creek/ Agua Fria River confluence, Horseshoe allotment. 34.246566, -112.06124. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.247295, -112.061872. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo riparian critical breeding habitat in the Agua Fria River, Horseshoe allotment. 34.255523, -112.066358. March 29, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat on the Agua Fria River, Horseshoe allotment. 34.256564, -112.066804. March 29, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat on the Agua Fria River, Horseshoe allotment. 34.256807, -112.066355. March 29, 2023.

Fresh, unauthorized cattle tracks in yellow-billed cuckoo critical habitat lead directly into the Horseshoe Ranch base property. 34.257968, -112.063319. March 29, 2023.

An example of an ungrazed patch of yellow-billed cuckoo critical breeding habitat on the Horseshoe allotment. 34.278016, -112.055426. March 29, 2023.

Unauthorized cattle impacts in Gila Chub critical habitat in Silver Creek on the Horseshoe allotment. 34.260513, -112.001995. March 28, 2023.

Unauthorized cattle impacts in Gila Chub critical habitat in Silver Creek on the Horseshoe allotment. 34.256726, -112.010072. March 28, 2023.

Unauthorized cattle impacts in Gila Chub critical habitat in Silver Creek on the Horseshoe allotment. 34.255674, -112.013448. March 28, 2023.

Unauthorized cattle leaving Gila Chub critical habitat in Silver Creek on the Horseshoe allotment. 34.255702, -112.013639. March 28, 2023.

Unauthorized cattle impacts in Gila Chub critical habitat in Silver Creek on the Horseshoe allotment. 34.255686, -112.013781. March 28, 2023.

Grazed deergrass in Gila Chub critical habitat in Silver Creek, Horseshoe allotment. 34.254155, -112.017062. March 28, 2023. Chronic removal of deergrass will hinder the recovery of Silver Creek.

Trampled spring in Gila Chub critical habitat in Silver Creek, Horseshoe allotment. 34.254264, -112.023552. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.254012, -112.044064. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.253639, -112.045104. March 28, 2023. Note the protected patch of grass under the tree compared to the trampled and compacted foreground.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.253991, -112.047712. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.25380, -112.048887. March 28, 2023.

Thirteen unauthorized cattle were observed in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.251632, -112.051845. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.251417, -112.052578. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.251435, -112.052994. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.250624, -112.052897. March 28, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Silver Creek, Horseshoe allotment. 34.25042, -112.052777. March 28, 2023.

Unauthorized trampling of a natural spring in yellow-billed cuckoo critical breeding habitat in Indian Creek, Horseshoe allotment. 34.279196, -112.039771. April 6, 2023.

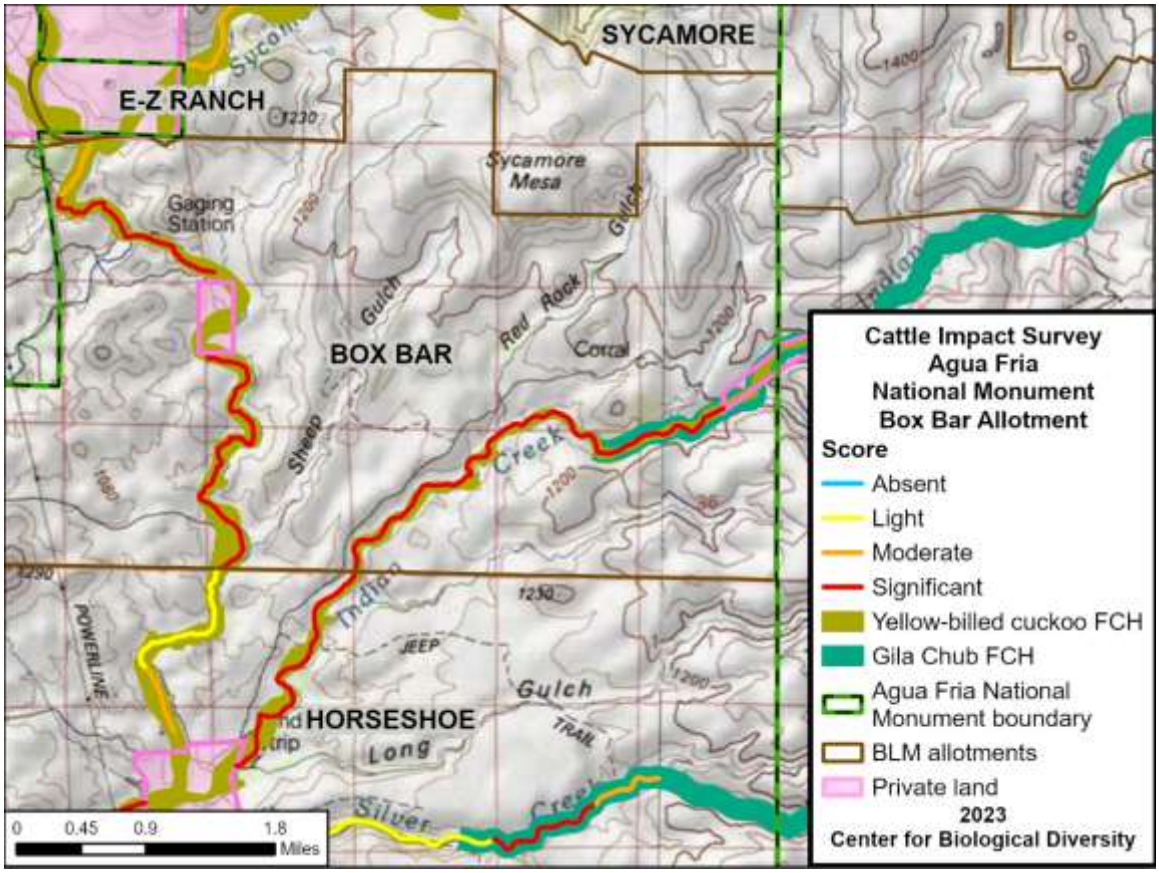
Fresh tracks from unauthorized cattle in yellow-billed cuckoo critical breeding habitat in Indian Creek, Horseshoe allotment. 34.272297, -112.043865. April 6, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical breeding habitat in Indian Creek, Horseshoe allotment. 34.271497, -112.045338. April 6, 2023. Note the islands of grass protected by catclaw acacias, compared to the rest of the grazed landscape.

Unauthorized cattle tracks in yellow-billed cuckoo critical breeding habitat in Indian Creek, Horseshoe allotment. 34.272159, -112.045064. April 6, 2023.

Box Bar allotment, Agua Fria National Monument

Excessive and unauthorized use is a documented and chronic problem on the Box Bar allotment of Agua Fria National Monument.[299] In 2006[300], and for seven consecutive years from 2008-2015 when the last Environmental Assessment for permit renewal was published for Box Bar allotment, cattle impacts met or exceeded use thresholds well before the end of the allowed season of use (November 1 – March 1), and typically achieved **overuse** by October-November[301] (i.e. excessive use before the authorized grazing season even began).



Map 2. Center 2023 Cattle Impact Survey results for Box Bar Allotment.

The Center's Cattle Impact Survey found 7.46 miles of riparian areas (94% of those surveyed) within the Box Bar allotment significantly impacted by livestock grazing, 0.45 miles (6%) moderately impacted, and no miles lightly impacted.

[299] November 2015 Environmental Assessment DOI-BLM-AZ-P030-2013-0001-EA for Box Bar Allotment-Indian Creek Riparian Management. Use thresholds are defined as 25% stream bank alteration and/or riparian vegetation utilization at 50% herbaceous, 30% woody species, page 2.

[300] The November 2, 2006 Biological Opinion for the Existing Phoenix Field Office Planning Decisions and Associated Activities on Gila Chub in the Agua Fria National Monument, 02-21-03-F-0409-R1, page 1.

[301] November 2015 Environmental Assessment DOI-BLM-AZ-P030-2013-0001-EA for Box Bar Allotment-Indian Creek Riparian Management. Use thresholds are defined as 25% stream bank alteration and/or riparian vegetation utilization at 50% herbaceous, 30% woody species, page 2.

Unauthorized cattle impacts in Gila chub and yellow-billed cuckoo critical habitat in Indian Creek, Box Bar allotment. 34.296336, -111.998842. April 3, 2023.

Unauthorized cattle impacts in Gila chub and yellow-billed cuckoo critical habitat in Indian Creek, Box Bar allotment. 34.296166, -111.999599. April 3, 2023.

Grazed Gila chub and yellow-billed cuckoo critical habitat in Indian Creek, Box Bar allotment. 34.294473, -112.008506. April 3, 2023.

Unauthorized cattle impacts in Gila chub and yellow-billed cuckoo critical habitat in Indian Creek, Box Bar allotment. 34.294804, -112.003718 (1); 34.295474, -112.00259 (2). April 3, 2023.

Trampled seep in yellow-billed cuckoo critical habitat in Indian Creek, Box Bar allotment. 34.295143, -112.008937. April 3, 2023.

Unauthorized cattle impacts in yellow-billed cuckoo critical habitat in Indian Creek, Box Bar allotment. Soil compaction inhibits plant growth even in years with high rainfall. 34.296879, -112.012435. April 3, 2023.

Grazed and compacted yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.296373, -112.018586. April 3, 2023.

Cattle impacts concentrate around a nonfunctioning water gap in yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.297369, -112.014836. April 3, 2023.

Grazed yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.296092, -112.019575. April 3, 2023.

Grazed and compacted yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.293386, -112.022243. April 3, 2023.

Grazed and compacted yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.292045, -112.023941. April 3, 2023.

Grazed and degraded yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.290701, -112.024957. April 3, 2023.

Unauthorized cattle tracks in yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.289712, -112.029403. April 3, 2023.

Grazed yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.287084, -112.032384. April 3, 2023.

Grazed yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.28687, -112.032726. April 3, 2023. Cattle trails can become hot spots of erosion in heavy rain years.

Grazed yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.281308, -112.037828. April 3, 2023.

Bank degradation (1) and a trampled seep (2) in yellow-billed cuckoo critical riparian habitat in Indian Creek, Box Bar allotment. 34.296373, -112.018586 (1); 34.283662, -112.037909 (2). April 3, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.321554, -112.072773. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.32103, -112.073066. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.320419, -112.073478. March 23, 2023. A roadside guardrail helps keep cattle in the riparian zone.

Erosion and soil loss advances in grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.318681, -112.07463. March 23, 2023.

Grazed and trampled historic site in yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.318359, -112.074777. March 23, 2023.

Grazed, trampled and eroding yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.317834, -112.074525. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.317294, -112.073444. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.31706, -112.072882. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.315074, -112.066829. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.31459, -112.064073. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.314525, -112.063896. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.314462, -112.063383. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.314462, -112.063383. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.31398, -112.061184. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.31398, -112.061184. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.31398, -112.061184. March 23, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.311456, -112.057107. March 23, 2023.

Degraded stream banks in grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.311456, -112.057107. March 23, 2023.

Degraded stream banks in grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.302335, -112.054788. March 27, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.311218, -112.056104. March 23, 2023.

Degraded stream banks and active erosion in grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.302211, -112.054013. March 27, 2023.

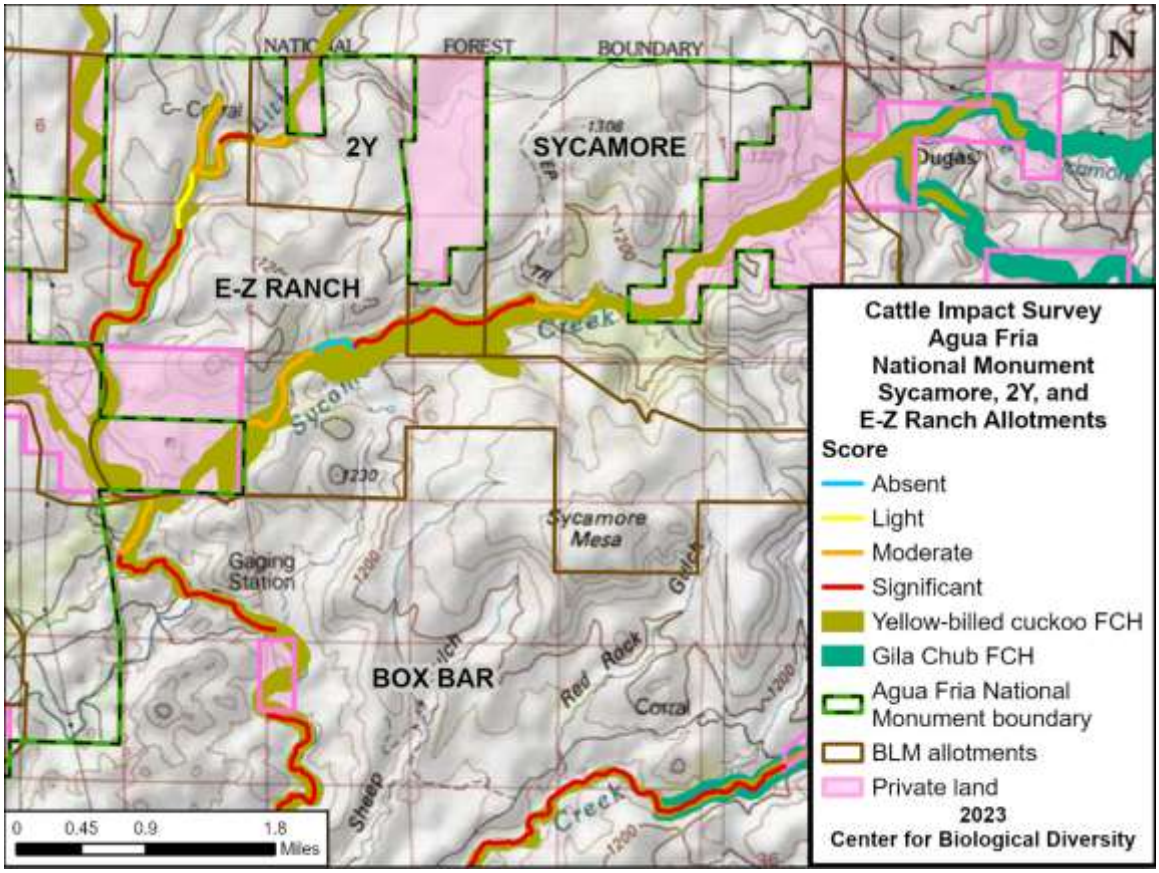
Grazed and eroding yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.294061, -112.051913. March 27, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.287181, -112.056095. March 27, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.285601, -112.05353. March 27, 2023.

Grazed yellow-billed cuckoo critical habitat along the Agua Fria River, Box Bar allotment. 34.284848, -112.052986. March 27, 2023.

E-Z Ranch allotment, Agua Fria National Monument



Map 3. Center 2023 Cattle Impact Survey results for Sycamore, 2Y, E-Z Ranch Allotments.

The Center's Cattle Impact Survey found 2.78 miles of riparian areas (52% of those surveyed) within the E-Z Ranch allotment significantly impacted by livestock grazing, 1.85 miles (34%) moderately impacted, 0.42 miles (8%) lightly impacted, and 0.32 miles (6%) where impacts were absent.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.343041, -112.040659. March 30, 2023.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.341519, -112.042361. March 30, 2023.

Decomposed cattle remains in yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.341279, -112.043479. March 30, 2023.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.340948, -112.045585. March 30, 2023.

Bank degradation advances erosion in grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.34091, -112.045238. March 30, 2023.

Bank degradation advances erosion in grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.338983, -112.052226. April 7, 2023.

Continued bank degradation in grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.337691, -112.054218. April 7, 2023.

Bank degradation in grazed yellow-billed cuckoo critical habitat along Sycamore Creek, E-Z Ranch allotment. 34.336925, -112.054949. April 7, 2023.

Erosion advances in grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.361347, -112.059435. March 29, 2023.

Grazed yellow-billed cuckoo critical breeding habitat along Little Ash Creek, E-Z Ranch allotment. 34.361028, -112.061924. March 29, 2023.

Erosion advances in grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.361028, -112.061924. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.357722, -112.06350. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.351486, -112.067782. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.347229, -112.070037. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.346657, -112.070863. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.346471, -112.071045. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, E-Z Ranch allotment. 34.350192, -112.068274. March 29, 2023.

Unauthorized cattle sign in yellow-billed cuckoo critical habitat along Dry Creek, E-Z Ranch allotment. 34.364309, -112.063197 (1); 34.363499, -112.063791 (2). March 29, 2023.

Unauthorized cattle sign in grazed yellow-billed cuckoo critical habitat along Dry Creek, E-Z Ranch allotment. 34.36302, -112.064097. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Dry Creek, E-Z Ranch allotment. 34.36249, -112.064591. March 29, 2023.

Erosion in progress as clumps of vegetation slough off into Dry Creek due to grazing in yellow-billed cuckoo critical habitat, E-Z Ranch allotment. 34.35862, -112.065115. March 29, 2023.

Grazed and compacted yellow-billed cuckoo critical habitat along Dry Creek, E-Z Ranch allotment. 34.359484, -112.065039. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.35435, -112.077899. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.353546, -112.077117. March 29, 2023.

Bank chiseling and stream widening in progress in grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.351854, -112.075484. March 29, 2023.

Continued bank degradation in grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.35103, -112.073425. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.348832, -112.072647. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.345064, -112.072085. March 29, 2023.

A decomposed cow in grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.34761, -112.073193. March 29, 2023.

Unauthorized grazing in yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.344773, -112.07222 (1); 34.343021, -112.073725 (2). March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Ash Creek, E-Z Ranch allotment. 34.34212, -112.076853 (1); 34.34077, -112.077563 (2). March 29, 2023.

2Y allotment, Agua Fria National Monument

The Center's Cattle Impact Survey found 0.59 miles of riparian areas (67% of those surveyed) within the 2Y allotment significantly impacted by livestock grazing, 0.29 miles (33%) moderately impacted, and no miles lightly impacted.

Unauthorized livestock in yellow-billed cuckoo critical habitat along Little Ash Creek, 2Y allotment. 34.361392, -112.053789 (1); 34.360478, -112.056358 (2). March 29, 2023.

Erosion advances in yellow-billed cuckoo critical habitat along Little Ash Creek, 2Y allotment. 34.360467, -112.056724. March 29, 2023.

Unauthorized grazing in yellow-billed cuckoo critical habitat along Little Ash Creek, 2Y allotment. 34.36116, -112.05413. March 29, 2023.

Grazed yellow-billed cuckoo critical habitat along Little Ash Creek, 2Y allotment. 34.360461, -112.057172. March 29, 2023.

Irreversible soil loss advances in grazed yellow-billed cuckoo critical habitat along Little Ash Creek, 2Y allotment. 34.360584, -112.057549. March 29, 2023.

Numerous branches and trees have been cut along Little Ash Creek, 2Y allotment, to ease cattle access to riparian critical habitat. 34.361307, -112.058558. March 29, 2023.

An open gate in grazed yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343273, -112.03027. March 30, 2023.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.342881, -112.031149. March 30, 2023.

Grazed and compacted yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343278, -112.032349. March 30, 2023. Note the islands of grass protected by trees, compared to the rest of the grazed landscape.

Grazed and eroding yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.342873, -112.033261. March 30, 2023.

Grazed and compacted yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343416, -112.034007. March 30, 2023.

Grazed and compacted yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343258, -112.034674. March 30, 2023. Note the islands of green vegetation under trees where cattle cannot access.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343638, -112.036926. March 30, 2023.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343719, -112.038107. March 30, 2023. Note the stark contrast in vegetation between the foreground and the brushy slope that cattle generally avoid.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek, 2Y allotment. 34.343253, -112.034372. March 30, 2023.

Sycamore allotment, Agua Fria National Monument

The Center's Cattle Impact Survey found 0.4 miles of riparian areas (45% of those surveyed) within the 2Y allotment significantly impacted by livestock grazing, 0.48 miles (55%) moderately impacted, and no miles lightly impacted.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek in Sycamore allotment. 34.344619, -112.018184. March 30, 2023.

Grazed yellow-billed cuckoo critical habitat along Sycamore Creek in Sycamore allotment. 34.344326, -112.020032. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.344128, -112.022096. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.344087, -112.022441. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.345121, -112.024053. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.345363, -112.024535. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.344972, -112.02497. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.344717, -112.026954. March 30, 2023.

Advancing erosion in grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.344554, -112.027556. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.344058, -112.028633. March 30, 2023.

Grazed yellow-billed cuckoo critical riparian breeding habitat along Sycamore Creek in Sycamore allotment. 34.343594, -112.029548. March 30, 2023.

VI. FAILURE TO PROTECT CULTURAL TREASURES AND MONUMENT OBJECTS IN VIOLATION OF THE ANTIQUITIES ACT

The AFNM proclamation affords specified objects a high level of protection and archaeological treasures were a primary reason for the designation of the AFNM. For grazing allotments within the AFNM, there is a higher standard for protection of objects and natural resources than typical multiple-use managed BLM lands. This higher standard has been affirmed by the Interior Board of Land Appeals (IBLA), upholding a ruling on a BLM decision to deny a grazing permit on lands designated as the Cascade-Siskiyou National Monument.[302] In *Walt v. BLM*, IBLA relied on the authority of the Proclamation and stated that "*BLM has no authority to ignore the Proclamation, and as Judge Sweitzer recognized, 'the lands within the Monument are now to be managed primarily for the protection of objects of interest identified in the Proclamation.*'"[303]

The legal obligation for the BLM in managing the allotments contained within AFNM is to ensure protection of Monument objects. Where FLPMA requires the BLM to manage lands on the basis of multiple use and sustained yield, it adds, "*unless otherwise specified by law*." [304] Section 302(a) of FLPMA provides that "*the Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans developed by him under section 1712 of this title when they are available, **except that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law***."[305]

National Conservation Lands (NCL) direction requires the BLM to manage the lands "*in a manner that protects the values for which the components of the system were designated.*"[306] and that in balancing considerations under FLPMA per 43 U.S.C. §§ 1702(c), 1732, the ***BLM specifically should prioritize protections of those value***s. Courts have recognized that this provision requires the BLM to manage lands in accordance with Monument Proclamations and nothing in FLMPA requires or envisions that the balance among competing uses shall be struck one way or another.[307]

No violation of FLPMA is shown where the BLM exercises its discretionary authority under FLPMA in a manner that complies with the priorities established by a duly issued Presidential Proclamation, and therefore the BLM could decline to renew a grazing permit and still be in full compliance with FLPMA, but authorizing livestock grazing in violation of a Presidential Proclamation that should protect natural resources in the area that authorization is made can be a violation of FLPMA.[308] Further, the Omnibus Public Land Management Act of 2009 (OPLMA), requires BLM to manage components of the NCL program to "*conserve, protect, and restore nationally significant landscapes*" and to do so "*in accordance with any applicable law (including regulations) relating to any component of the system … and in a manner that protects the values for which the components of the system were designated*." The

[302] *Walt v. BLM*, 172 IBLA 300 (2007) https://www.oha.doi.gov/IBLA/Ibladecisions/172IBLA/172IBLA300.pdf.
[303] *Id*., 172 IBLA at 313.
[304] 43 U.S.C. § 1701(a)(7).
[305] 43 U.S.C. § 1732.
[306] 16 U.S.C. § 7202(c)(2).
[307] 43 U.S.C. § 1732(a) (2000).
[308] 172 IBLA at 313 (2007).

proclamation establishes the values for which the monument lands were designated and is applicable law with which BLM must comply in determining how to conserve, protect, and restore the landscape.

At AFNM, vegetation communities and wildlife are specifically mentioned in the AFNM Proclamation as objects to be protected, but livestock grazing is not. Because the mandate to protect the Monument's objects imposed by the Antiquities Act, and by the Proclamation, overrides the multiple-use mandate where incompatible, even where the Proclamation does not expressly restrict or preclude certain uses, the BLM should be managing its grazing system in the context of the objects and values protected by the Proclamation.

Pueblo La Plata, Horseshoe allotment

At least 450 prehistoric sites are known to occur within the boundaries of the Agua Fria National Monument. Improper and unlawful cattle management has damaged irreplaceable Monument objects, while BLM is legally required to be protecting those objects.

On March 28, 2023, we documented significant cattle impacts at Pueblo La Plata in the Agua Fria National Monument above Silver Creek on the Horseshoe allotment. This stone-masonry pueblo is one of the most prominent and easily accessible archaeological sites within the Monument and is the major site advertised to the public to visit and enjoy. This ruin and the surrounding area boasts high densities of cultural resource artifacts and rock art.

The area surrounding Pueblo La Plata is a great example of the extensive agricultural terraces used as ancient farms. The AFNM Proclamation identifies such objects to be protected above all else. Yet cattle are destroying this culturally significant site, which is clearly not afforded the protection it rightfully deserves.

The photos below document our observations, which include disturbed cultural artifacts, and trampled plants and soils.

Cattle damage archaeological treasures at Pueblo La Plata, Horseshoe allotment. 34.251923, -112.033728. Date March 28, 2023.

Cattle trample ancient pottery at Pueblo La Plata, Horseshoe allotment. 34.251923, -112.033728. March 28, 2023.

Cattle trample ancient pottery at Pueblo La Plata, Horseshoe allotment. 34.252171, -112.03418. March 28, 2023.

Cattle trample and unearth ancient pottery at Pueblo La Plata, Horseshoe allotment. 34.252171, -112.03418. March 28, 2023.

Cattle trample ancient agricultural terraces at Pueblo La Plata, Horseshoe allotment. 34.252171, -112.03418. March 28, 2023.

Cattle were observed grazing *inside of the ruin* at Pueblo La Plata, toppling rocks and damaging archaeological treasures on the Horseshoe allotment. 34.251951, -112.032895. March 28, 2023.

BLM's Manual 8110.21 identifies three types of surveys that may be used to satisfy the agency's duty to make a reasonable and good faith effort to identify historic properties:

Class I – existing information inventory
Class II – probabilistic field survey
Class III –intensive field survey[309]

Each is designed to provide specific kinds of cultural resource information for various planning and resource management needs. The most frequently employed method of inventory is a class III survey carried out for specific projects to enable BLM to comply with Section 106 before making decisions about proposed land and resource uses. The inventory step is a critical prerequisite to the remainder of the section 106 process: "[i]*t is simply impossible for an agency to take into account the effects of its undertaking on historic properties if it does not even know what those historic properties are in the first place*."[310] An intensive, class III field survey "*is most useful when it is necessary to know precisely what historic properties exist in a given area*," such as with vegetation management decisions.[311]

Conducting class III surveys is necessary to ensure BLM has a complete inventory of cultural resources and historic properties and can accurately assess the impacts of grazing on historic sites. If BLM does not know where cultural resources are located, it cannot possibly locate habitat management actions in such a way as to minimize impacts to those resources, as required under Executive Orders 11644 and 11989 and 43 C.F.R. § 8342.1.

The Antiquities Act was the first U.S. law to provide general legal protection of cultural and natural resources of historic or scientific interest on public lands. Its aim is to protect both historic and prehistoric sites and to prohibit excavation and/or destruction of such antiquities.

The American Indian Religious Freedom Act (AIRFA) commits the federal government "to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian ... including, but not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites."

Executive Order 13007, Indian Sacred Sites, applies to all federally owned lands except Indian trust lands (that is, reservations). It requires the BLM and other agencies that manage federal lands to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; and (2) avoid adversely affecting the physical integrity of such sites.

Executive Order 13175, Consultation and Coordination with Tribal Governments requires consultation with Indian Tribal Governments in "formulating or implementing policies that have tribal implications" and aims in part "to strengthen the United States' government-to-government relationships with Indian tribes." Consultation processes must embody the unique relationship between the U.S. and the Indian tribe(s).

[309] BLM Manual 8110.21A-C.
[310] 65 Fed. Reg. 77,698, 77,715 (Dec. 12, 2000 Advisory Council on Historic Preservation describing inventory requirements).
[311] BLM Manual 8110.21(C).

The BLM is required to manage the Horseshoe Allotment in a manner which protects the objects identified in the National Monument proclamation. We have documented in this Notice the BLM's failure to ensure compliance with AFNM's enabling legislation. Clearly grazing is prioritized on AFNM rather than the protection of objects which, by legal Proclamation, is paramount. The BLM must immediately discontinue damage to the cultural treasures that are legally protected on this national monument.

VII. CONCLUSION

We have demonstrated in this Notice that the presence of livestock along the Agua Fria River, its tributaries, and in the greater watershed has, in violation of ESA Sections 7(a)(1), 7(a)(2), 7(d), and 9, negatively impacted and/or irretrievably altered ecological and hydrologic processes such that the value of designated critical habitat has been adversely modified and/or destroyed. Riparian zones have suffered from long-term grazing effects and have become susceptible to accelerated rates of erosion. Improper grazing strategies are responsible for removal of protective understory plant cover and are precluding establishment of sprouting trees.[312] Innumerable examples of soil compaction and erosion have been provided in this Notice; these conditions further hinder and restrict vegetative regrowth, and render the critical habitat degraded or unavailable for the listed species.

Native tree recruitment is a naturally restricted event requiring precisely timed rains. Advancing climate change brings increasingly irregular patterns of rain and unseasonable extreme heat, the result of which further restricts opportunities for native trees to replace themselves. According to Wohner et al. (2021),

> "With water regimes tightening and climate change threatening even drier conditions in California (Seavy et al. 2009; Poff et al. 2011; Hinojosa-Huerta et al. 2013), the assumption that riparian forest can function naturally is overly optimistic. It will be increasingly important to safeguard sensitive species against more prolonged and severe drought expected through climate change (Faber et al. 1989; Poff et al. 2011). When we only have 1–2% of remaining riparian forest left, we cannot afford to allow the few threatened populations we have to crash while we wait for natural regeneration to establish fortuitously. The conditions for seedling establishment are naturally so restrictive that decades may pass without effective large-scale regeneration (Gonzalez et al. 2018). Explicit long-term (e.g. 25 years), science- based adaptive management plans are needed to plan for the continued creation of early successional habitat for Cuckoos and other sensitive riparian species (Greco 2013; Johnson et al. 2017)."[313]

An obvious conclusion is that continuing cattle grazing in the context of these dire climate predictions can prevent riparian areas from yielding habitat for imperiled species in perpetuity in Arizona. Every lost opportunity for new tree cohorts to germinate and grow due to

[312] 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.

[313] Wohner, P.J., Laymon, S.A., Stanek, J.E., King, S.L. and Cooper, R.J., 2021. Challenging our understanding of western Yellow-billed Cuckoo habitat needs and accepted management practices. Restoration Ecology, 29(3), p.e13331.

improper and illegal grazing management represents permanent and irreversible loss of habitat, a violation of ESA Section 7(a)(2) as well as Section 7(d).

The presence of livestock in the watershed and along riparian zones impacts rates and spatial patterns of water and sediment runoff, interfering with magnitude and timing of flood flows and regeneration of riparian plants. It alters the composition of biological plant communities and can cause undesirable changes, including extinctions or local extirpations. Based on our observations in the field and the photos presented in this Notice, soil disturbances are rampant and significant and preclude 'riparian habitat in a dynamic successional riverine environment' as is a prerequisite for Cuckoo recovery.[314]

Cattle exacerbate desertification and ultimately lead 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 which, in a disastrous feedback cycle, precludes native plant recovery and reestablishment.[315] These conditions are evident in AFNM when landscapes are grazed **prior to** summer monsoons (i.e., "seasonal grazing" and "rest-rotation" schemes that claim to be beneficial), wherein denuded, heat-stressed drainages capture less rainwater and erode. Riparian zones suffering from long-term grazing effects are susceptible to extreme flooding events resulting in channel incision that can irreversibly preclude the proper conditions to support sprouting trees and riparian recovery.[316] Such effects promote permanent degradation of water resources on public lands. The photos in this Notice provide numerous examples and direct evidence of this serious legal violation at AFNM.[317]

Notwithstanding, the BLM still manages riparian zones with priorities that ensure acute and chronic degradation. Vital components of arid land ecosystems are regarded as "forage" and allocated to cattle, perpetuating the negative feedback and amplifying effects of drought. Grazing is the mechanism by which these natural processes disintegrate. Like wildfire, grazing is a disturbance that reduces the effectiveness of vegetation to trap rainfall and retain scarce water and soil resources in deserts and semiarid landscapes.

Revegetating deep-rooted perennial native plants is a vital strategy for restoring degraded landscapes that can be accomplished passively by removing cattle from the system.[318] Water infiltration rates would increase as grazing pressure and compaction are removed. Regrowth of woody and understory vegetation would repair soil structure and promote permeability.[319] As roots return, soil-burrowing invertebrates recolonize and restore soil porosity over and above the

[314] Correspondence to Tom Dabbs, District Manager, Bureau of Land Management, Gila District, Sierra Vista, Arizona from FWS 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.

[315] 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.

[316] 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.

[317] Endangered Species Act, Section 7(d).

[318] 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.

[319] 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.

effects of the vegetation itself.[320] In a positive feedback loop, patches of intact vegetation with sufficient biomass and densities again trap water and nutrients, producing enhanced pulses of new plant growth.

Riparian conditions illustrated in this Notice represent an obvious failure to assure habitat for obligate endangered, threatened, and sensitive species. It is undeniable, considering the photos we have presented over the last 3 years, that riparian zones of AFNM are in a highly degraded state defined by widespread, significant cattle impacts. Our observations show that BLM-authorized cattle grazing has irreparably harmed Chub and Cuckoo Critical Habitat, all while the legally required consultation for this action is being revised and completed.

BLM's continued reliance on unlawful and arbitrary consultation documents, including the 2006 BOs[321] and the 2018 BLM Horseshoe Allotment BA and 2018 FWS Concurrence, in allowing continued destructive cattle grazing on the Agua Fria National Monument is not legal. Since conceding last year that the agency must reinitiate consultation, BLM has failed to rein in unlawful and inappropriate grazing schemes occurring on Monument grounds, and the resulting damages we've recorded in 2023 are among the worst yet and now include desecration of archaeological and cultural treasures.

Our surveys demonstrate that BLM has violated and remains in ongoing violation of ESA Section 7(a)(2) by authorizing and managing livestock grazing in a manner that has been and is destroying and adversely modifying critical habitat for the Chub and Cuckoo, and jeopardizing their continued existence.

Further, while undertaking, reinitiating and completing consultation on the impacts of livestock grazing on Agua Fria National Monument allotments, BLM and FWS have violated and remain in ongoing violation of the ESA Section 7(d) by failing to protect critical habitat designations from "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)."

An important contention, illustrated by the photos in this Notice, is that under a seasonal grazing regime, critical habitat designations are left with full grazing impacts at the onset breeding seasons. It is an ineffective strategy for federal agencies to only consider the direct impacts of cattle to ESA-listed birds, such as direct nest disturbances. The indirect effects of cattle on vital habitat characteristics, namely the fully utilized herbaceous vegetation at the onset of breeding seasons, must be considered. This is made worse by a lack of adherence to seasonal restrictions and utilization limits.

Overall, our habitat surveys found that Chub and Cuckoo critical habitat extensively lacked the vegetative structure needed to serve its intended purpose in supporting recovery and that livestock grazing is a primary driver of these circumstances. We reiterate that the position of

[320] 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.

[321] The November 2, 2006 Biological Opinion for Phoenix Field Office Planning Decisions and Associated Activities on Gila Chub in the Agua Fria National Monument (02-21-03-F-0409-R1); and the December 18, 2006 Biological Opinion on the Effects of the Agua Fria National Monument and Bradshaw-Harquahala Resource Management Plan on Federally-Listed Species (22410-05-F-0785).

FWS is that Cuckoo 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."[322] And according to the WFC Recovery Plan (which has been recommended by FWS to be the surrogate for Cuckoo until they get their own), if potential habitat is degraded and grazing is a major stressor, and that habitat is restorable without grazing, then grazing should be excluded.

It is indisputable that in designated Cuckoo critical breeding habitat, riparian and understory vegetation must be intact at the onset of breeding season. This is obviously not the case in AFNM. Thus, what could be a potential Cuckoo breeding territory will not be utilized by these threatened migratory birds if the site is in a degraded state. In other words, critical habitat designations are of diminished value to Cuckoo. In some cases, this degradation is permanent and irreversible.

We hope an ITS is developed for all five allotments that contains meaningful and enforceable protection of Chub and Cuckoo habitat features required for their recovery. It must incorporate advice from species experts at FWS that we've highlighted in this Notice. It must incorporate the best available science on Cuckoo habitat needs and the impacts of grazing on needed habitat features, and consider the grazing damages we've identified and documented here and in our last two Notices. Only then will the new ITS not be ineffectual, arbitrary and capricious, and will no longer result in continued damages and legal violations that we will continue litigating as necessary.

The images of widespread livestock disturbances presented in this NOI should raise concern about widespread destruction and future condition of Cuckoo habitat in one of their few remaining strongholds. According to FWS, "if an area with grazing activity degrades riparian habitat attributes and prevents long-term health and persistence of these systems, it is considered overgrazing."[323] In another example, FWS defines overgrazing as grazing activities that reduce quality and quantity of breeding habitat.[324] FWS 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."[325] These statements support and necessitate the need for cattle exclosures within AFNM.

Full cattle exclusion is required to sustain and promote Chub and Cuckoo 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 climate change and increasing aridification. A recent meta-analysis of livestock grazing effects on biodiversity found that across all animals studied,

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[322] 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 20831.

[323] 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.

[324] *Ibid*., page 20853.

[325] 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.

livestock exclusion increased abundance and diversity, especially species dependent on plants, such as herbivores and pollinators.[326]

The Hassayampa Field Office apparently agrees, having already stated:

> "The removal of livestock would largely benefit wildlife by the elimination of resource competition. Vegetation abundance, densities, and heights are expected to be greatest under this alternative. This would largely result in the best habitat for wildlife of the three alternatives. Vegetation heights are expected to be greatest under this alternative which would provide the maximum hiding cover for wildlife of the alternatives. Vegetation abundance and densities are also expected to be greatest under this alternative which would provide the most forage for wildlife species. This would result in the best habitat for many species including but not limited to migratory birds, small mammals, reptiles including the Sonoran desert tortoise." [327]

Thus, the BLM rightfully acknowledges that areas unavailable to grazing will experience positive ecosystem benefits, which implies that grazing creates negative ecosystem impacts and supports our argument that grazing is mutually exclusive to Monument object protection. If the AFNM ecosystem "*would largely benefit*" from no grazing, then that is the best way to manage this lawfully protected site in accordance with the ESA, the Antiquities Act, the BLM's own special status species policy and FLPMA, which mandates to avoid "*unnecessary or undue degradation*" of public lands.

Continued prioritization of livestock grazing on the Agua Fria National Monument has diminished the ecological and cultural value of this arid-region ecosystem and, on an annual basis, is actively decreasing the entire watershed's ability to yield fresh water for wildlife and humans alike. The BLM and FWS have impaired the optimal benefits of the Agua Fria watershed to society as a whole. These values and services far outweigh private profit local resource extraction.

Supported by the best available conservation science, full cattle exclusion is the best way to mitigate for climate change and increasing aridification.[328] In the ongoing and escalating climate and extinction crises, land management agencies must begin meaningfully adapting to circumstances and manage public land for water resources in an era defined by escalating heat and drought. Prioritizing water, wildlife, and functional ecosystems represents the greatest good for the greatest number of people.

It is past time to manage the Agua Fria River ecosystem for its natural values, free from human resource extraction, so it can function at its highest potential without interference from livestock growers. Livestock grazing within the AFNM riparian zones, including in the uplands,

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[326] Filazzola et al 2020. The effects of livestock grazing on biodiversity are multitrophic: a meta-analysis. *Ecology Letters* doi: 10.1111/ele.13527.

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has had and will continue to have long-lasting negative impacts to the Monument's specified objects, to precious natural resources, to scarce water supplies, to archaeological treasures, to the scientific community, and to the local communities that are faced with rapidly diminishing water reserves.

Thank you for your prompt attention to this notice of legal violations. We will continue to be available to discuss these matters at your convenience; however, as destructive illegal cattle grazing continues, we are not willing to further delay filing a lawsuit should FWS 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