Livestock Damage to Aquatic and Riparian Critical Habitat in the U.S. Southwest: Field Assessment Results 2017-2024

Grazed yellow-billed cuckoo riparian critical habitat on Montana allotment, Coronado National Forest. May 5, 2021.

Center for Biological Diversity

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Executive Summary

This report provides the Bureau of Land Management (BLM), U.S. Forest Service (FS), and U.S. Fish and Wildlife Service (FWS) the results of the Center for Biological Diversity's (Center) field assessments of livestock grazing damage to aquatic and riparian critical habitat on federal public land in Arizona, New Mexico, and Utah from 2017-2024.

Since 2017, we've assessed critical habitat within a total of 213 federally managed grazing allotments (178 FS and 35 BLM), and in critical habitat administered by both agencies outside of allotments. Administrative units include the Apache-Sitgreaves, Coconino, Coronado, Gila, Lincoln, Prescott, Santa Fe, and Tonto National Forests; the Phoenix, Gila, Hassayampa, and Paria River BLM Districts; two BLM-administered National Monuments (Grand Staircase-Escalante and Agua Fria); and two BLM-administered Riparian National Conservation Areas (Gila Box and San Pedro).

Field assessments characterize livestock grazing impacts to aquatic and riparian critical habitat and document whether livestock are present in critical habitats from which they have been excluded under previous agency decisions. Assessments involve critical habitat for spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, Jemez Mountains salamander, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, western yellow-billed cuckoo, Mexican spotted owl, New Mexico meadow jumping mouse, jaguar, Arizona eryngo, and Huachuca water umbel. Other ESA-listed species including desert pupfish and Gila topminnow may be found in some survey areas but lack critical habitat.

This report constitutes the best available scientific information regarding the condition of the Southwest's aquatic and riparian critical habitat because the agencies lack systematic monitoring of the condition of physical and biological features that are essential to conservation of endangered and threatened species. We report results in summary tables organized by year, administrative unit, jurisdiction, and allotment. We present stream miles and percentages of cattle impact levels by district, allotment, and year. We also present comparative data of moderate-significant impacts across all survey years. Results synthesize thousands of georeferenced datapoints that are databased at the Center alongside accompanying photographs of damaged critical habitat.

Of the cumulative 2,435.6 critical habitat stream miles surveyed[1], 50 percent of the cumulative total (1,197.8 miles) showed significant damage from livestock grazing; 13 percent (315.0 miles) showed moderate damage; 23 percent (558.1 miles) showed light damage, and 14 percent (364.7 miles) showed no damage (Table 1). In 2024, assessments across 489.3 critical habitat stream miles show 45 percent of miles (217.9 miles) with significant damage, 13 percent (63.2 miles) with moderate damage, 16 percent (79.5 miles) with light damage, and 26 percent (126 miles) with no damage.

Our data show that across all survey years, and continuing in 2024, livestock grazing is causing moderate or significant damage and ongoing degradation of aquatic and riparian critical

[1] The cumulative total includes stream segments that were resurveyed in subsequent years.

habitat across federal land jurisdictions regionally. Results show that livestock grazing remains an impediment to the survival and recovery of threatened and endangered species in the Southwest. Federal agency action is needed to protect riparian critical habitat from livestock grazing damage and to prevent resultant jeopardy of threatened and endangered species in Arizona, New Mexico, and Utah. Otherwise, status quo federal agency livestock management risks driving to extinction those species that rely on riparian habitat here.

Background

More than a century of livestock grazing in Southwestern riparian ecosystems has led to a decline in insects, fish, reptiles, amphibians, birds, mammals, ground cover, biomass, and native vegetation,[2] making grazing the most destructive and widespread activity wrought on desert rivers and watersheds since the arrival of American settlers.

Decades of scientific research comparing grazed and ungrazed areas have documented that livestock grazing in the arid Southwest negatively effects water quality and quantity, stream channel morphology, hydrologic function, soil stability, streambank vegetation, and aquatic and riparian wildlife—proving that livestock grazing is an ecological catastrophe.[3]

FS scientists have concluded that grazing is the most studied threat to riparian areas in the American West[4] and that livestock use is incompatible with maintenance of habitat for wetland and riparian wildlife.[5] Livestock grazing effects have contributed to the listing of many threatened and endangered species, including the yellow-billed cuckoo,[6] spikedace and loach minnow,[7] northern Mexican and narrow-headed garter snakes,[8] and others.

Grazing impacts on riparian areas fall into four categories: impacts on streamside vegetation, stream channel morphology, water quality/quantity, and streambanks.[9] Collectively,

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[2] Krueper, D.J. 1996. Effects of livestock management on Southwestern riparian ecosystems. Pp 281-301 in Shaw, D.W., and D.M. Finch. 1996. Desired future conditions for Southwestern riparian ecosystems: bringing interests and concerns together. Gen. Tech. Rep. RMRS-GTR-272. USDA Forest Service, Fort Collins, CO. 359 p.

[3] Belsky, A.J., A. Matzke, and S. Uselman. 1999. Survey of Livestock Influences on Stream and Riparian Ecosystems in the Western United States. *Journal of Soil and Water Conservation* 54: 419-431.

[4] Poff, B., K.A. Koestner, D.G Neary, and D. Merritt. 2012. Threats to western United States riparian ecosystems: A bibliography. Gen. Tech. Rep. RMRS-GTR-269. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 78 p.

[5] Zwartjes, P.W., J.E. Cartron, P.L.L. Stoleson, W.C. Haussamen, and T.E. Crane. 2005. Assessment of Native Species and Ungulate Grazing in the Southwest: Terrestrial Wildlife. Gen. Tech. Rep. RMRS-GTR-142. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 74 p.

[6] 60 Fed. Reg. at 10707 ("*Overuse by livestock has been a major factor in the degradation and modification of riparian habitats in the United States … Livestock grazing in riparian habitats typically results in reduction of plant species diversity and density, especially of palatable plants like willow and cottonwood saplings*.")

[7] 77 Fed. Reg. at 10818 ("*Impacts associated with roads and bridges, changes in water quality, improper livestock grazing, and recreation have altered or destroyed many of the rivers, streams, and watershed functions in the ranges of the spikedace and loach minnow*.")

[8] 79 Fed. Reg. at 38718 ("*We found numerous effects of livestock grazing that have resulted in the historical degradation of riparian and aquatic communities that have likely affected northern Mexican and narrow-headed gartersnakes.*")

[9] Kauffman, J.B., and W.C. Krueger. 1984. Livestock impacts on riparian plant communities and streamside management implications-a review. *Journal of Range Management* 37(5): 430-438.

these impacts to vegetation, soils, and water lead to losses of wildlife habitat, reduced stream flow, increased pollution, and eradication of plant and animal species.[10] Grazing on riparian plants reduces vegetative cover and exposes soil to erosion, which in combination with streambank trampling leads to increased erosion and turbidity.[11] Livestock congregating in riparian areas feed on native tree and shrub regeneration, disrupting their reproductive cycle and leading to destabilized streambanks,[12] increased water temperatures, loss of hiding and breeding cover, and defecation and urination directly in the water. Reduced rainfall infiltration into soil[13] and increased sediment loads combine to exacerbate riparian ecosystem decline and increase stream down-cutting.[14]

Grazing in adjacent arid uplands and river terraces is equally destructive, with impacts to biological soil crusts, vegetation, soils, and wildlife.[15] A comprehensive review of grazing impacts in the Southwest concluded that no current grazing management system used by land managers is appropriate for the Sonoran Desert.[16] Cattle grazing also negatively impacts high-elevation montane riparian meadows and creeks through hydrologic changes, soil compaction, erosion, bank instability, and siltation.[17] Often, these impacts can have greater effects on wildlife than do wildfires.[18]

The only widely accepted way to eliminate cattle impacts and restore stream health is the exclusion of domestic grazers. When maintained, grazing exclosure fencing protects riparian areas and leads to rapid recovery of vigorous native vegetation,[19] which is critical to maintain streambank stability and provide habitat to riparian and aquatic wildlife.[20] Furthermore, removal of livestock from sensitive ecosystems, such as Southwestern riparian areas, is a critical component of adapting to climate change.[21] Prominent fish scientists have concluded that livestock grazing has been a major factor in eliminating native fishes from portions of their

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[10] Jones, A. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60(2): 155-164.
[11] Trimble, S.W., and A.C. Mendel. 1995. The cow as a geomorphic agent - a critical review. *Geomorphology* 13(1995): 233-253.
[12] Patten, D.T. 1998. Riparian ecosystems of Semi-Arid North America: Diversity and Human Impacts. *Wetlands* 18(4): 498-512.
[13] Gifford, G.F., and R.H. Hawkins. 1978. Hydrologic Impact of Grazing on Infiltration: A Critical Review. *Water Resources Research* 14(2): 305-313.
[14] Obedzinski, R.A., C.G. Shaw, and D.G. Neary. 2001. Declining woody vegetation in riparian ecosystems of the Western United States. *Journal of Applied Forestry*. 16(4): 169-181.
[15] Jones, A. 2000. Effects of cattle grazing on North American arid ecosystems: a quantitative review. *Western North American Naturalist* 60(2): 155-164.
[16] Hall, J.A., S. Weinstein, and C.L. McIntyre. 2005. The Impacts of Livestock Grazing in the Sonoran Desert: A Literature Review and Synthesis. The Nature Conservancy in Arizona, Tucson.
[17] Federal Register Vol. 57 No. 225, November 20, 1992, Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Plant "*Salix arizonica*" (Arizona willow), with Critical Habitat.
[18] Horncastle, V.J., C.L. Chambers, and B.G. Dickson. 2019. Grazing and Wildfire Effects on Small Mammals Inhabiting Montane Meadows. Journal of Wildlife Management 83(3): 534-543.
[19] Schulz, T.T., and W.C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. *Journal of Range Management* 43(4): 295-299.
[20] Sarr, D.A. 2002. Riparian Livestock Exclosure Research in the Western United States: A Critique and Some Recommendations. *Environmental Management* 30(4): 516-526.
[21] Beschta, R.L., D.L. Donahue, D.A. DellaSala, J.J. Rhodes, J.R. Karr, M.H. O'Brien, T.L. Fleischner, and C.D. Williams. 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. *Environmental Management* 51: 474-491.

historic ranges[22] and that habitat degradation is most easily reversed by excluding livestock from the riparian area.[23]

As briefed here, the scientific literature documenting the impacts of livestock grazing on ecosystems is extensive and universally shows severe and lasting negative impacts.[24] Livestock removal leads to a rapid regrowth of riparian willow shrub communities[25] and reestablishment of high-quality habitat[26] and avian populations.[27] But full recovery of mature deciduous forests and the diversity that comes with them takes decades of cattle exclusion,[28] meaning monitoring, enforcement, and maintenance of riparian exclosures is crucial. Complete exclusion of livestock animals is urgently needed to protect critical habitat and ensure the recovery and viability of native wildlife.

Since 2017, Center for Biological Diversity field biologists have conducted field assessments of livestock grazing impacts to aquatic and riparian critical habitat in the Southwest, including impacts to the physical and biological features that are essential to the conservation of endangered and threatened species.

This effort is compelled by: (1) the well-known negative impacts that livestock grazing and congregation in aquatic and riparian areas have on ecosystems and imperiled species; (2) the observed increasing presence of livestock in livestock-excluded riparian critical habitats in the Southwest, and the deteriorating condition of those habitats in recent decades; and (3) the failure of federal agencies to systematically monitor the health of riparian ecosystems in the context of habitat requirements of threatened and endangered species, and their failure to systematically detect and remove livestock congregating in riparian critical habitat.

Field assessments characterize livestock grazing impacts to aquatic and riparian critical habitat and document whether livestock are present in critical habitats from which they have been excluded under previous agency decisions. These transect assessments characterize, photograph, and rank damage from livestock grazing to primary constituent elements (PCEs) and physical or biological features (PBFs) of critical habitat. This includes (1) herbaceous vegetation and grasses, (2) multi-year woody stems and regeneration, (3) soil and ground disturbance

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[22] Propst, D.L. 1999. Threatened and endangered fishes of New Mexico. Tech. Rpt. No. 1. New Mexico Department of Game and Fish, Santa Fe, NM at page 15.

[23] Pritchard, V.L. and D.E. Crowley. 2006. Rio Grande Cutthroat Trout (*Oncorhynchus clarkii virginalis*): A Technical Conservation Assessment. Prepared for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project. Department of Fishery and Wildlife Sciences, New Mexico State University, Las Cruces, NM.

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

[25] Holland, K.A., W.C. Leininger, and M.J. Trlica. 2005. Grazing History Affects Willow Communities in a Montane Riparian Ecosystem. *Rangeland Ecology and Management* 58: 148-154.

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

[27] Poessel, S.A., J.C. Hagar, P.K. Haggerty, and T.E. Katzner. 2020. Removal of cattle grazing correlates with increases in vegetation productivity and in abundance of imperiled breeding birds. *Biological Conservation* 241 (2020): 108378.

[28] Szaro, R.C., and C.P. Pase. 1983. Short-term Changes in a Cottonwood-Ash-Willow Association on a Grazed and an Ungrazed Portion of Little Ash Creek in Central Arizona. *Journal of Range Management* 38(3): 382-384.

intensity, (4) soil/ground cover disturbance extent, (5) intensity of streambank degradation, and (6) extent and pervasiveness of streambank erosion, as well as checking exclosures.

Field assessments have included critical habitat for spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, Jemez Mountains salamander, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, western yellow-billed cuckoo, Mexican spotted owl, New Mexico meadow jumping mouse, jaguar, Arizona eryngo, and Huachuca water umbel.

Each year, survey data are recorded and databased with updated, georeferenced photographs. Overall livestock impacts are summarized and mapped by allotment and critical habitat stream segment (see Appendix A). All data are stored in a GIS database alongside hundreds of corresponding photographs documenting damage for critical habitat stream reach. These data are the most comprehensive, quantifiable, and up-to-date assessments of riparian conditions and cattle occupancy for each area surveyed. Transect field assessments provide the best available scientific information about the condition of aquatic and riparian critical habitats in the Southwest.

Methods

On an annual basis, professional field biologists document livestock impacts to standing waters, riparian vegetation, soils, and streambanks within designated critical habitat and examine protective fencing where applicable. Hundreds of georeferenced photo points are taken along each segment to document evidence of livestock impacts. Using a standardized protocol, surveyors record:

(1) severity of grazing impacts on herbaceous vegetation and grasses;
(2) severity of browsing impacts on streamside woody regeneration;
(3) severity of ground disturbances from trailing, trampling, and wallowing;
(4) extent of ground disturbances from trailing, trampling, and wallowing;
(5) severity of streambank degradation; and
(6) extent of streambank degradation.

Each survey is broken down into ¼-½ mile field-delineated segments of designated critical habitat based on topography, access, and trends in severity of cattle impacts. At each segment endpoint, a condition score is recorded for each of the six impact categories along a range of 0 to 4 based on the severity and extent of the impact. A segment is rated 0 for a particular category if no evidence of impact is observed, 1 if impacts are limited, 2 if impacts are light and scattered, 3 if impacts are moderate and widespread, and 4 if impacts are severe and pervasive. Following field surveys of designated stream reaches, each segment's "overall impact level" (defined as absent, light, moderate or significant) is calculated. To determine overall impact level, condition severity scores for each segment endpoint are collated and weighted (see Appendix A).

Results

Since 2017, the Center has conducted surveys on 178 grazing allotments administered by the FS on eight national forests in Arizona and New Mexico, 35 grazing allotments administered by the BLM in Arizona and Utah, and in critical habitat administered by both agencies on public

lands outside of active grazing allotments where poorly managed and illegal cattle have shown repeated or sustained presence. Cattle impacts assessed result from a combination of authorized, unauthorized, trespass and feral cattle.

Not all allotments were surveyed every year. Therefore, each year represents a snapshot in time and often includes a varying number and combination of allotments (and therefore total critical habitat miles) surveyed. While Center biologists did not revisit each allotment every year over the eight years beginning in 2017, many allotments were surveyed consistently across multiple years.

Most survey mileage represents comprehensive transects of all critical habitat miles within an allotment (or other management unit). Some surveys were 'spot checks' in known problem areas, and thus the percentages of moderate to significant impacts reported do not necessarily represent a comprehensive description of all critical habitat allotment-wide (e.g., the Diamond Bar and Redstone on the Gila National Forest). Conversely, some spot checks represent inspections of grazing exclosures where impacts were found to be absent (Lincoln National Forest, 2024). In instances where survey miles are low with high percentages of 'significant' or 'absent' impact levels, caution should be used when extending results to all critical habitat within an entire allotment. This report is meant to be a broad summary of our region-wide cattle impact survey findings to date.

Results are presented in miles of overall impact level and percentage of overall impact level of the total miles surveyed per year, administrative unit, district, and allotment. We present the annual total percentage of moderately to significantly impacted miles by administrative unit, district and allotment. We also present the cumulative miles of overall impact level recorded and the percentage of those impact levels of the cumulative total of critical habitat miles surveyed to date.

To summarize the total collective effort to date, eight years of critical habitat surveys across 2,435.6 cumulative stream miles show 50 percent of the cumulative total (1,197.8 miles) with significant damage from unauthorized livestock grazing; 13 percent (315.0 miles) with moderate damage; 23 percent (558.1 miles) with light damage, and 14 percent (364.7 miles) with no damage (Table 1). In 2024, assessments across 489.3 critical habitat stream miles show 45 percent of miles (217.9 miles) with significant damage, 13 percent (63.2 miles) with moderate damage, 16 percent (79.5 miles) with light damage, and 26 percent (128.6 miles) with no damage (Table 1).

Table 1. Cattle impacts on designated critical habitat across all FS and BLM public land jurisdictions from 2017-2024.

	Absent		Light		Moderate		Significant		TOTAL
Year	miles	percent	miles	percent	miles	percent	miles	percent	miles
2017	11.78	9.85%	19.07	15.95%	15.27	12.77%	73.46	61.43%	119.59
2018	27.66	30.08%	16.96	18.44%	14.56	15.84%	32.77	35.64%	91.96
2019	60.54	18.68%	105.15	32.44%	39.17	12.08%	119.25	36.79%	324.13
2020	8.49	13.61%	22.11	35.47%	6.42	10.30%	25.32	40.62%	62.34
2021	47.19	11.78%	35.73	8.92%	51.89	12.95%	265.71	66.34%	400.52
2022	63.06	13.07%	121.43	25.17%	54.66	11.33%	243.27	50.43%	482.42
2023	17.37	3.73%	158.05	33.97%	69.82	15.00%	220.09	47.30%	465.33
2024	128.63	26.28%	79.55	16.26%	63.22	12.92%	217.96	44.54%	489.35
TOTAL	**364.72**	**14.05%**	**558.06**	**22.72%**	**315.00**	**13.27%**	**1197.84**	**49.97%**	**2435.63**

To better illustrate annual results and trends over time, we herein break the cumulative totals down by year, administrative unit, district, and individual grazing allotment.

Forest Service, Region 3

Apache-Sitgreaves National Forest (Arizona)

The Apache-Sitgreaves National Forest (ASNF) contains designated critical habitat for ten different threatened and endangered species surveyed by the Center, including spikedace, loach minnow, Gila chub, Apache trout, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, western yellow-billed cuckoo, and New Mexico meadow jumping mouse.

Aggregate data concerning ASNF surveys 2017-2024 is contained in Table 2; Tables 3-10 include data for each year of surveys. From 2017-2024, the Center surveyed 446.44 miles of public lands critical habitat designations on the ASNF for cattle impacts (range 4.3-92.9 miles/year, average 63.8 miles/year, Tables 2-10). Percent of survey miles moderately to significantly impacted by cattle on the Alpine Ranger District ranged from 23% (2018) to 44% (2023), with an average of 31.2 % across all survey years. The worst allotment was Raspberry allotment, which showed 100% of survey miles degraded by cattle in 2018 and 2021-2024.

Percent of survey miles moderately to significantly impacted on the Clifton Ranger District ranged from 0% (2019) to 100% (2020), with an average of 73.5% across all survey years. There are several allotments chronically degraded by cattle on this District, including, but not limited to, the Hickey, Pigeon, and Dark Canyon allotments.

In 2024, Cattle Impact Surveys continued for the seventh consecutive year on ASNF. In 2024, the Center surveyed 92.87 miles on 21 different grazing allotments. Of these allotments, ten had moderate to significant cattle impacts on the majority of designated critical habitat miles surveyed. Critical habitat on the Springerville Ranger District was only surveyed in 2018 and 2024, but in 2024, 20% of critical habitat miles were shown to have moderate to severe cattle impacts with these designations.

Table 2. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Apache-Sitgreaves National Forest, by district and allotment, from 2017-2024.

Allotment	2017	2018	2019	2020	2021	2022	2023	2024
Alpine Ranger District		23%	28%		41%	37%	44%	26%
Alpine GRA			0%					0%
Black River & Black River GRA		0%						0%
Bobcat-Johnson		0%			0%	0%	0%	
Colter Creek & Nutrioso GRA								0%
Cow flat		100%			0%	0%	53%	
Coyote-Whitmer		43%	100%					
Fishhook/Steeple Mesa		0%			26%	6%	31%	
Foote Creek								
Grandfather								18%
Lower Campbell Blue		0%						
Not in allotment								0%
PS								24%
Raspberry		100%			100%	100%	100%	100%
Red Hill		51%			0%	0%	0%	
South Escudilla & Nutrioso Summer								0%
Sprucedale/Reno & Hannagan								2%
Turkey Creek		0%						
Upper Campbell Blue			32%					
West Fork								21%
Williams Valley			0%					24%
Clifton Ranger District	87%	95%	0%	100%	83%	61%	83%	79%
Black Jack			0%					
Dark Canyon		100%			96%	64%	100%	96%
Double Circle		98%			73%	13%	44%	
East Eagle		61%		100%	0%	0%	100%	100%
Hickey	87%	100%			100%	86%	90%	65%
Mud Springs		92%			91%	30%	100%	100%
Pigeon	100%				100%		100%	100%
Pleasant Valley	82%		0%		72%	34%	55%	89%
San Francisco			0%				22%	
Sandrock		99%			76%	58%	100%	64%
Sandrock/Wildbunch							100%	
Strayhorse			0%			0%		
Tule		100%						100%
Wildbunch	100%	100%				100%	85%	100%
Springerville Ranger District		5%						20%
26 Bar								0%
Greer		5%						
Not in allotment								0%
Reservation								0%
Udall								0%
Voigt								45%

Table 3. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2017.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Clifton Ranger District		0.0%	1.91	13.5%	2.86	20.3%	9.34	66.2%	14.11
Hickey		0.0%	1.37	13.3%	1.77	17.1%	7.20	69.6%	10.34
Pigeon		0.0%		0.0%		0.0%	0.57	100.0%	0.57
Pleasant Valley		0.0%	0.53	17.7%	1.09	36.2%	1.39	46.2%	3.01
Wildbunch		0.0%		0.0%		0.0%	0.18	100.0%	0.18

Table 4. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2018.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	25.31	58.2%	7.95	18.3%	1.29	3.0%	8.91	20.5%	43.46
Black River & Black River GRA	7.48	74.5%	2.56	25.5%		0.0%		0.0%	10.04
Bobcat-Johnson	5.83	100.0%		0.0%		0.0%		0.0%	5.83
Cow Flat		0.0%		0.0%		0.0%	0.58	100.0%	0.58
Fishhook/Steeple Mesa	2.44	37.8%	1.26	19.4%	0.75	11.6%	2.01	31.1%	6.46
Foote Creek	4.11	86.6%	0.63	13.4%		0.0%		0.0%	4.74
Lower Campbell Blue	4.01	58.3%	2.86	41.7%		0.0%		0.0%	6.87
Raspberry		0.0%		0.0%	0.54	8.8%	5.63	91.3%	6.17
Red Hill		0.0%	0.65	48.5%		0.0%	0.68	51.3%	1.33
Turkey Creek	1.44	100.0%		0.0%		0.0%		0.0%	1.44
Clifton Ranger District	0.16	0.5%	1.52	4.3%	11.00	31.1%	22.72	64.2%	35.41
Dark Canyon		0.0%		0.0%		0.0%	4.39	100.0%	4.39
Double Circle	0.04	1.6%		0.0%		0.0%	2.68	98.3%	2.73
East Eagle		0.0%	1.33	39.3%	0.85	25.1%	1.21	35.7%	3.39
Hickey		0.0%		0.0%	0.82	100.0%		0.0%	0.82
Mud Springs	0.12	8.2%		0.0%	0.21	14.3%	1.14	77.5%	1.47
Sandrock		0.0%	0.19	1.2%	8.21	50.7%	7.79	48.1%	16.19
Tule		0.0%		0.0%		0.0%	0.91	100.0%	0.91
Wildbunch		0.0%		0.0%	0.91	16.5%	4.60	83.5%	5.51
Springerville Ranger District	2.19	26.8%	5.58	68.3%	0.40	4.9%		0.0%	8.17
Greer	2.19	26.8%	5.58	68.3%	0.40	4.9%		0.0%	8.17

Table 5. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District		0.0%	5.62	72.1%	1.48	19.0%	0.69	8.9%	7.79
Alpine GRA		0.0%	0.40	100.0%		0.0%		0.0%	0.40
Coyote-Whitmer		0.0%		0.0%	0.42	38.2%	0.69	62.1%	1.11
Upper Campbell Blue		0.0%	2.21	67.7%	1.06	32.4%		0.0%	3.27
Williams Valley		0.0%	3.00	100.0%		0.0%		0.0%	3.00
Clifton Ranger District		0.0%	11.39	100.0%		0.0%		0.0%	11.39
Black Jack		0.0%	0.65	100.4%		0.0%		0.0%	0.65
Pleasant Valley		0.0%	0.45	99.8%		0.0%		0.0%	0.45
San Francisco		0.0%	7.99	100.0%		0.0%		0.0%	7.99
Strayhorse		0.0%	2.30	100.0%		0.0%		0.0%	2.30

Table 6. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Clifton Ranger District		0.0%		0.0%	0.32	7.5%	3.97	92.4%	4.29
East Eagle		0.0%		0.0%	0.32	7.5%	3.97	92.4%	4.29

Table 7. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	10.19	55.1%	0.65	3.5%	0.76	4.1%	6.90	37.3%	18.50
Bobcat-Johnson	4.39	100.0%		0.0%		0.0%		0.0%	4.39
Cow Flat	0.99	99.6%		0.0%		0.0%		0.0%	0.99
Fishhook/Steeple Mesa	4.00	71.7%	0.12	2.2%	0.76	13.6%	0.70	12.6%	5.58
Raspberry		0.0%		0.0%		0.0%	6.20	100.0%	6.20
Red Hill	0.82	60.6%	0.53	39.2%		0.0%		0.0%	1.35
Clifton Ranger District	3.28	5.8%	6.40	11.3%	10.97	19.4%	36.04	63.6%	56.69
Dark Canyon		0.0%	0.15	3.6%	0.67	16.1%	3.36	80.3%	4.18
Double Circle	0.67	26.7%		0.0%	0.50	20.0%	1.34	53.5%	2.51
East Eagle	2.03	66.0%	1.04	33.9%		0.0%		0.0%	3.08
Hickey		0.0%		0.0%	0.90	5.6%	15.28	94.4%	16.18
Mud Springs	0.14	9.3%		0.0%	0.88	57.0%	0.52	33.6%	1.55
Pigeon		0.0%		0.0%	0.48	100.0%		0.0%	0.48
Pleasant Valley	0.43	6.7%	1.38	21.2%	0.30	4.6%	4.38	67.4%	6.49
Sandrock		0.0%	3.82	24.3%	4.90	31.2%	7.00	44.5%	15.72
Wildbunch		0.0%		0.0%	2.33	35.8%	4.18	64.2%	6.50

Table 8. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	9.28	53.6%	1.55	8.9%	0.27	1.5%	6.22	35.9%	17.31
Bobcat-Johnson	4.48	100.1%		0.0%		0.0%		0.0%	4.48
Cow Flat	1.12	100.1%		0.0%		0.0%		0.0%	1.12
Fishhook/Steeple Mesa	3.06	72.6%	0.89	21.1%	0.27	6.3%		0.0%	4.21
Raspberry		0.0%		0.0%		0.0%	6.22	100.0%	6.22
Red Hill	0.62	48.3%	0.66	51.4%		0.0%		0.0%	1.28
Clifton Ranger District	5.65	11.0%	14.35	27.9%	10.68	20.8%	20.68	40.3%	51.36
Dark Canyon	0.13	1.9%	2.30	33.7%		0.0%	4.39	64.4%	6.82
Double Circle	1.87	74.4%	0.33	12.9%	0.32	12.6%		0.0%	2.52
East Eagle	1.89	74.2%	0.66	26.0%		0.0%		0.0%	2.55
Hickey		0.0%	1.56	14.1%	3.24	29.3%	6.25	56.5%	11.06
Mud Springs	0.99	69.3%		0.0%	0.22	15.3%	0.22	15.2%	1.43
Pleasant Valley		0.0%	3.35	66.1%	0.77	15.1%	0.95	18.8%	5.07
Sandrock	0.52	3.3%	6.15	38.5%	1.26	7.9%	8.03	50.3%	15.96
Strayhorse	0.25	100.0%		0.0%		0.0%		0.0%	0.25
Wildbunch		0.0%		0.0%	4.88	85.4%	0.84	14.6%	5.72

Table 9. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District		0.0%	10.94	55.8%	1.26	6.5%	7.39	37.7%	19.60
Bobcat-Johnson		0.0%	5.12	100.0%		0.0%		0.0%	5.12
Cow Flat		0.0%	0.53	47.1%		0.0%	0.59	52.7%	1.12
Fishhook/Steeple Mesa		0.0%	3.85	68.9%	1.26	22.6%	0.47	8.5%	5.59
Raspberry		0.0%		0.0%		0.0%	6.33	100.0%	6.33
Red Hill		0.0%	1.44	100.0%		0.0%		0.0%	1.44
Clifton Ranger District	0.86	1.3%	10.60	16.2%	14.73	22.5%	39.31	60.0%	65.49
Dark Canyon		0.0%		0.0%	0.18	9.0%	1.80	91.3%	1.97
Double Circle	0.86	34.2%	0.54	21.7%		0.0%	1.10	44.0%	2.51
East Eagle		0.0%		0.0%	0.49	4.1%	11.45	95.9%	11.94
Hickey		0.0%	1.10	10.3%	0.93	8.7%	8.72	81.1%	10.75
Mud Springs		0.0%		0.0%		0.0%	1.50	100.0%	1.50
Pigeon		0.0%		0.0%		0.0%	0.48	100.0%	0.48
Pleasant Valley		0.0%	1.70	44.8%	1.22	32.0%	0.88	23.2%	3.80
San Francisco		0.0%	6.34	77.5%	1.22	15.0%	0.61	7.5%	8.18
Sandrock		0.0%		0.0%	6.25	35.4%	11.38	64.5%	17.64
Sandrock/Wildbunch		0.0%		0.0%	0.60	100.0%		0.0%	0.60
Wildbunch		0.0%	0.90	14.8%	3.84	62.7%	1.38	22.6%	6.12

Table 10. Critical habitat survey miles impacted by cattle on the Apache-Sitgreaves National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Alpine Ranger District	24.63	72.7%	0.49	1.4%	2.09	6.2%	6.66	19.7%	33.87
Alpine GRA	0.76	100.0%		0.0%		0.0%		0.0%	0.76
Black River & Black River GRA	8.59	100.0%		0.0%		0.0%		0.0%	8.59
Colter Creek & Nutrioso GRA	1.52	100.0%		0.0%		0.0%		0.0%	1.52
Grandfather	0.22	81.5%		0.0%		0.0%	0.05	18.0%	0.27
Not in allotment	0.24	100.0%		0.0%		0.0%		0.0%	0.24
PS	4.78	75.9%		0.0%	0.78	12.4%	0.74	11.8%	6.30
Raspberry		0.0%		0.0%		0.0%	5.74	100.0%	5.74
South Escudilla & Nutrioso Summer	1.75	100.0%		0.0%		0.0%		0.0%	1.75
Sprucedale/Reno & Hannagan	2.30	97.6%		0.0%	0.05	2.2%		0.0%	2.36
West Fork	3.22	79.3%		0.0%	0.84	20.8%		0.0%	4.06
Williams Valley	1.24	54.8%	0.49	21.5%	0.41	18.2%	0.12	5.4%	2.27
Clifton Ranger District	0.44	0.9%	9.09	19.6%	9.17	19.8%	27.69	59.7%	46.39
Dark Canyon		0.0%	0.15	4.3%		0.0%	3.35	95.6%	3.50
East Eagle		0.0%		0.0%	6.27	92.0%	0.54	7.9%	6.81
Hickey		0.0%	3.73	34.9%	2.90	27.1%	4.07	38.0%	10.71
Mud Springs		0.0%		0.0%		0.0%	1.21	100.0%	1.21
Pigeon		0.0%		0.0%		0.0%	0.57	100.0%	0.57
Pleasant Valley	0.44	11.4%		0.0%		0.0%	3.40	88.5%	3.84
Sandrock		0.0%	5.21	35.8%		0.0%	9.32	64.2%	14.53
Tule		0.0%		0.0%		0.0%	0.41	100.0%	0.41
Wildbunch		0.0%		0.0%		0.0%	4.82	100.0%	4.82
Springerville Ranger District	6.92	54.9%	3.12	24.8%	1.27	10.1%	1.30	10.3%	12.61
26 Bar	0.39	100.0%		0.0%		0.0%		0.0%	0.39
Not in allotment	5.38	100.0%		0.0%		0.0%		0.0%	5.38
Reservation		0.0%	0.33	100.0%		0.0%		0.0%	0.33
Udall	0.82	100.0%		0.0%		0.0%		0.0%	0.82
Voigt	0.33	5.7%	2.79	49.1%	1.27	22.3%	1.30	22.9%	5.69

Coconino National Forest (Arizona)

Grazing allotments in the Redrock Ranger District of Coconino National Forest were surveyed in 2019 and 2020. Aggregate data concerning Coconino surveys 2019-2020 is contained in Table 11; Tables 12-13 include data for each year of surveys. In 2019, approximately one third of surveyed critical habitat miles were damaged by cattle, with Fossil Creek and Walker Basin allotments having the highest percentages at 81% and 53%, respectively (Table 11). In 2020, the Center resurveyed 1.74 miles of spikedace/loach minnow critical habitat in Fossil Creek allotment and documented only light cattle impacts along this stream reach (Tables 11-13).

Table 11. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Coconino National Forest from 2019-2020.

District/ Allotment	2019	2020
Red Rock Ranger District	32%	0%
13-Mile Rock/ Hackberry/Pivot Rock	32%	
Apache Maid	0%	
Beaver Creek	22%	
Fossil Creek	81%	0%
Walker Basin	53%	
Windmill West (boundary w/ Antelope Hills, Prescott NF)	30%	

Table 12. Critical habitat survey miles impacted by cattle on the Coconino National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Red Rock Ranger District	12.30	37.3%	9.99	30.3%	2.60	7.8%	8.04	24.4%	32.94
Windmill West (boundary w/ Antelope Hills, Prescott NF)	3.05	70.0%		0.0%	0.85	19.5%	0.45	10.4%	4.35
13-Mile Rock/ Hackberry/Pivot Rock	5.01	36.8%	4.24	31.1%		0.0%	4.38	32.1%	13.63
Beaver Creek	1.70	25.0%	3.62	53.2%	0.38	5.6%	1.11	16.3%	6.81
Apache Maid	1.01	37.8%	1.66	62.1%		0.0%		0.0%	2.68
Walker Basin	0.69	46.8%		0.0%	0.79	53.4%		0.0%	1.47
Fossil Creek	0.84	21.0%	0.47	11.7%	0.59	14.8%	2.10	52.5%	4.00

Table 13. Critical habitat survey miles impacted by cattle on the Coconino National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Red Rock Ranger District		0.0%	1.74	100.0%		0.0%		0.0%	1.74
Fossil Creek		0.0%	1.74	100.0%		0.0%		0.0%	1.74

Coronado National Forest (Arizona)

Most of the designated critical habitat on the Coronado National Forest protects threatened yellow-billed cuckoo, but critical habitat also exists for Chiricahua leopard frog, northern Mexican garter snake, Sonora chub and Huachuca water umbel. These designations were surveyed by the Center for cattle impacts starting in 2020. Aggregate data concerning Coronado surveys 2020-2024 is contained in Table 14; Tables 15-19 include data for each year of surveys.

The Center began cattle impact surveys on Coronado National Forest by assessing over 19 miles of Chiricahua leopard frog designations across four Ranger Districts (Tables 14, 15). The Pena Blanca and Cross S allotments of the Nogales Ranger District showed 73% and 100% of leopard frog critical habitat survey miles damaged by cattle, respectively.

Continuing the effort across subsequent survey years, and expanding to yellow-billed cuckoo critical habitat, an average of 76% of the Sierra Vista Ranger District (range 42%-97%) showed moderate to significant cattle impacts to riparian and xeroriparian zones (Tables 14-19). This is the highest average in all FS Region 3 per Ranger District. Most grazing allotments of the Sierra Vista Ranger District show consistent, high percentages of significant cattle impacts repeatedly over time.

Since 2020, an average of 73% of the critical habitat survey miles within the Nogales Ranger District (range 61%-86%) have shown ecological damage from cattle impacts. Cross S and Montana allotments are the worst chronic offenders, but several other allotments within the Nogales Ranger District are close behind in the percentages of critical habitat moderately to significantly impacted by cattle.

Surveys of critical habitat in grazing allotments of the Coronado National Forest commenced in 2024 for the fifth consecutive year (Table 19). Of the 26 allotments surveyed in 2024, 22 allotments (85%) had >50% of survey miles damaged by cattle, 19 allotments (73%) had >75% of survey miles damaged, and 14 of 26 allotments (54%) had 100% of critical habitat miles damaged by cattle.

Table 14. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Coronado National Forest, by allotment, from 2020-2024.

Allotment	2020	2021	2022	2023	2024
Douglas Ranger District	5%			0%	
Cave Creek	0%				
Walnut Canyon	8%			0%	
Nogales Ranger District	61%	76%	81%	62%	86%
Agua Caliente		40%	100%	0%	29%
Apache Springs					100%
Bear Valley	29%	71%	91%	54%	85%
Bear Valley/Not in allotment			100%		
Box Canyon		79%	100%	49%	100%
Cross S	100%		100%	100%	100%
Gardner					100%
Greaterville		100%	100%	26%	56%
Lake		100%	60%	100%	100%
Mc Beth		51%		0%	
Montana		99%	100%	99%	100%
Nogales			100%		
Not in allotment					45%
Oak Tree II			92%	75%	100%
Pena Blanca	73%	0%	31%	30%	69%
Proctor		100%	100%	100%	77%
Rock Corral			0%		
Rosemont		100%	95%	53%	100%
Safford Ranger District	0%				
Deer Creek	0%				
Willow Creek	0%				
Santa Catalina Ranger District			0%		
American Flag			0%		
Sierra Vista Ranger District	42%	84%	75%	97%	81%
Alisos		100%	100%	100%	67%
Chuney		0%	0%	100%	100%
Collins Canyon		1%	75%		
Duquesne		91%	52%	100%	92%
Farrell		98%	100%	86%	82%
Harshaw		82%	58%	100%	19%
Hayfield		100%	100%	101%	100%
Lewis		100%	100%		
Lone Mountain	42%	100%	70%	100%	86%
Lyle Canyon		100%	79%	100%	100%
Mc Farland		100%	100%	100%	0%
Post Canyon		64%	0%	100%	100%
San Rafael		68%	100%	100%	0%
Santa Cruz		100%	100%	81%	100%
Santa Cruz/Alisos					100%
Sawtelle					100%

Table 15. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Douglas Ranger District	3.57	70.4%	1.23	24.2%	0.27	5.4%		0.0%	5.08
Cave Creek	1.60	100.0%		0.0%		0.0%		0.0%	1.60
Walnut Canyon	1.97	56.7%	1.23	35.4%	0.27	7.9%		0.0%	3.48
Nogales Ranger District	0.87	9.1%	2.83	29.6%	1.22	12.7%	4.65	48.5%	9.57
Bear Valley	0.43	10.4%	2.54	60.6%	1.22	29.0%		0.0%	4.19
Cross S		0.0%		0.0%		0.0%	2.67	100.0%	2.67
Pena Blanca	0.44	16.3%	0.30	10.9%		0.0%	1.97	72.7%	2.71
Safford Ranger District	0.55	58.6%	0.39	41.9%		0.0%		0.0%	0.94
Deer Creek	0.46	53.5%	0.39	46.4%		0.0%		0.0%	0.85
Willow Creek	0.10	100.0%		0.0%		0.0%		0.0%	0.10
Sierra Vista Ranger District		0.0%	2.23	57.5%	1.64	42.4%		0.0%	3.87
Lone Mountain		0.0%	2.23	57.5%	1.64	42.4%		0.0%	3.87

Table 16. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Nogales Ranger District	1.42	4.5%	6.19	19.6%	2.22	7.0%	21.82	68.9%	31.65
Agua Caliente	0.50	10.6%	2.35	49.6%		0.0%	1.89	39.9%	4.73
Bear Valley		0.0%	0.74	28.6%	1.18	45.9%	0.66	25.6%	2.58
Box Canyon		0.0%	0.35	21.5%		0.0%	1.28	78.6%	1.63
Greaterville		0.0%		0.0%		0.0%	1.28	100.0%	1.28
Lake		0.0%		0.0%		0.0%	0.71	100.0%	0.71
Mc Beth	0.78	49.3%		0.0%		0.0%	0.81	51.0%	1.59
Montana	0.13	1.4%		0.0%	0.23	2.5%	9.10	96.2%	9.46
Pena Blanca		0.0%	2.76	100.0%		0.0%		0.0%	2.76
Proctor		0.0%		0.0%	0.81	12.4%	5.70	87.6%	6.50
Rosemont		0.0%		0.0%		0.0%	0.40	100.0%	0.40
Sierra Vista Ranger District	6.66	10.6%	3.29	5.3%	10.69	17.1%	41.90	67.0%	62.54
Alisos		0.0%		0.0%	0.87	17.0%	4.26	83.0%	5.13
Chuney	1.89	100.0%		0.0%		0.0%		0.0%	1.89
Collins Canyon	4.39	82.8%	0.86	16.3%		0.0%	0.05	1.0%	5.31
Duquesne		0.0%	0.29	9.0%	1.02	31.4%	1.93	59.7%	3.24
Farrell		0.0%	0.14	1.8%	1.89	23.6%	5.96	74.6%	8.00
Harshaw		0.0%	0.81	18.1%	1.27	28.4%	2.40	53.5%	4.48
Hayfield		0.0%		0.0%	0.50	46.3%	0.58	53.6%	1.08
Lewis		0.0%		0.0%		0.0%	0.70	100.0%	0.70
Lone Mountain		0.0%		0.0%	1.25	8.3%	13.83	91.7%	15.09
Lyle Canyon		0.0%		0.0%	1.56	15.3%	8.63	84.7%	10.19
Mc Farland		0.0%		0.0%		0.0%	0.37	100.0%	0.37
Post Canyon	0.37	36.5%		0.0%		0.0%	0.65	63.8%	1.02
San Rafael		0.0%	1.18	31.9%	2.32	62.8%	0.20	5.3%	3.70
Santa Cruz		0.0%		0.0%		0.0%	2.34	100.0%	2.34

Table 17. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Nogales Ranger District	1.68	3.1%	8.98	16.4%	6.08	11.1%	37.93	69.4%	54.66
Agua Caliente		0.0%		0.0%	0.34	100.0%		0.0%	0.34
Bear Valley		0.0%	0.78	9.3%	0.63	7.5%	6.97	83.2%	8.37
Bear Valley/Not in allotment		0.0%		0.0%	0.37	100.0%		0.0%	0.37
Box Canyon		0.0%		0.0%	0.38	16.6%	1.91	83.5%	2.29
Cross S		0.0%		0.0%	0.17	8.3%	1.83	91.5%	2.00
Greaterville		0.0%		0.0%		0.0%	1.29	100.0%	1.29
Lake	0.23	19.2%	0.24	20.3%		0.0%	0.72	60.4%	1.19
Montana		0.0%		0.0%	3.28	29.4%	7.88	70.6%	11.16
Nogales		0.0%		0.0%	0.22	100.0%		0.0%	0.22
Oak Tree II		0.0%	0.37	8.3%		0.0%	4.09	91.6%	4.46
Pena Blanca		0.0%	7.11	69.4%	0.70	6.8%	2.45	23.9%	10.25
Proctor		0.0%		0.0%		0.0%	0.96	100.0%	0.96
Rock Corral	1.45	100.0%		0.0%		0.0%		0.0%	1.45
Rosemont		0.0%	0.48	4.6%		0.0%	9.83	95.4%	10.31
Santa Catalina Ranger District	1.39	100.0%		0.0%		0.0%		0.0%	1.39
American Flag	1.39	100.0%		0.0%		0.0%		0.0%	1.39
Sierra Vista Ranger District	9.30	13.7%	7.47	11.0%	6.31	9.3%	44.90	66.0%	67.98
Alisos		0.0%		0.0%		0.0%	4.86	100.0%	4.86
Chuney		0.0%	2.00	100.0%		0.0%		0.0%	2.00
Collins Canyon		0.0%	0.12	25.2%		0.0%	0.35	75.3%	0.46
Duquesne	2.26	40.3%	0.44	7.9%		0.0%	2.92	51.9%	5.62
Farrell		0.0%		0.0%		0.0%	8.31	100.0%	8.31
Harshaw	2.32	25.4%	1.55	17.0%	0.97	10.6%	4.29	47.0%	9.13
Hayfield		0.0%		0.0%		0.0%	1.09	100.0%	1.09
Lewis		0.0%		0.0%		0.0%	0.29	100.0%	0.29
Lone Mountain	2.38	14.0%	2.66	15.6%	3.89	22.9%	8.10	47.6%	17.04
Lyle Canyon	1.55	14.4%	0.71	6.5%		0.0%	8.55	79.1%	10.81
Mc Farland		0.0%		0.0%	0.13	13.3%	0.85	86.6%	0.98
Post Canyon	0.79	100.0%		0.0%		0.0%		0.0%	0.79
San Rafael		0.0%		0.0%		0.0%	1.88	100.0%	1.88
Santa Cruz		0.0%		0.0%	1.32	27.9%	3.41	72.2%	4.72

Table 18. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Douglas Ranger District	0.54	26.0%	1.53	74.2%		0.0%		0.0%	2.06
Walnut Canyon	0.54	26.0%	1.53	74.2%		0.0%		0.0%	2.06
Nogales Ranger District	1.26	3.0%	15.01	35.4%	5.44	12.8%	20.71	48.8%	42.42
Agua Caliente		0.0%	2.13	100.0%		0.0%		0.0%	2.13
Bear Valley	0.78	12.6%	2.11	33.9%	1.44	23.2%	1.89	30.3%	6.22
Box Canyon		0.0%	1.16	50.7%		0.0%	1.12	49.2%	2.28
Cross S		0.0%		0.0%	0.18	5.8%	2.91	94.1%	3.09
Greaterville	0.32	10.7%	1.88	63.1%	0.74	24.8%	0.04	1.3%	2.98
Lake		0.0%		0.0%	0.45	33.1%	0.90	66.9%	1.35
Mc Beth		0.0%	0.49	100.0%		0.0%		0.0%	0.49
Montana	0.16	1.4%		0.0%	1.22	11.3%	9.42	87.2%	10.80
Oak Tree II		0.0%	0.64	25.5%	0.40	15.7%	1.49	59.0%	2.53
Pena Blanca		0.0%	6.52	69.8%	0.92	9.9%	1.90	20.4%	9.34
Proctor		0.0%		0.0%		0.0%	1.04	100.0%	1.04
Rosemont		0.0%	0.08	47.6%	0.09	52.7%		0.0%	0.17
Sierra Vista Ranger District		0.0%	1.07	3.5%	4.09	13.1%	25.93	83.4%	31.09
Alisos		0.0%		0.0%	0.81	27.8%	2.10	72.1%	2.92
Chuney		0.0%		0.0%		0.0%	1.82	100.0%	1.82
Duquesne		0.0%		0.0%	0.37	14.9%	2.12	85.1%	2.49
Farrell		0.0%	0.64	14.1%		0.0%	3.90	85.9%	4.54
Harshaw		0.0%		0.0%		0.0%	3.22	100.0%	3.22
Hayfield		0.0%		0.0%	0.73	100.0%		0.0%	0.73
Lone Mountain		0.0%		0.0%		0.0%	3.79	100.0%	3.79
Lyle Canyon		0.0%		0.0%	1.15	19.0%	4.89	81.0%	6.04
Mc Farland		0.0%		0.0%		0.0%	0.70	100.0%	0.70
Post Canyon		0.0%		0.0%		0.0%	1.21	100.0%	1.21
San Rafael		0.0%		0.0%	1.02	76.9%	0.31	23.3%	1.33
Santa Cruz		0.0%	0.43	18.8%		0.0%	1.86	81.0%	2.30

Table 19. Critical habitat survey miles impacted by cattle on the Coronado National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Nogales Ranger District	1.04	1.6%	8.35	12.9%	12.63	19.6%	42.56	65.9%	64.57
Agua Caliente		0.0%	2.26	70.8%	0.93	29.0%		0.0%	3.19
Apache Springs		0.0%		0.0%	1.34	13.2%	8.80	86.8%	10.14
Bear Valley	1.04	14.5%		0.0%	3.71	52.0%	2.38	33.4%	7.14
Box Canyon		0.0%		0.0%		0.0%	1.69	100.0%	1.69
Cross S		0.0%		0.0%		0.0%	2.85	100.0%	2.85
Gardner		0.0%		0.0%	1.73	57.8%	1.26	42.0%	3.00
Greaterville		0.0%	1.29	44.3%	0.66	22.7%	0.96	32.9%	2.92
Lake		0.0%		0.0%		0.0%	0.39	100.0%	0.39
Montana		0.0%		0.0%		0.0%	8.73	100.0%	8.73
Not in allotment		0.0%	2.26	55.6%	1.81	44.5%		0.0%	4.07
Oak Tree II		0.0%		0.0%		0.0%	2.44	100.0%	2.44
Pena Blanca		0.0%	1.89	31.3%		0.0%	4.13	68.6%	6.02
Proctor		0.0%	0.64	22.5%	2.22	77.5%		0.0%	2.86
Rosemont		0.0%		0.0%	0.23	2.5%	8.91	97.5%	9.14
Sierra Vista Ranger District	3.64	6.1%	7.69	13.0%	8.14	13.7%	39.88	67.2%	59.35
Alisos	0.24	4.3%	1.60	29.1%	0.59	10.8%	3.06	55.8%	5.49
Chuney		0.0%		0.0%		0.0%	1.98	100.0%	1.98
Duquesne		0.0%	0.24	8.6%	1.79	63.1%	0.81	28.5%	2.83
Farrell	0.84	12.7%	0.32	4.9%	1.81	27.4%	3.65	55.1%	6.63
Harshaw	0.67	15.8%	2.77	65.6%		0.0%	0.78	18.5%	4.22
Hayfield		0.0%		0.0%	1.07	100.0%		0.0%	1.07
Lone Mountain		0.0%	2.35	13.8%	1.97	11.6%	12.64	74.6%	16.96
Lyle Canyon		0.0%		0.0%		0.0%	9.67	100.0%	9.67
Mc Farland		0.0%	0.41	100.0%		0.0%		0.0%	0.41
Post Canyon		0.0%		0.0%		0.0%	1.47	100.0%	1.47
San Rafael	1.89	100.0%		0.0%		0.0%		0.0%	1.89
Santa Cruz		0.0%		0.0%		0.0%	0.37	100.0%	0.37
Santa Cruz/Alisos		0.0%		0.0%		0.0%	3.55	100.0%	3.55
Sawtelle		0.0%		0.0%	0.91	32.6%	1.88	67.3%	2.80

Gila National Forest (New Mexico)

The Gila National Forest allotments surveyed by the Center contain designated critical habitat for eight different threatened and endangered species, including spikedace, loach minnow, Gila chub, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, and yellow-billed cuckoo.

From 2017-2024, the Center surveyed 798.94 miles of public lands critical habitat designations in the Gila National Forest for cattle impacts (range 4.9-149.7 miles/year, average 99.8 miles/year) (Tables 20-28). Aggregate data concerning Gila surveys 2017-2024 is contained in Table 20; Tables 21-28 include data for each year of surveys.

Across all survey years, percent of survey miles moderately to significantly impacted by cattle on the Glenwood Ranger District ranged from 23% (2023) to 85% (2021), with an average of 55% across seven survey years.

Percent of survey miles moderately to significantly impacted by cattle on the Quemado Ranger District ranged from 28% (2017) to 100% (2018) with an average of 64% across survey years. Both Laney and Luna allotments had 100% of survey miles moderately to significantly impacted by cattle, documented in multiple years.

Reserve Ranger District has been surveyed for eight consecutive years, from 2017-2024, and has the highest average percentage of critical habitat miles moderately to significantly impacted by cattle across the Gila National Forest (73%, ranging from 100% in 2018 to 37% in 2023). Reserve is among the worst Ranger Districts in Region 3 in terms of riparian habitat damage due to livestock. Numerous allotments, including Deep Canyon and Frisco Plaza, demonstrate chronic, high levels of cattle-damaged critical habitat. High levels of cattle disturbance have also been documented outside of allotment boundaries in the Reserve Ranger District.

The percentage of critical habitat survey miles damaged on the Silver City Ranger District average nearly 60% over the six surveys years, but in 2024 only 4% showed moderate to significant damage.

Likewise, the Wilderness Ranger District ranged from 5% (2020) to 85% (2017) moderately to significantly damaged by cattle (average 34%) but has shown 12% and 11% over the past two years, respectively. Allotments such as Jordan Mesa, XSX, and Redstone have shown recent improvements.

Table 20. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Gila National Forest, by allotment, from 2017-2024.

Allotment	2017	2018	2019	2020	2021	2022	2023	2024
Black Range Ranger District			17%		57%	0%	0%	0%
Corduroy			100%		57%		0%	0%
South Fork			0%			0%		
Glenwood Ranger District	71%	32%	77%		85%	52%	23%	42%
Alma	100%	100%	100%		100%	100%	37%	100%
Cedar Breaks	0%		0%					
Citizen & Roberts Park	86%		100%		100%	0%	0%	0%
Devils Park	100%	0%	100%		100%	87%	100%	100%
Dry Creek	19%		0%			66%	0%	
Harden Cienega			59%		61%	59%	35%	83%
Harve Gulch & Bighorn	86%		88%		100%	0%	0%	0%
Kelly	75%	29%	100%		90%	54%	9%	18%
Not in allotment (btw Pleasanton & Potholes)							19%	
Not in allotment (btw Harden Cienega & Pleasanton)							15%	
Pleasanton	0%							
Pueblo Creek			0%		100%			
Tennessee					100%	65%	66%	0%
Whiterocks			30%					
Quemado Ranger District	28%	100%	77%		67%	91%	41%	47%
Laney			69%		100%	100%	58%	56%
Luna	28%	100%	100%		47%	91%	11%	21%
West Apache Creek			0%					
Reserve Ranger District	81%	100%	78%	79%	91%	71%	37%	43%
Alexander	44%	100%	100%		0%	36%	4%	69%
Cienega (Black Bob)	100%	100%	100%		100%	70%	14%	13%
Corner Mountain	53%		36%		100%	65%	0%	0%
Deep Canyon	62%	100%	100%		100%	79%	62%	86%
Eagle Peak				78%		90%	0%	0%
Frisco Plaza	100%	100%	100%		100%	90%	98%	89%
Govina & West Sand Flat	67%		100%		77%	20%	0%	18%
Lower Plaza	100%		100%			100%	0%	0%
McCarty				100%				0%
Negrito/Yeguas	100%	100%	65%		88%	38%	36%	35%
Not in allotment (btw Negrito/Yeguas boundary)							36%	100%
Not in allotment (outside of Alexander)							100%	100%
T Bar			43%					
Silver City Ranger District	82%		54%		100%	44%	20%	6%
Bear Creek			62%					
Brock Canyon*	100%		51%			48%	4%	0%
Gila River	72%		57%		100%	100%	50%	20%
Mogollon Creek	0%							
Not in allotment (Gila River Wilderness)**	100%						0%	0%
Watson Mountain***	0%					0%		0%
Wilderness Ranger District	83%		51%	5%	77%	43%	34%	6%
Diamond Bar			3%	0%	73%	10%	100%	100%
Jordan Mesa	100%		87%	17%	76%	0%	0%	0%
Redstone****	100%		98%			95%	57%	0%
Sapillo	0%		0%	0%				
Taylor Creek	87%		100%		100%	26%	29%	42%
XSX	0%		38%		76%	27%	0%	0%

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District. ***Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ****Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 21. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2017.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Glenwood Ranger District	2.75	10.7%	4.59	17.8%	3.73	14.5%	14.65	57.0%	25.72
Alma		0.0%		0.0%		0.0%	2.69	100.0%	2.69
Cedar Breaks	0.54	100.0%		0.0%		0.0%		0.0%	0.54
Citizen & Roberts Park		0.0%	0.32	13.6%	0.38	16.0%	1.65	70.3%	2.35
Devils Park		0.0%		0.0%		0.0%	3.09	100.0%	3.09
Dry Creek	1.39	30.7%	2.26	50.0%		0.0%	0.87	19.3%	4.51
Harve Gulch & Bighorn	0.59	13.6%		0.0%	2.23	51.7%	1.49	34.6%	4.32
Kelly		0.0%	2.01	25.2%	1.12	14.1%	4.85	60.8%	7.98
Pleasanton	0.23	100.0%		0.0%		0.0%		0.0%	0.23
Quemado Ranger District	5.76	42.5%	3.92	28.9%	0.82	6.1%	3.03	22.4%	13.54
Luna	5.76	42.5%	3.92	28.9%	0.82	6.1%	3.03	22.4%	13.54
Reserve Ranger District	0.76	2.9%	4.26	16.2%	2.44	9.3%	18.84	71.6%	26.30
Alexander		0.0%	1.33	55.6%		0.0%	1.06	44.3%	2.39
Cienega (Black Bob)		0.0%		0.0%		0.0%	3.54	100.0%	3.54
Corner Mountain		0.0%	2.19	47.3%	2.44	52.6%		0.0%	4.63
Deep Canyon	0.50	15.3%	0.74	22.8%		0.0%	2.01	62.0%	3.24
Frisco Plaza		0.0%		0.0%		0.0%	7.05	100.0%	7.05
Govina & West Sand Flat	0.27	33.7%		0.0%		0.0%	0.53	66.5%	0.79
Lower Plaza		0.0%		0.0%		0.0%	0.33	100.0%	0.33
Negrito/Yeguas		0.0%		0.0%		0.0%	4.32	100.0%	4.32
Silver City Ranger District	1.11	9.8%	0.89	7.8%	0.80	7.0%	8.57	75.4%	11.37
Brock Canyon*		0.0%		0.0%		0.0%	2.62	100.0%	2.62
Gila River		0.0%	0.89	12.6%	0.80	11.2%	4.29	60.5%	5.98
Mogollon Creek	0.28	100.0%		0.0%		0.0%		0.0%	0.28
Not in allotment (Gila River Wilderness)**		0.0%		0.0%		0.0%	1.66	100.0%	1.66
Watson Mountain***	0.83	100.0%		0.0%		0.0%		0.0%	0.83
Wilderness Ranger District	1.41	4.9%	3.51	12.3%	4.62	16.2%	19.03	66.6%	28.56
Jordan Mesa		0.0%		0.0%	3.70	58.9%	2.58	41.1%	6.27
Redstone****		0.0%		0.0%		0.0%	12.98	100.0%	12.98
Sapillo	0.95	43.3%	1.25	56.6%		0.0%		0.0%	2.20
Taylor Creek		0.0%	0.65	13.0%	0.92	18.2%	3.47	68.8%	5.05
XSX	0.45	22.0%	1.61	77.9%		0.0%		0.0%	2.07

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District. ***Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ****Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 22. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2018.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Glenwood Ranger District		0.0%	1.91	67.9%		0.0%	0.90	32.1%	2.81
Alma		0.0%		0.0%		0.0%	0.29	100.0%	0.29
Devils Park		0.0%	0.38	100.0%		0.0%		0.0%	0.38
Kelly		0.0%	1.53	71.3%		0.0%	0.61	28.7%	2.14
Quemado Ranger District		0.0%		0.0%	0.32	100.0%		0.0%	0.32
Luna		0.0%		0.0%	0.32	100.0%		0.0%	0.32
Reserve Ranger District		0.0%		0.0%	1.55	86.4%	0.24	13.7%	1.79
Alexander		0.0%		0.0%	0.44	100.0%		0.0%	0.44
Cienega (Black Bob)		0.0%		0.0%	0.41	100.0%		0.0%	0.41
Deep Canyon		0.0%		0.0%		0.0%	0.24	100.0%	0.24
Frisco Plaza		0.0%		0.0%	0.37	100.0%		0.0%	0.37
Negrito/Yeguas		0.0%		0.0%	0.33	100.0%		0.0%	0.33

Table 23. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	3.40	83.2%		0.0%	0.69	16.9%	4.09
Corduroy		0.0%		0.0%		0.0%	0.69	100.0%	0.69
South Fork		0.0%	3.40	100.0%		0.0%		0.0%	3.40
Glenwood Ranger District	3.99	13.1%	2.94	9.7%	5.47	18.0%	18.00	59.2%	30.41
Alma		0.0%		0.0%		0.0%	1.80	100.0%	1.80
Cedar Breaks	0.37	48.7%	0.39	51.2%		0.0%		0.0%	0.76
Citizen & Roberts Park		0.0%		0.0%		0.0%	2.03	100.0%	2.03
Devils Park		0.0%		0.0%		0.0%	2.98	99.9%	2.98
Dry Creek	0.60	35.3%	1.10	64.8%		0.0%		0.0%	1.69
Harden Cienega	1.13	27.4%	0.57	13.8%	1.36	32.9%	1.08	26.0%	4.14
Harve Gulch & Bighorn	0.56	11.6%		0.0%		0.0%	4.27	88.5%	4.82
Kelly		0.0%		0.0%	4.11	41.7%	5.75	58.3%	9.86
Pueblo Creek	1.10	55.2%	0.89	44.6%		0.0%		0.0%	1.99
Whiterocks	0.23	69.1%		0.0%		0.0%	0.10	30.4%	0.34
Quemado Ranger District	2.67	20.6%	0.37	2.8%	5.07	39.0%	4.51	35.7%	12.63
Laney	1.97	26.5%	0.37	5.0%	3.44	46.3%	1.65	22.2%	7.43
Luna		0.0%		0.0%	1.63	36.1%	2.87	63.8%	4.50
West Apache Creek	0.70	100.0%		0.0%		0.0%		0.0%	0.70
Reserve Ranger District	0.77	3.2%	4.47	18.7%	3.28	13.7%	15.38	64.4%	23.89
Alexander		0.0%		0.0%	0.74	100.0%		0.0%	0.74
Cienega (Black Bob)		0.0%		0.0%	0.39	10.9%	3.19	89.0%	3.58
Corner Mountain	0.77	22.3%	1.45	42.0%	0.54	15.7%	0.70	20.1%	3.46
Deep Canyon		0.0%		0.0%		0.0%	1.68	100.0%	1.68
Frisco Plaza		0.0%		0.0%		0.0%	7.50	100.0%	7.50
Govina & West Sand Flat		0.0%		0.0%	0.32	46.4%	0.37	53.6%	0.69
Lower Plaza		0.0%		0.0%	0.26	79.0%	0.07	21.0%	0.33
Negrito/Yeguas		0.0%	0.92	35.0%		0.0%	1.72	65.1%	2.64
T Bar		0.0%	2.09	57.6%	1.02	27.9%	0.53	14.6%	3.64
Silver City Ranger District		0.0%	8.91	46.6%	1.68	8.8%	8.55	44.7%	19.14
Bear Creek		0.0%	0.33	37.9%		0.0%	0.54	61.7%	0.88
Brock Canyon*		0.0%	5.71	49.4%	0.77	6.7%	5.07	43.8%	11.56
Gila River		0.0%	2.86	42.6%	0.91	13.6%	2.94	43.8%	6.71
Wilderness Ranger District	3.36	6.7%	21.18	42.0%	8.35	16.5%	17.59	34.8%	50.48
Diamond Bar	2.40	12.4%	16.36	84.5%		0.0%	0.61	3.2%	19.37
Jordan Mesa		0.0%	0.81	12.5%	5.68	87.5%		0.0%	6.49
Redstone**	0.23	1.5%		0.0%		0.0%	14.60	98.5%	14.83
Sapillo		0.0%	0.44	100.0%		0.0%		0.0%	0.44
Taylor Creek		0.0%		0.0%		0.0%	2.38	100.0%	2.38
XSX	0.73	10.5%	3.56	51.1%	2.67	38.4%		0.0%	6.97

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 24. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Reserve Ranger District		0.0%	1.33	20.6%		0.0%	5.11	79.4%	6.44
Eagle Peak		0.0%	1.33	21.6%		0.0%	4.82	78.4%	6.14
McCarty		0.0%		0.0%		0.0%	0.30	100.0%	0.30
Wilderness Ranger District	0.91	10.3%	7.48	84.8%	0.43	4.9%		0.0%	8.82
Diamond Bar		0.0%	4.96	100.0%		0.0%		0.0%	4.96
Jordan Mesa		0.0%	2.12	82.9%	0.43	17.0%		0.0%	2.56
Sapillo	0.91	69.2%	0.40	30.8%		0.0%		0.0%	1.31

Table 25. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	0.34	43.1%		0.0%	0.45	57.1%	0.79
Corduroy		0.0%	0.34	43.1%		0.0%	0.45	57.1%	0.79
Glenwood Ranger District	5.69	14.6%		0.0%	1.93	4.9%	31.35	80.4%	38.97
Alma		0.0%		0.0%		0.0%	1.86	100.0%	1.86
Citizen & Roberts Park		0.0%		0.0%		0.0%	2.36	100.0%	2.36
Devils Park		0.0%		0.0%		0.0%	3.53	100.0%	3.53
Harden Cienega	4.62	38.7%		0.0%	1.44	12.0%	5.90	49.3%	11.96
Harve Gulch & Bighorn		0.0%		0.0%		0.0%	4.11	100.0%	4.11
Kelly	1.07	10.3%		0.0%		0.0%	9.32	89.7%	10.39
Pueblo Creek		0.0%		0.0%	0.49	15.2%	2.73	84.7%	3.22
Tennessee		0.0%		0.0%		0.0%	1.55	100.0%	1.55
Quemado Ranger District	3.85	19.9%	2.60	13.5%	2.20	11.4%	10.70	55.3%	19.35
Laney		0.0%		0.0%		0.0%	7.29	100.0%	7.29
Luna	3.85	31.9%	2.60	21.6%	2.20	18.3%	3.41	28.3%	12.06
Reserve Ranger District	0.18	0.5%	2.84	8.6%	3.63	11.0%	26.25	79.8%	32.89
Alexander	0.18	16.7%	0.90	83.0%		0.0%		0.0%	1.08
Cienega (Black Bob)		0.0%		0.0%		0.0%	3.54	100.0%	3.54
Corner Mountain		0.0%		0.0%		0.0%	2.51	100.0%	2.51
Deep Canyon		0.0%		0.0%	1.27	48.3%	1.36	51.8%	2.62
Frisco Plaza		0.0%		0.0%		0.0%	7.46	100.0%	7.46
Govina & West Sand Flat		0.0%	0.21	23.3%	0.44	47.4%	0.27	29.2%	0.92
Negrito/Yeguas		0.0%	1.73	11.7%	1.93	13.0%	11.10	75.2%	14.76
Silver City Ranger District		0.0%		0.0%	0.75	9.5%	7.21	90.5%	7.96
Gila River		0.0%		0.0%	0.75	9.5%	7.21	90.5%	7.96
Wilderness Ranger District		0.0%	3.63	23.1%	5.84	37.1%	6.24	39.7%	15.72
Diamond Bar		0.0%	1.39	26.9%	1.47	28.4%	2.31	44.7%	5.18
Jordan Mesa		0.0%	1.65	24.5%	2.52	37.4%	2.57	38.2%	6.74
Taylor Creek		0.0%		0.0%		0.0%	1.36	100.0%	1.36
XSX		0.0%	0.59	24.2%	1.85	75.8%		0.0%	2.44

Table 26. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	2.25	100.0%		0.0%		0.0%	2.25
South Fork		0.0%	2.25	100.0%		0.0%		0.0%	2.25
Glenwood Ranger District	0.55	1.6%	16.39	46.9%	5.51	15.8%	12.52	35.8%	34.98
Alma		0.0%		0.0%		0.0%	1.77	100.0%	1.77
Citizen & Roberts Park		0.0%	2.35	100.0%		0.0%		0.0%	2.35
Devils Park		0.0%	0.39	12.7%	0.77	24.9%	1.92	62.2%	3.08
Dry Creek		0.0%	1.01	33.4%	1.60	53.1%	0.40	13.3%	3.01
Harden Cienega		0.0%	4.09	41.4%	0.26	2.7%	5.51	55.9%	9.87
Harve Gulch & Bighorn	0.55	12.5%	3.84	87.4%		0.0%		0.0%	4.39
Kelly		0.0%	4.30	46.1%	2.88	30.8%	2.15	23.0%	9.34
Tennessee		0.0%	0.42	35.0%		0.0%	0.77	64.6%	1.19
Quemado Ranger District		0.0%	1.16	9.0%	2.35	18.3%	9.34	72.7%	12.85
Laney		0.0%		0.0%	0.46	6.1%	7.00	93.8%	7.46
Luna		0.0%	0.42	9.4%	1.89	42.2%	2.16	48.3%	4.48
Reserve Ranger District		0.0%	9.19	29.0%	3.22	10.1%	19.33	60.9%	31.74
Alexander		0.0%	1.37	64.5%		0.0%	0.75	35.6%	2.12
Cienega (Black Bob)		0.0%	1.05	30.5%	1.17	34.0%	1.22	35.6%	3.44
Corner Mountain		0.0%	1.02	35.0%	1.07	36.7%	0.83	28.4%	2.92
Deep Canyon		0.0%	0.69	21.3%	0.27	8.3%	2.29	70.3%	3.26
Eagle Peak		0.0%	0.62	10.1%	0.71	11.5%	4.81	78.4%	6.14
Frisco Plaza		0.0%	0.73	9.7%		0.0%	6.82	90.3%	7.56
Govina & West Sand Flat		0.0%	0.73	80.7%		0.0%	0.18	19.9%	0.91
Lower Plaza		0.0%		0.0%		0.0%	0.34	100.0%	0.34
Negrito/Yeguas		0.0%	3.71	62.1%		0.0%	2.26	37.9%	5.97
Silver City Ranger District	1.71	12.0%	6.23	43.9%	2.50	17.6%	3.76	26.5%	14.19
Brock Canyon*	0.33	2.6%	6.23	49.5%	2.27	18.0%	3.76	29.9%	12.58
Gila River		0.0%		0.0%	0.23	100.0%		0.0%	0.23
Watson Mountain**	1.38	100.0%		0.0%		0.0%		0.0%	1.38
Wilderness Ranger District		0.0%	22.96	57.2%	1.95	4.8%	15.27	38.0%	40.17
Diamond Bar		0.0%	4.41	90.5%		0.0%	0.47	9.6%	4.87
Jordan Mesa		0.0%	7.41	100.0%		0.0%		0.0%	7.41
Redstone***		0.0%	0.72	5.3%	0.59	4.3%	12.30	90.4%	13.61
Taylor Creek		0.0%	3.22	74.0%	0.58	13.4%	0.55	12.7%	4.35
XSX		0.0%	7.20	72.6%	0.78	7.8%	1.95	19.6%	9.92

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ***Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 27. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District		0.0%	1.49	100.0%		0.0%		0.0%	1.49
Corduroy		0.0%	1.49	100.0%		0.0%		0.0%	1.49
Glenwood Ranger District		0.0%	37.08	77.4%	4.92	10.3%	5.89	12.3%	47.89
Alma		0.0%	1.29	62.7%		0.0%	0.76	37.2%	2.05
Citizen & Roberts Park		0.0%	2.33	100.0%		0.0%		0.0%	2.33
Devils Park		0.0%		0.0%	2.38	86.7%	0.37	13.5%	2.75
Dry Creek		0.0%	2.18	100.0%		0.0%		0.0%	2.18
Harden Cienega		0.0%	5.75	64.9%	0.59	6.6%	2.53	28.5%	8.87
Harve Gulch & Bighorn		0.0%	4.35	100.0%		0.0%		0.0%	4.35
Kelly		0.0%	8.46	90.6%	0.17	1.8%	0.71	7.6%	9.34
Not in allotment (btw Pleasanton/ Potholes)		0.0%	6.59	81.2%		0.0%	1.52	18.8%	8.11
Not in allotment (btw Harden Cienega/ Pleasanton)		0.0%	5.72	84.9%	1.02	15.1%		0.0%	6.74
Tennessee		0.0%	0.40	34.5%	0.77	65.7%		0.0%	1.17
Quemado Ranger District		0.0%	6.75	58.0%	1.12	9.6%	3.77	32.4%	11.64
Laney		0.0%	3.25	42.2%	0.67	8.8%	3.77	49.0%	7.69
Luna		0.0%	3.50	88.7%	0.45	11.3%		0.0%	3.95
Reserve Ranger District	0.38	1.2%	19.48	61.8%	1.30	4.1%	10.35	32.8%	31.51
Alexander		0.0%	1.93	95.8%	0.08	4.1%		0.0%	2.02
Cienega (Black Bob)	0.38	11.2%	2.56	74.5%		0.0%	0.49	14.3%	3.43
Corner Mountain		0.0%	2.91	100.0%		0.0%		0.0%	2.91
Deep Canyon		0.0%	0.71	38.5%		0.0%	1.13	61.5%	1.84
Eagle Peak		0.0%	6.32	100.0%		0.0%		0.0%	6.32
Frisco Plaza		0.0%	0.15	2.0%	0.81	10.8%	6.54	87.3%	7.50
Govina & West Sand Flat		0.0%	0.91	100.0%		0.0%		0.0%	0.91
Lower Plaza		0.0%	0.32	100.0%		0.0%		0.0%	0.32
Negrito/Yeguas		0.0%	3.93	64.3%		0.0%	2.18	35.7%	6.11
Not in allotment (outside of Alexander)		0.0%		0.0%	0.41	100.0%		0.0%	0.41
Silver City Ranger District	0.33	1.4%	18.04	79.0%	1.81	7.9%	2.66	11.7%	22.83
Brock Canyon*		0.0%	11.48	96.3%	0.45	3.7%		0.0%	11.92
Gila River		0.0%	4.00	49.9%	1.36	16.9%	2.66	33.1%	8.02
Not in allotment (Gila River Wilderness)**	0.33	11.5%	2.57	88.4%		0.0%		0.0%	2.90
Wilderness Ranger District	2.28	6.7%	20.07	58.9%	10.33	30.3%	1.36	4.0%	34.05
Diamond Bar		0.0%		0.0%		0.0%	0.90	100.0%	0.90
Jordan Mesa		0.0%	4.00	100.0%		0.0%		0.0%	4.00
Redstone***	2.19	12.7%	5.30	30.7%	9.75	56.5%		0.0%	17.25
Taylor Creek		0.0%	2.55	71.0%	0.58	16.2%	0.46	12.9%	3.59
XSX	0.09	1.1%	8.22	98.9%		0.0%		0.0%	8.31

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District.
***Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Table 28. Critical habitat survey miles impacted by cattle on the Gila National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Black Range Ranger District	1.03	100.0%		0.0%		0.0%		0.0%	1.03
Corduroy	1.03	100.0%		0.0%		0.0%		0.0%	1.03
Glenwood Ranger District	7.74	27.8%	8.45	30.4%	4.06	14.6%	7.59	27.3%	27.84
Alma		0.0%		0.0%		0.0%	1.62	100.0%	1.62
Citizen & Roberts Park	2.18	100.0%		0.0%		0.0%		0.0%	2.18
Devils Park		0.0%		0.0%	2.48	80.1%	0.61	19.7%	3.09
Harden Cienega	1.07	17.0%		0.0%	0.82	12.9%	4.43	70.1%	6.31
Harve Gulch & Bighorn	4.48	100.0%		0.0%		0.0%		0.0%	4.48
Kelly		0.0%	7.69	81.8%	0.77	8.2%	0.93	9.9%	9.40
Tennessee		0.0%	0.76	100.0%		0.0%		0.0%	0.76
Quemado Ranger District	2.23	20.8%	3.50	32.6%	0.62	5.8%	4.37	40.8%	10.72
Laney		0.0%	3.50	44.3%	0.62	7.8%	3.78	47.9%	7.89
Luna	2.23	79.0%		0.0%		0.0%	0.59	21.0%	2.83
Reserve Ranger District	10.22	30.9%	8.69	26.3%	7.45	22.5%	6.69	20.3%	33.05
Alexander		0.0%	0.62	31.1%	0.07	3.4%	1.30	65.5%	1.98
Cienega (Black Bob)	0.40	11.6%	2.58	75.0%	0.16	4.7%	0.30	8.7%	3.44
Corner Mountain	2.16	75.5%	0.70	24.3%		0.0%		0.0%	2.86
Deep Canyon		0.0%	0.47	14.4%	0.26	8.1%	2.51	77.5%	3.24
Eagle Peak	2.76	46.0%	3.30	54.4%		0.0%		0.0%	6.06
Frisco Plaza	0.23	3.0%	0.58	7.6%	6.82	89.3%		0.0%	7.64
Govina & West Sand Flat	0.40	52.6%	0.22	28.9%	0.14	18.4%		0.0%	0.76
Lower Plaza	0.38	100.0%		0.0%		0.0%		0.0%	0.38
McCarty		0.0%	0.23	100.0%		0.0%		0.0%	0.23
Negrito/Yeguas	3.89	64.6%		0.0%		0.0%	2.13	35.4%	6.02
Not in allotment (outside of Alexander)		0.0%		0.0%		0.0%	0.45	100.0%	0.45
Silver City Ranger District	21.27	78.6%	4.22	15.6%		0.0%	1.56	5.8%	27.05
Brock Canyon*	11.79	100.0%		0.0%		0.0%		0.0%	11.79
Gila River	2.21	27.7%	4.22	52.8%		0.0%	1.56	19.5%	7.98
Not in allotment (Gila River Wilderness)**	5.89	100.0%		0.0%		0.0%		0.0%	5.89
Watson Mountain***	1.38	100.0%		0.0%		0.0%		0.0%	1.38
Wilderness Ranger District	28.12	90.5%	1.05	3.4%		0.0%	1.90	6.1%	31.06
Diamond Bar		0.0%		0.0%		0.0%	0.26	100.0%	0.26
Jordan Mesa	4.84	82.2%	1.05	17.8%		0.0%		0.0%	5.89
Redstone****	13.19	100.0%		0.0%		0.0%		0.0%	13.19
Taylor Creek	2.30	58.3%		0.0%		0.0%	1.64	41.6%	3.94
XSX	7.78	100.0%		0.0%		0.0%		0.0%	7.78

*Brock Canyon allotment is in both Silver City and Wilderness Ranger Districts. **May include areas within the Wilderness Ranger District. ***Watson Mountain allotment is in both Silver City and Glenwood Ranger Districts. ****Redstone allotment may occur in both Silver City and Wilderness Ranger Districts.

Lincoln National Forest (New Mexico)

Designated critical habitat on four grazing allotments in the Lincoln National Forest were surveyed in 2024. This first year of formal surveys showed no critical habitat miles moderately to significantly impacted by cattle, and most miles had no cattle impact at all (Tables 29-30). Though data are limited, the Lincoln National Forest is an outlier in Region 3 in that cattle impacts are a limited occurrence in the miles of critical habitat designations surveyed so far.

Table 29. Percent Of Critical Habitat Survey Miles Moderately To Significantly Impacted By Cattle On The Lincoln National Forest, By Allotment, in 2024.

District/ Allotment	2024
Sacramento Ranger District	0%
Agua Chiquita - Trail	0%
Bounds	0%
James Canyon	0%
Not in allotment	0%
Sacramento	0%

Table 30. Critical Habitat Survey Miles Impacted By Cattle On The Lincoln National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Sacramento Ranger District	6.77	71.6%	2.68	28.4%		0.0%		0.0%	9.45
Agua Chiquita - Trail	2.31	48.2%	2.49	51.8%		0.0%		0.0%	4.80
Bounds	0.28	100.0%		0.0%		0.0%		0.0%	0.28
James Canyon	0.37	100.0%		0.0%		0.0%		0.0%	0.37
Not in allotment	0.47	100.0%		0.0%		0.0%		0.0%	0.47
Sacramento	3.34	94.6%	0.19	5.4%		0.0%		0.0%	3.53

Prescott National Forest

Grazing allotments on Prescott National Forest were surveyed in 2019 and 2022. Surveys in 2019 focused on a group of allotments situated along the Verde River and expanded to another group of allotments north of Agua Fria National Monument in 2022. Although there are no cattle authorized in the riparian corridor of the Verde River, allotments showed varying degrees of cattle damage in 2019, the worst being Walnut Creek and Horseshoe allotments at 100% and 91%, respectively (Table 31-32). Following a 2021 court settlement to remove unauthorized cattle from along the Verde River, overall conditions improved but problem areas persisted. For example, Perkinsville allotment still showed 56% of critical habitat miles moderately to significantly damaged by cattle post-settlement (Tables 31, 33). Moderate to significant damage defined 35% of critical habitat survey miles in the Verde Ranger District in 2022, which include designations for Gila chub and yellow-billed cuckoo along the Agua Fria River and its tributaries and which flow south into Agua Fria National Monument described further below.

Table 31. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Prescott National Forest, by allotment, in 2019 and 2022.

District/ Allotment	2019	2022
Chino Valley Ranger District	28%	7%
Antelope Hills	5%	0%
China Dam	40%	16%
Horseshoe	91%	0%
Muldoon	49%	
Perkinsville	0%	56%
Sand Flat	0%	15%
Walnut Creek	100%	
West Bear/Del Rio	8%	0%
Verde Ranger District		35%
Dugas		39%
Sycamore		30%
Todd		39%
V Bar		46%

Table 32. Critical habitat survey miles impacted by cattle on the Prescott National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Chino Valley Ranger District	0.00	0.0%	24.02	71.9%	4.91	14.7%	4.48	13.4%	33.41
Antelope Hills		0.0%	8.71	94.5%		0.0%	0.50	5.5%	9.21
China Dam		0.0%	1.85	60.2%	1.23	39.9%		0.0%	3.08
Horseshoe		0.0%	0.32	9.2%	1.16	33.6%	1.98	57.2%	3.46
Muldoon		0.0%	1.90	51.2%	1.82	48.8%		0.0%	3.72
Perkinsville		0.0%	1.33	100.0%		0.0%		0.0%	1.33
Sand Flat		0.0%	1.77	100.0%		0.0%		0.0%	1.77
Walnut Creek		0.0%		0.0%		0.0%	2.00	100.0%	2.00
West Bear/Del Rio		0.0%	8.14	92.0%	0.71	8.0%		0.0%	8.84

Table 33. Critical habitat survey miles impacted by cattle on the Prescott National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Chino Valley Ranger District	13.97	61.6%	7.12	31.4%	1.59	7.0%		0.0%	22.67
Antelope Hills	12.23	100.0%		0.0%		0.0%		0.0%	12.23
China Dam		0.0%	2.74	84.0%	0.52	16.0%		0.0%	3.26
Horseshoe	0.61	17.3%	2.91	82.7%		0.0%		0.0%	3.51
Perkinsville		0.0%	0.62	43.5%	0.81	56.4%		0.0%	1.43
Sand Flat	1.13	64.8%	0.35	20.2%	0.26	15.0%		0.0%	1.74
West Bear/Del Rio		0.0%	0.50	100.0%		0.0%		0.0%	0.50
Verde Ranger District	1.73	12.2%	7.49	52.7%	0.96	6.7%	4.02	28.3%	14.20
Dugas	0.28	12.0%	1.16	49.1%	0.50	21.3%	0.41	17.5%	2.37
Sycamore	0.63	7.3%	5.37	62.4%	0.37	4.3%	2.24	26.0%	8.61
Todd	0.39	54.8%	0.04	5.2%		0.0%	0.28	39.4%	0.72
V Bar	0.42	17.0%	0.92	36.7%	0.08	3.3%	1.08	43.2%	2.50

Santa Fe National Forest (New Mexico)

Surveys on the Santa Fe National Forest began in 2023 to assess the condition of New Mexico meadow jumping mouse critical habitat designations and to confirm that jumping mouse exclosures and off-limits riparian pastures are indeed free of cattle. Not only did we confirm cattle presence in off-limits riparian locations on multiple occasions, but surveys on the Santa Fe National Forest revealed percentages of critical habitat damage ranging from 15% on Red Top allotment to 92% on the San Miguel allotment, both in the Cuba Ranger District (Tables 34-35). The Santa Fe National Forest also contains designated critical habitat for Jemez Mountain salamander, upon which the jumping mouse designations largely overlap.

Table 34. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Santa Fe National Forest, by allotment, in 2023.

District/ Allotment	2023
Cuba Ranger District	55%
Ojito Frio	38%
Red Top	15%
San Miguel	92%
Jemez Ranger District	30%
Cebolla San Antonio	22%
San Diego	44%

Table 35. Critical habitat survey miles impacted by cattle on the Santa Fe National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cuba Ranger District	2.96	30.0%	1.45	14.7%	1.49	15.2%	3.96	40.2%	9.86
Ojito Frio	1.23	59.8%	0.05	2.3%	0.18	8.9%	0.60	29.0%	2.06
Red Top	1.72	53.4%	1.02	31.5%		0.0%	0.49	15.2%	3.23
San Miguel		0.0%	0.38	8.4%	1.31	28.7%	2.87	62.9%	4.56
Jemez Ranger District	7.93	46.7%	3.87	22.8%	2.91	17.2%	2.25	13.3%	16.96
Cebolla San Antonio	5.92	55.3%	2.39	22.4%	1.10	10.2%	1.30	12.2%	10.70
San Diego	2.01	32.1%	1.47	23.6%	1.82	29.1%	0.95	15.2%	6.25

Tonto National Forest (Arizona)

The Tonto National Forest contains designated riparian critical habitat for nine different threatened and endangered species including spikedace, loach minnow, Gila chub, razorback sucker, Chiricahua leopard frog, narrow-headed garter snake, northern Mexican garter snake, southwestern willow flycatcher, and western yellow-billed cuckoo. Aggregate data concerning Tonto surveys 2019-2024 are contained in Table 36; Tables 37-42 include data for each year of surveys.

From 2019-2024, the Center surveyed 223.4 miles of critical habitat on the Tonto for cattle impacts (range 5.1-78.9 miles/year, average 37.2 miles/year). A majority of stream miles surveyed on the Tonto showed moderate to significant damage from cattle (Tables 36-42).

Cave Creek District: Percent of survey miles moderately to significantly impacted by cattle when surveys began in 2019 was 56%, subsequently ranged from 0% (2022) to 75% (2023) and averaged 46.8% across all survey years. Rates of critical habitat damage were consistently high on Skeleton Ridge allotment, and the riparian border zone of Skeleton Ridge and Cedar Bench allotments showed 100% of survey miles moderately to significantly impacted in both 2019 and 2023.

Globe Ranger District: Percent of survey miles moderately to significantly impacted ranged from 67% (2021) to 100% (2024) and averaged 81% across all survey years. The most impaired allotment, Chrysotile, showed 77% and 100% of survey miles moderately to significantly impacted in the two years it was surveyed, 2022 and 2024.

Payson Ranger District: Percent of survey miles moderately to significantly impacted ranged from 0% (2022) to 100% (2021, 2023) and averaged 67% across all survey years. The most impaired allotments, Catholic Peak, Crouch Mesa, and Gentry Mountain showed 100% of survey miles moderately to significantly impacted in 2024; more than half of survey miles for each showed moderate to significant impacts in 2020, the other year in which they were surveyed.

Tonto Basin Ranger District: Percent of survey miles moderately to significantly impacted ranged from 36% (2024) to 69% (2021) and averaged 53% across all survey years. The most impaired allotment, Seventy-Six, showed 100% and 91% of survey miles with moderate to significant impacts in 2021 and 2024 respectively.

In 2024, the Center surveyed 43.2 stream miles of critical habitat on 12 grazing allotments. Of these, eight allotments showed moderate to significant cattle impacts on the majority of stream miles surveyed.

Table 36. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the Tonto National Forest, by allotment, from 2019-2024.

Allotment	2019	2020	2021	2022	2023	2024
Cave Creek Ranger District	56%			0%	75%	56%
Bartlett	63%					
Bull Springs	97%					
Cedar Bench	100%					
Copper Creek						56%
Deadman Mesa/ Skeleton Ridge	47%					
Red Creek	32%					
Sears Club/Chalk Mountain	0%			0%		
Skeleton Ridge	92%				67%	
Skeleton Ridge/Cedar Bench	100%				100%	
Skeleton Ridge/Red Creek	0%					
Globe Ranger District			67%	77%		100%
Bohme			0%			
Chrysotile				77%		100%
Pinto Creek			72%			
Payson Ranger District			100%	0%	100%	68%
Cedar Bench					100%	
Gisela			100%	0%		100%
Green Valley				0%		54%
Pleasant Valley Ranger District		63%	97%	39%		83%
Bar X			100%			
Buzzard Roost			100%	32%		
Catholic Peak		57%				100%
Crouch Mesa		71%				100%
Ellinwood/Diamond Butte				7%		
Gentry Mountain		59%				100%
Haigler Creek			100%			
Marsh Creek				42%		
OW			93%			0%
Red Lake		64%				83%
Soldier Camp			100%	100%		
Spring Creek			100%			
Tonto Basin Ranger District			69%			36%
Havens			100%			
Poison Spring			0%			
Seventy-Six			100%			91%
Tonto Basin			51%			18%
Walnut			0%			
Dagger & Hicks/Pike Peak			70%			48%

Table 37. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2019.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District	30.58	38.7%	3.79	4.8%	3.66	4.6%	40.95	51.8%	78.98
Bartlett	1.67	24.8%	0.81	12.0%	1.59	23.6%	2.67	39.7%	6.73
Bull Springs	0.26	3.2%		0.0%		0.0%	7.90	96.8%	8.16
Cedar Bench		0.0%		0.0%		0.0%	9.70	100.0%	9.70
Cedar Bench/ Skeleton Ridge border		0.0%		0.0%		0.0%	1.70	100.0%	1.70
Deadman Mesa/ Skeleton Ridge border	2.42	46.0%	0.35	6.7%	0.34	6.5%	2.14	40.8%	5.25
Red Creek	12.60	56.8%	2.49	11.2%	0.81	3.6%	6.27	28.3%	22.17
Sears Club/Chalk Mountain	11.39	100.0%		0.0%		0.0%		0.0%	11.39
Skeleton Ridge	0.86	6.9%	0.14	1.1%	0.92	7.4%	10.56	84.6%	12.49
Skeleton Ridge/ Red Creek border	1.38	100.0%		0.0%		0.0%		0.0%	1.38

Table 38. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2020.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Pleasant Valley Ranger District	0.20	1.9%	3.63	34.7%	2.33	22.3%	4.30	41.1%	10.45
Catholic Peak		0.0%	0.33	42.9%	0.14	18.2%	0.30	38.5%	0.78
Crouch Mesa		0.0%	0.47	29.1%	0.70	43.5%	0.44	27.4%	1.60
Gentry Mountain	0.20	8.3%	0.80	33.2%	0.67	27.8%	0.74	30.7%	2.40
Red Lake		0.0%	2.03	35.8%	0.82	14.5%	2.82	49.7%	5.67

Table 39. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2021.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Globe Ranger District	2.68	25.5%	0.83	7.9%	0.79	7.5%	6.20	59.0%	10.51
Bohme		0.0%	0.83	100.0%		0.0%		0.0%	0.83
Pinto Creek	2.68	27.8%		0.0%	0.79	8.1%	6.20	64.2%	9.67
Payson Ranger District		0.0%		0.0%		0.0%	4.03	100.0%	4.03
Gisela		0.0%		0.0%		0.0%	4.03	100.0%	4.03
Pleasant Valley Ranger District		0.0%	0.31	2.9%	2.79	26.6%	7.40	70.5%	10.49
Bar X		0.0%		0.0%		0.0%	1.69	100.0%	1.69
Buzzard Roost		0.0%		0.0%	0.91	100.0%		0.0%	0.91
Haigler Creek		0.0%		0.0%		0.0%	0.30	100.0%	0.30
OW		0.0%	0.31	7.4%	0.97	23.2%	2.90	69.5%	4.17
Soldier Camp		0.0%		0.0%	0.91	31.9%	1.95	68.1%	2.86
Spring Creek		0.0%		0.0%		0.0%	0.56	100.0%	0.56
Tonto Basin Ranger District	7.74	21.0%	3.65	9.9%	3.40	9.2%	22.03	59.8%	36.83
Havens		0.0%		0.0%	1.64	33.8%	3.22	66.2%	4.86
Poison Spring	0.41	100.0%		0.0%		0.0%		0.0%	0.41
Seventy-Six		0.0%		0.0%	1.75	23.7%	5.64	76.3%	7.39
Tonto Basin	5.69	29.7%	3.65	19.1%		0.0%	9.81	51.2%	19.15
Walnut	0.21	100.0%		0.0%		0.0%		0.0%	0.21
Dagger & Hicks/Pike Peak	1.43	29.7%		0.0%		0.0%	3.37	70.2%	4.80

Table 40. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2022.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District	4.39	100.0%		0.0%		0.0%		0.0%	4.39
Sears Club/Chalk Mountain	4.39	100.0%		0.0%		0.0%		0.0%	4.39
Globe Ranger District	0.65	10.6%	0.79	12.9%	1.33	21.6%	3.38	55.0%	6.14
Chrysotile	0.65	10.6%	0.79	12.9%	1.33	21.6%	3.38	55.0%	6.14
Payson Ranger District	0.46	20.1%	1.84	80.0%		0.0%		0.0%	2.30
Gisela	0.46	53.8%	0.40	46.2%		0.0%		0.0%	0.86
Green Valley		0.0%	1.44	100.0%		0.0%		0.0%	1.44
Pleasant Valley Ranger District	4.96	45.2%	1.71	15.6%	3.41	31.1%	0.90	8.2%	10.97
Buzzard Roost	0.49	18.4%	1.31	49.7%	0.41	15.7%	0.42	16.0%	2.64
Ellinwood/Diamond Butte	3.32	82.8%	0.40	9.9%	0.29	7.2%		0.0%	4.01
Marsh Creek	1.15	58.1%		0.0%	0.83	42.1%		0.0%	1.98
Soldier Camp		0.0%		0.0%	1.87	79.6%	0.48	20.2%	2.35

Table 41. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2023.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District		0.0%	0.54	25.0%		0.0%	1.62	75.0%	2.16
Skeleton Ridge		0.0%	0.54	33.3%		0.0%	1.08	66.7%	1.62
Skeleton Ridge/Cedar Bench		0.0%		0.0%		0.0%	0.54	100.0%	0.54
Payson Ranger District		0.0%		0.0%		0.0%	2.96	100.0%	2.96
Cedar Bench		0.0%		0.0%		0.0%	2.96	100.0%	2.96

Table 42. Critical habitat survey miles impacted by cattle on the Tonto National Forest in 2024.

	Absent		Light		Moderate		Significant		TOTAL
District/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Cave Creek Ranger District		0.0%	1.28	43.9%	1.63	56.2%		0.0%	2.91
Copper Creek		0.0%	1.28	43.9%	1.63	56.2%		0.0%	2.91
Globe Ranger District		0.0%		0.0%		0.0%	1.83	100.0%	1.83
Chrysotile		0.0%		0.0%		0.0%	1.83	100.0%	1.83
Payson Ranger District		0.0%	0.78	31.9%	0.76	30.8%	0.91	37.3%	2.45
Gisela		0.0%		0.0%	0.76	100.0%		0.0%	0.76
Green Valley		0.0%	0.78	46.0%		0.0%	0.91	53.7%	1.70
Pleasant Valley Ranger District	0.94	7.3%	1.22	9.6%	2.15	16.9%	8.44	66.2%	12.75
Catholic Peak		0.0%		0.0%		0.0%	0.79	100.0%	0.79
Crouch Mesa		0.0%		0.0%		0.0%	1.59	100.0%	1.59
Gentry Mountain		0.0%		0.0%	0.38	10.5%	3.23	89.3%	3.62
OW		0.0%	1.22	100.0%		0.0%		0.0%	1.22
Red Lake	0.94	16.9%		0.0%	1.77	32.0%	2.83	51.0%	5.54
Tonto Basin Ranger District	9.30	40.0%	5.65	24.3%	1.88	8.1%	6.42	27.6%	23.24
Seventy-Six		0.0%	0.25	8.6%		0.0%	2.62	91.5%	2.86
Tonto Basin	7.49	54.9%	3.71	27.2%		0.0%	2.45	17.9%	13.65
Dagger & Hicks/Pike Peak	1.81	26.8%	1.69	25.1%	1.88	28.0%	1.35	20.1%	6.73

Bureau of Land Management, Arizona State Office

Phoenix District

The Center began surveying critical habitat designations within the Agua Fria National Monument, of BLM's Phoenix District, in 2021. This National Monument includes five grazing allotments that were surveyed to assess critical habitat designations for Gila chub and yellow-billed cuckoo. Aggregate data concerning Agua Fria surveys in 2021-2024 are contained in Table 43; Tables 44-47 include data for each year of surveys.

Between 2021-2024, the average percent of Agua Fria National Monument critical habitat miles damaged by cattle impacts is 87% (range 71%-100%) (Tables 43-47). Despite seasonal restrictions on grazing within riparian zones of the Monument, which routinely go unenforced, there has been only one instance in four years of an allotment with less than 50% of critical habitat moderately to significantly impacted by cattle. Regardless of precipitation trends, critical habitat across the five surveyed allotments of Agua Fria National Monument is routinely degraded by damage from livestock. Critical habitat on the Box Bar allotment has yet to be less than 95% damaged by cattle in any survey year.

Table 43. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the BLM's Phoenix District, by allotment, from 2021-2024.

Unit/ Allotment	2021	2022	2023	2024
Agua Fria NM	100%	93%	71%	83%
2Y		100%	67%	66%
Box Bar		100%	96%	95%
E-Z Ranch		84%	52%	76%
Horseshoe	100%	90%	57%	79%
Sycamore		100%	45%	100%

Table 44. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2021.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	miles	percent	miles	percent	miles	percent	miles	percent	miles
Agua Fria NM		0.0%		0.0%	0.34	7.0%	4.53	93.0%	4.87
Horseshoe		0.0%		0.0%	0.34	7.0%	4.53	93.0%	4.87

Table 45. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2022.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Agua Fria NM	1.36	6.3%	0.11	0.5%	1.90	8.8%	18.32	84.5%	21.69
2Y		0.0%		0.0%	0.13	14.6%	0.77	85.3%	0.90
Box Bar		0.0%		0.0%	0.66	7.7%	7.93	92.2%	8.60
E-Z Ranch	0.92	14.0%	0.11	1.7%	0.71	11.0%	4.76	73.3%	6.50
Horseshoe	0.44	9.6%		0.0%		0.0%	4.13	90.3%	4.57
Sycamore		0.0%		0.0%	0.39	34.8%	0.73	65.0%	1.13

Table 46. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Agua Fria NM	0.32	1.2%	2.83	10.6%	4.69	17.5%	18.95	70.7%	26.80
2Y		0.0%		0.0%	0.29	33.3%	0.59	66.8%	0.88
Box Bar		0.0%		0.0%	0.45	4.3%	9.84	95.7%	10.29
E-Z Ranch	0.32	6.0%	0.42	7.8%	1.85	34.5%	2.78	51.7%	5.37
Horseshoe		0.0%	2.41	25.7%	1.62	17.3%	5.34	57.0%	9.37
Sycamore		0.0%		0.0%	0.48	54.4%	0.40	45.4%	0.88

Table 47. Critical habitat survey miles impacted by cattle in BLM's Phoenix District in 2024.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Agua Fria NM	0.41	1.5%	4.08	15.0%	5.05	18.6%	17.64	64.9%	27.19
2Y	0.14	15.6%	0.16	18.3%		0.0%	0.59	66.0%	0.89
Box Bar		0.0%	0.41	5.2%	1.30	16.6%	6.16	78.3%	7.87
E-Z Ranch	0.27	5.1%	1.01	18.9%	2.54	47.5%	1.52	28.5%	5.35
Horseshoe		0.0%	2.50	20.9%	1.20	10.1%	8.23	69.0%	11.93
Sycamore		0.0%		0.0%		0.0%	1.15	100.0%	1.15

Gila District

BLM's Gila District (Tables 48-54), subdivided into the Tucson and Safford Field Offices, contains critical habitat for a multitude of species including yellow-billed cuckoo, southwestern willow flycatcher, spikedace, loach minnow, razorback sucker, Chiricahua leopard frog, northern Mexican and narrow-headed garter snakes, and plants such as Arizona eryngo and Huachuca water umbel.

The Gila District manages two Riparian National Conservation Areas (RNCAs), including the San Pedro RNCA and the Gila Box RNCA, which Congress specifically designated

to protect the riparian values found there. Despite these congressional designations, these two RNCAs routinely show a high degree of significant cattle impacts in designated critical habitat. The entirety of the San Pedro RNCA was surveyed in 2023 and nearly every mile—both within grazing allotments and outside of them—showed moderate to significant impacts from cattle. The Gila Box RNCA, despite its National Conservation Area designation and year-round grazing restrictions in riparian zones, has averaged nearly 87% of riparian critical habitat miles moderately to significantly damaged by unauthorized cattle.

Another group of allotments, managed by the Tucson Field Office, occurs along the Gila River downstream of the Gila River/ San Pedro River confluence. These seven grazing allotments were surveyed for cattle impacts beginning in 2022, and each one had 100% of survey miles moderately to significantly degraded by cattle. Percentage of moderately to significantly impacted critical habitat was slightly improved in 2024 but still ranged from 45.7% to 100%.

Government Springs and Sleeping Beauty Mountain allotments occur adjacent to the Tonto Nation Forest. These two allotments had lower rates of cattle damage, likely owing to a lack of surface water in riparian zones and thus less concentration of cattle in these places.

Table 48. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the BLM's Gila District, by allotment, from 2021-2024.

Unit/ Allotment	2019	2020	2021	2022	2023	2024
San Pedro RNCA	14.3%	67.5%	64.9%	64.1%	97.5%	
Not in allotment	14.3%	67.5%	58.7%	69.5%	97.5%	
Babocomari			100.0%	0.0%		
Brunchow Hill			0.0%	0.0%		
Lucky Hills			100.0%	0.0%		
Three Brothers			100.0%	100.0%		
Gila Box RNCA			87.2%			86.2%
Bonita Creek			58.1%			48.7%
Bull Gap Community			100.0%			71.7%
Gila			100.0%			100.0%
Johnny Creek			100.0%			
Johnny Creek/Bonita Creek						100.0%
Morenci			100.0%			100.0%
Not in allotment						100.0%
Zorilla			100.0%			100.0%
Tucson Field Office				89.1%	67.2%	68.6%
A-Diamond				100.0%		66.4%
Government Springs				26.1%		
Horsetrack				100.0%		51.0%
Len & Cochran				100.0%		100.0%
Len & Teacup Ranch				100.0%		78.9%
Myers				100.0%		
Myers/Whitlow				100.0%		45.7%
Not in allotment					67.2%	
Sleeping Beauty Mtn				39.5%		

Table 49. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2019.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	6.87	36.9%	9.09	48.8%	2.67	14.3%		0.0%	18.63
Not in allotment	6.87	36.9%	9.09	48.8%	2.67	14.3%		0.0%	18.63

Table 50. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2020.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	2.38	21.4%	1.24	11.2%	0.21	1.9%	7.30	65.6%	11.13
Not in allotment	2.38	21.4%	1.24	11.2%	0.21	1.9%	7.30	65.6%	11.13

Table 51. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2021.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	2.61	13.7%	4.06	21.4%	1.36	7.2%	10.96	57.7%	18.99
Not in allotment	1.26	9.8%	4.06	31.6%	0.48	3.7%	7.07	55.0%	12.87
Babocomari		0.0%		0.0%		0.0%	1.08	100.0%	1.08
Brunchow Hill	1.35	100.0%		0.0%		0.0%		0.0%	1.35
Lucky Hills		0.0%		0.0%	0.89	25.8%	2.54	74.2%	3.43
Three Brothers		0.0%		0.0%		0.0%	0.26	100.0%	0.26
Gila Box RNCA	2.89	9.7%	0.93	3.1%	4.21	14.2%	21.70	73.0%	29.73
Bonita Creek	2.89	31.8%	0.93	10.2%	3.03	33.3%	2.25	24.8%	9.10
Bull Gap Community		0.0%		0.0%		0.0%	3.51	100.0%	3.51
Gila		0.0%		0.0%		0.0%	4.86	100.0%	4.86
Johnny Creek		0.0%		0.0%	1.18	34.7%	2.22	65.3%	3.40
Morenci		0.0%		0.0%		0.0%	7.62	100.0%	7.62
Zorilla		0.0%		0.0%		0.0%	1.23	100.0%	1.23

Table 52. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2022.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA	3.77	9.3%	10.81	26.6%	4.23	10.4%	21.84	53.7%	40.65
Not in allotment	3.77	10.7%	6.98	19.8%	4.23	12.0%	20.27	57.5%	35.25
Babocomari		0.0%	1.67	100.0%		0.0%		0.0%	1.67
Brunchow Hill		0.0%	0.13	100.0%		0.0%		0.0%	0.13
Lucky Hills		0.0%	2.03	100.0%		0.0%		0.0%	2.03
Three Brothers		0.0%		0.0%		0.0%	1.57	100.0%	1.57
Tucson Field Office	2.19	7.3%	1.07	3.6%	2.39	8.0%	24.26	81.1%	29.91
A-Diamond		0.0%		0.0%	0.47	9.3%	4.63	90.7%	5.10
Government Springs	1.98	61.9%	0.39	12.1%	0.74	23.0%	0.10	3.1%	3.20
Horsetrack		0.0%		0.0%	1.18	25.4%	3.44	74.6%	4.62
Len & Cochran		0.0%		0.0%		0.0%	4.07	100.0%	4.07
Len & Teacup Ranch		0.0%		0.0%		0.0%	5.22	100.0%	5.22
Myers		0.0%		0.0%		0.0%	2.01	100.0%	2.01
Myers/Whitlow		0.0%		0.0%		0.0%	4.20	100.0%	4.20
Sleeping Beauty Mtn	0.21	14.4%	0.68	46.1%		0.0%	0.58	39.5%	1.47

Table 53. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
San Pedro RNCA		0.0%	1.06	2.5%	1.82	4.3%	39.06	93.1%	41.94
Not in allotment		0.0%	1.06	2.5%	1.82	4.3%	39.06	93.1%	41.94
Tucson Field Office		0.0%	0.83	32.8%	0.10	3.9%	1.60	63.3%	2.52
Not in allotment		0.0%	0.83	32.8%	0.10	3.9%	1.60	63.3%	2.52

Table 54. Critical habitat survey miles impacted by cattle in BLM's Gila District in 2024.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Gila Box RNCA	3.93	13.8%		0.0%	0.97	3.4%	23.62	82.8%	28.52
Bonita Creek	2.49	51.3%		0.0%	0.63	12.9%	1.74	35.8%	4.86
Bull Gap Community	1.44	28.2%		0.0%		0.0%	3.66	71.7%	5.10
Gila		0.0%		0.0%		0.0%	4.22	100.0%	4.22
Johnny Creek/Bonita Creek		0.0%		0.0%		0.0%	3.00	100.0%	3.00
Morenci		0.0%		0.0%	0.34	4.7%	6.97	95.2%	7.32
Not in allotment		0.0%		0.0%		0.0%	2.84	100.0%	2.84
Zorilla		0.0%		0.0%		0.0%	1.20	100.0%	1.20
Tucson Field Office		0.0%	5.59	31.4%	0.84	4.7%	11.38	63.9%	17.80
A-Diamond		0.0%	2.16	33.6%		0.0%	4.26	66.4%	6.42
Horsetrack		0.0%	0.52	48.8%		0.0%	0.55	51.0%	1.07
Len & Cochran		0.0%		0.0%	0.32	12.4%	2.25	87.6%	2.57
Len & Teacup Ranch		0.0%	0.82	21.1%		0.0%	3.09	78.9%	3.91
Myers/Whitlow		0.0%	2.08	54.3%	0.52	13.6%	1.23	32.1%	3.84

Hassayampa District

Beginning in 2023, the Center began our assessments of designated critical habitat within the Big Sandy River watershed (Tables 55-57). Here, grazing allotments are managed by the BLM Kingman Field Office and contain critical habitat designations for southwestern willow flycatcher, yellow-billed cuckoo, and northern Mexican garter snake. In most cases, BLM management documents require important riparian ecosystems to be protected from cattle through exclosures, seasonal limitations, and closed allotments. However, Center surveys revealed that none of these measures were being enforced on the ground and that cattle impacts were ubiquitous and significant throughout the watershed.

In 2023, percent of survey miles with moderate to significant cattle impacts averaged 91% (range 61%-100%) in allotments under Kingman Field Office management (Table 56). Five of the seven allotments surveyed exhibited 100% of riparian survey miles moderately to significantly damaged by cattle. Although only five allotments were subsequently resurveyed in 2024, high rates of cattle impacts remained (Table 57), indicating a sustained problem of cattle-damaged critical habitat in this region of Arizona, including several locations off-limits to cattle either permanently or seasonally. The only allotment that showed improvement was Planet allotment, going from 61% to 13% moderately to significantly impacted by livestock.

Table 55. Percent of critical habitat survey miles moderately to significantly impacted by cattle on the BLM's Hassayampa District, by allotment, from 2023-2024.

Unit/ Allotment	2023	2024
Kingman Field Office	91%	75%
Artillery Range	100%	100%
Chino Springs	100%	
Greenwood Community	100%	100%
Greenwood Peak Community	100%	100%
Palmerita	100%	
Planet	61%	13%
Primrose	79%	81%

Table 56. Critical habitat survey miles impacted by cattle in BLM's Hassayampa District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Kingman Field Office		0.0%	1.98	8.6%	4.62	20.1%	16.44	71.4%	23.03
Artillery Range		0.0%		0.0%	1.12	68.6%	0.52	31.5%	1.64
Chino Springs		0.0%		0.0%		0.0%	3.60	100.0%	3.60
Greenwood Community		0.0%		0.0%		0.0%	1.47	100.0%	1.47
Greenwood Peak Community		0.0%		0.0%		0.0%	3.83	100.0%	3.83
Palmerita		0.0%		0.0%		0.0%	5.68	100.0%	5.68
Planet		0.0%	1.20	38.4%	1.91	61.5%		0.0%	3.11
Primrose		0.0%	0.78	21.1%	1.58	42.8%	1.33	36.0%	3.70

Table 57. Critical habitat survey miles impacted by cattle in BLM's Hassayampa District in 2024.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Kingman Field Office		0.0%	3.63	25.2%	4.50	31.2%	6.30	43.6%	14.44
Artillery Range		0.0%		0.0%	2.32	78.6%	0.63	21.5%	2.95
Greenwood Community		0.0%		0.0%		0.0%	2.27	100.0%	2.27
Greenwood Peak Community		0.0%		0.0%	1.70	58.5%	1.21	41.5%	2.91
Planet		0.0%	3.12	86.7%	0.48	13.3%		0.0%	3.60
Primrose		0.0%	0.51	18.9%		0.0%	2.19	81.1%	2.70

Bureau of Land Management, Utah State Office

Paria River District

In 2023, the Center expanded critical habitat surveys into the BLM's Utah State Office to assess southwestern willow flycatcher riparian designations on Grand Staircase-Escalante National Monument. While flycatcher designations occur specifically on the Cottonwood allotment, nearby allotments also host designated critical habitat and Primary Activity Centers (PAC's) for Mexican spotted owls. Of the nearly 19 miles of riparian habitat surveyed on the Cottonwood allotment, 83% was found to have moderate to significant cattle impacts (Table 58). Overall, 87% of the surveyed riparian miles across the area showed moderate to significant impacts, underscoring the need for a reevaluation and expansion of survey efforts in Grand Staircase-Escalante National Monument.

Table 58. Percent of survey miles moderately to significantly impacted by cattle on the BLM's Paria River District, by allotment, in 2023.

Unit/ Allotment	2023
Grand Staircase-Escalante NM	87%
Cottonwood	83%
Lower Hackberry	100%
Mollies Nipple	95%

Table 59. Critical habitat survey miles impacted by cattle in BLM's Paria River District in 2023.

	Absent		Light		Moderate		Significant		TOTAL
Unit/ Allotment	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**	**percent**	**miles**
Grand Staircase-Escalante NM	0.51	1.8%	3.20	11.1%	9.17	31.9%	15.88	55.2%	28.76
Cottonwood	0.51	2.7%	2.79	14.8%	5.71	30.2%	9.90	52.3%	18.92
Lower Hackberry		0.0%		0.0%	1.60	89.6%	0.19	10.7%	1.79
Mollies Nipple		0.0%	0.40	5.0%	1.86	23.0%	5.79	71.9%	8.05

Discussion

A multitude of Southwestern native species associated with riparian ecosystems, cienegas and other wetlands are threatened, endangered, or otherwise imperiled due to habitat loss, degradation, and ecosystem alteration.[29]

Results from the Center's field surveys from 2017-2024 show widespread, region-wide damage from livestock grazing to aquatic and riparian critical habitat for threatened and endangered species on federally managed public lands in Arizona, New Mexico and Utah. In total, we have documented moderate to significant cattle impacts on 62% of the total 2,435 miles surveyed across the region.

Based on our critical habitat survey results and the unwillingness of federal land managers and livestock permit-holders to prevent continued degradation of riparian habitat on the majority of critical habitat designations surveyed, and based on the absence of management plans or conservation agreements that meaningfully conserve and prevent adverse modification to the physical and biological features that endangered species depend upon, the Center recommends and insists that agencies effectively exclude livestock from designated critical habitat in Arizona, New Mexico and Utah.

Because of the vital importance of intact riparian areas to sustaining and recovering ESA-listed species, and the undeniable link between livestock grazing and damaged riparian areas, agencies must determine whether grazing is an appropriate and suitable use of riparian public lands. To undertake this assessment, federal agencies must consider the relative value that ungrazed, recovering riparian areas provide to wildlife (especially special status species), water quality and hydrological processes against the value of riparian systems degraded and lost due to public lands livestock production. Livestock grazing is an inappropriate and unsuitable use in areas where wildlife habitat of elevated worth and importance has been or has the potential to be damaged by livestock use. Livestock grazing is also inappropriate and unsuitable when it would prevent timely recovery of important and valuable keystone ecosystems or when it disrupts the functionality of essential riparian areas, compromising their ability to support imperiled native species.

Ecological conditions on Western public lands have worsened recently,[30] mainly due to reduced productivity caused by livestock production in conjunction with a changing climate and

[29] Johnson, A.S., 1989. The thin green line: riparian corridors and endangered species in Arizona and New Mexico. *In defense of wildlife: preserving communities and corridors. Defenders of Wildlife, Washington, DC*, pp.35-46.

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

an historically unprecedented 'megadrought'.[31,32] Using public lands for livestock production is known to exacerbate the effects of climate change.[33]

FWS recognizes the escalating climate problem but has failed to take meaningful action to mitigate it. Despite dire climate projections forecasted for the southwestern states, the FS, BLM, and FWS continue to authorize status quo livestock grazing on federal public lands with no practical or meaningful revisions to protect riparian ecosystems or the imperiled native species whose future survival depends on them.

Livestock exclusion is the best way to mitigate climate change impacts and aridification, as removal of cattle grazing has been correlated with dramatic increases in native riparian vegetation.[34,35,36,37] Only by eliminating livestock impacts will native riparian ecosystems survive and recover in this historic Anthropocene era defined by record heat and drought. While the effects of climate change are difficult to control, riparian habitat on public lands in the Southwest can be dramatically improved simply by excluding livestock from these areas.

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[32] Williams, A. P., Cook, B. I., & Smerdon, J. E. (2022). Rapid intensification of the emerging southwestern North American megadrought in 2020–2021. Nature Climate Change, 12, 232–234. https://doi.org/10.1038/s41558-022-01290-z

[33] Kauffman, J.B., Beschta, R.L., Lacy, P.M. *et al.* Livestock Use on Public Lands in the Western USA Exacerbates Climate Change: Implications for Climate Change Mitigation and Adaptation. *Environmental Management* **69**, 1137–1152 (2022). https://doi.org/10.1007/s00267-022-01633-8

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

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

Appendix A. Survey Methods Tables

Table A-1. Condition descriptors and severity score guidelines for the six cattle impact categories used in the rapid assessment surveys.

Category	Condition: 1	Condition: 2	Condition: 3	Condition: 4
GRAZING EVIDENCE ON GRASSES AND HERBACEOUS GROWTH	**LIMITED** Less than 1% of the grasses impacted.	**LIGHT** Few to some patches of grazed area or selective grazing in patches.	**MODERATE** Multiple grass patches grazed, more than 20% of grass impacted in patches.	**SEVERE/HEAVY** Multiple patches grazed, low grass heights less than 1 inch. More than 30% grazed in patches
BROWSE PRESSURE/WOODY Stems	**LIMITED** Less than 1% of woody stems impacted	**LIGHT** Browsing limited to multiyear stems	**MODERATE** Browse pressure on near channel woody recruitment	**HEAVY/SEVERE** Multiple green-line or near channel recruitment browsed
GROUND COVER DISTURBANCE/INTENSITY	**LIMITED** Limited to transient evidence of use.	**LOW** Isolated trailing and cow trails developing.	**MODERATE** Multiple trails and the presence of wallows and rutting areas. Some bare soils.	**SEVERE** Trails, plus wallows, rutting and compaction leading to denuded ground and larger areas of bare soils.
GROUND COVER DISTURBANCE/EXTENT	**LIMITED** Few examples of disturbance.	**SCATTERED** Trails or disturbances in more than one location in segment.	**MODERATE** Trails meander through entire segment and there are multiple moderate level disturbances (see above).	**PERVASIVE** Multiple locations of disturbance and multiple types of disturbances, including severe moderate and low (see above).
STREAMBANK DEGRADATION/INTENSITY	**LIMITED** No visible signs, but other cattle impact on both sides of river that evidence crossing.	**LOW** Trails leading to streambank and water's edge.	**MODERATE** Trailing and trails creating unstable banks, some chiseling, or in low relief banks-muddy compaction	**SEVERE** Trailing leading to shearing and removal of a portion of the streambank leaving vertical surfaces.
STREAMBANK DEGRADATION/EXTENT	**LIMITED** Isolated example of streambank entry.	**SCATTERED** Bank degradation of any intensity in more than one location.	**MODERATE** Multiple examples of low and moderate bank degradation (see above).	**PERVASIVE** Multiple examples of low, moderate, and severe degradation (see above).

Table A-2. Weighting table for overall impact levels of stream reach segments based on condition scores (0-4) from the six categories of cattle impacts.

ABSENT	LIGHT IMPACT	MODERATE IMPACT	SIGNIFICANT IMPACT
ALL ZEROS	ANY COMBINATION OF ONE'S & TWOS & ZEROS	AT LEAST (5) TWOS WITH ANY OTHER NUMBER	ANY TIME THERE ARE (3) THREES WITH ANY OTHER COMBINATION OF NUMBERS
		ANY COMBINATION OF TWOS, THREES, AND ONE'S	ANY COMBINATION OF NUMBERS WITH AT LEAST (1) FOUR
	(UNLESS (5) TWOS-` then moderate)	*(UNLESS (3) THREES- then significant)*	