Rapid Assessment of Cattle Impacts in Riparian Critical Habitat on the Gila National Forest in 2023

Cattle inside critical habitat exclosures on the San Francisco River Deep Canyon Allotment, April, 2023

Prepared by the Center for Biological Diversity
September, 2023

CENTER for BIOLOGICAL DIVERSITY

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BACKGROUND

Federal public lands in the Southwest harbor incredible biological diversity, including many threatened or endangered species dependent on healthy riparian habitat. Preservation of these species and protection of these federal lands is of significant public interest. Since our founding, the Center for Biological Diversity has led efforts to reform grazing on public lands, particularly as it relates to the health of critical habitat. One of our significant court challenges was a 1997 suit which argued that the Forest Service had failed to consider the effects of grazing on seven imperiled species including the Southwestern Willow Flycatcher (SWWF), the Mexican Spotted Owl, the Spikedace, and the Loach Minnow. In 1998, a settlement agreement emerged from this legal challenge, *Southwest Center for Biological Diversity v. U.S. Forest Service* (D. Ariz. CV-97-TUC-JMR), resulting in an order to remove cattle from hundreds of stream miles, including 23 allotments in the Gila National Forest (GNF).

The settlement commitments made by the Forest Service resulted in the placement of extensive exclosure fencing and agreements with permittees to remove cattle from these areas. Early assessment showed the rapid recovery of streamside herbaceous vegetation, cottonwood saplings in flood channels, willow recruitment along the river's edge and improved bank stability and integrity. This resulted in an on-going process of restoration in many miles of critical riparian habitat. Unfortunately, by 2015, much of the exclosure fencing was in disrepair or being disregarded, and both trespass and feral cattle began moving into critical habitat and significantly degrading water quality, creating miles of denuded soil, and suppressing woody regeneration across hundreds of riparian miles.

Subsequently, surveys were done on 27 GNF allotments in 2017, 9 allotments were spot checked in 2018, and 30 allotments were surveyed in 2019, including additional allotments that contained critical habitat (Table 1). Each of these surveys showed large percentages of moderate to significant impacts from grazing where there should be none. In 2017, 72.5% of the 105 miles surveyed, in 2018, 61% of the miles surveyed, and in 2019, 65% of the 134 miles surveyed, were moderately to significantly impacted. Following up on commitments made by the GNF to improve enforcement of exclosures, surveys were again done in 2021 when 117 miles were surveyed on 22 allotments and still, 96.7 miles, (83%) were found to be moderately to

significantly impacted by cattle. Trespass cattle were observed and documented on over half of the allotments surveyed.[1,2,3,4]

Table 1. SPECIES WITH FINAL CRITICAL HABITAT (FCH) IN THE GILA NATIONAL FOREST	
Chiricahua leopard frog	**FCH**
Gila chub	**FCH**
Loach minnow	**FCH**
Narrow-headed garter snake	**FCH**
Northern Mexican garter snake	**FCH**
Southwest willow flycatcher	**FCH**
Spikedace	**FCH**
Yellow-billed cuckoo	**FCH**

In 2022, a new legal settlement was put in place. That year, 98.7 miles on 27 allotments were surveyed. In five of the six districts, moderate to significant negative cattle impacts still persisted on **42.6% of the habitat, however, this was a substantial decrease in significant impacts when compared to 2021, which saw 70.7% of the miles surveyed as significantly impacted (Table 2 and 3).**

In 2023, to determine if actions taken by the Gila National Forest have resulted in continued improvements in the health of riparian critical habitat and to assess whether trespass cattle are still accessing exclosure areas containing critical habitat, a rapid assessment survey was completed for 29 active allotments and 3 allotments within the Gila River Wilderness stretch from Grapevine Campground to Turkey Creek, for a total of 148.6 miles. Surveyors also completed survey miles on 14 separate canyons along this stretch to check for cattle sign and impact. Surveys were also completed on Turkey Creek from the confluence with the Gila River to where it meets the Miller Springs Trail. Spot checks and surveys were also done several times through the Spring and Summer along this stretch of the Gila River and in the area of Miller Springs Tank. After each survey, if trespass cows were noted, CBD contacted the District Ranger immediately, facilitating rapid removal of the cattle.

The overall objective of these rapid assessments continues to be to determine if cattle are still present within riparian areas purportedly excluded from grazing on certain allotments and any areas containing critical habitat for the eight species listed above (Table 1.) in the GNF. The specific purpose is to document the extent, frequency and intensity of impacts attributed to cattle across hydroriparian, mesoriparian, and xeroriparian habitats. Further objectives are to quantitatively evaluate these impacts in six specific categories using a rapid assessment survey, document these data with georeferenced photographs, and map the overall impact levels of cattle throughout the allotment drainages (Figure 1.).

This report contains a summary table of results for all allotments surveyed (Table 2.), individual descriptions and maps for each allotment, and hyperlinked photos to specific cattle impacts observed. The survey also includes comparative data for 2023 for each allotment and for the percentage of significant impacts by district compared to 2022, and 2021. (Tables 3A, B, C). All the data is stored in a GIS database containing hundreds of additional photographs. A thorough explanation of survey methods is included at the end of the report along with the specific parameter measured and the weighting method used to determine impact levels. (Table 4. and Table 5.).

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[1] Rapid Assessment of Cattle Impacts in Riparian Exclosures on the Gila National Forest Rapid, Center for Biological Diversity, March, 2018.
[2] Rapid Assessment of Cattle Impacts in Riparian Exclosures and Critical Habitat on the Gila National Forest, Center for Biological Diversity, January, 2020.
[3] Rapid Assessment of Cattle Impacts in Riparian Critical Habitat on the Gila National Forest, August, 2021.
[4] Rapid Assessment of Cattle Impacts in Riparian Critical Habitat on the Gila National Forest, August, 2022

RESULTS SUMMARY

Between March, 2023 and June, 2023, twenty-nine (29) allotments and 148.6 miles of critical habitat in the GNF were surveyed for the presence of trespass cattle as well as the presence of cattle impacts both past and present**. Positively, the percentage of significant impact to critical habitat fell to 17% of the total, down from 42% in 2022, and 70% in 2021**. Notably, significant impacts decreased from 12% to 7% in the Glenwood District, and from 19%-10% in the Reserve District. While almost all active allotments throughout the GNF saw improvement, measured by the decrease in significantly impacted miles of riparian habitat, **the Frisco Allotment still contains over 90% significantly impacted habitat from past degradation, and the Laney, Harden Cienega, and Deep Canyon allotments each have more than a 1/3 of their riparian miles significantly impacted**. Also of concern is that **trespass cattle were located and reported in riparian critical habitat in 11 of the 29 allotments.** In allotments where cows are still accessing excluded habitat, soil compaction and denuded soils from grazing and trampling are still widespread, and some areas along the San Francisco have not recovered from the suppression of woody vegetation.

Significant improvements were found on the Wilderness Gila River stretch from Grapevine CG to Turkey Creek, including XSX, Brock and Redstone allotments, where feral cows were removed in 2021 and 2022. **Significantly impacted habitat from grazing dropped on the approximately 40 miles stretch from over 30 miles of significantly impacted stream mile in 2020 to 19 miles in 2021, and to 0 miles in 2023**, in the impact areas of grazing, browsing, bank degradation and new woody growth recruitment. However, **multiple surveys conducted over the course of the last six months indicated the continued presence of cows (and cows were seen)** along the river, several miles up and downstream of the Sapillo Creek confluence, in Turkey Creek, and at Miller Springs.

The Center for Biological Diversity supports and appreciates the immediate actions that were taken to remove cattle following real-time reports during this survey.

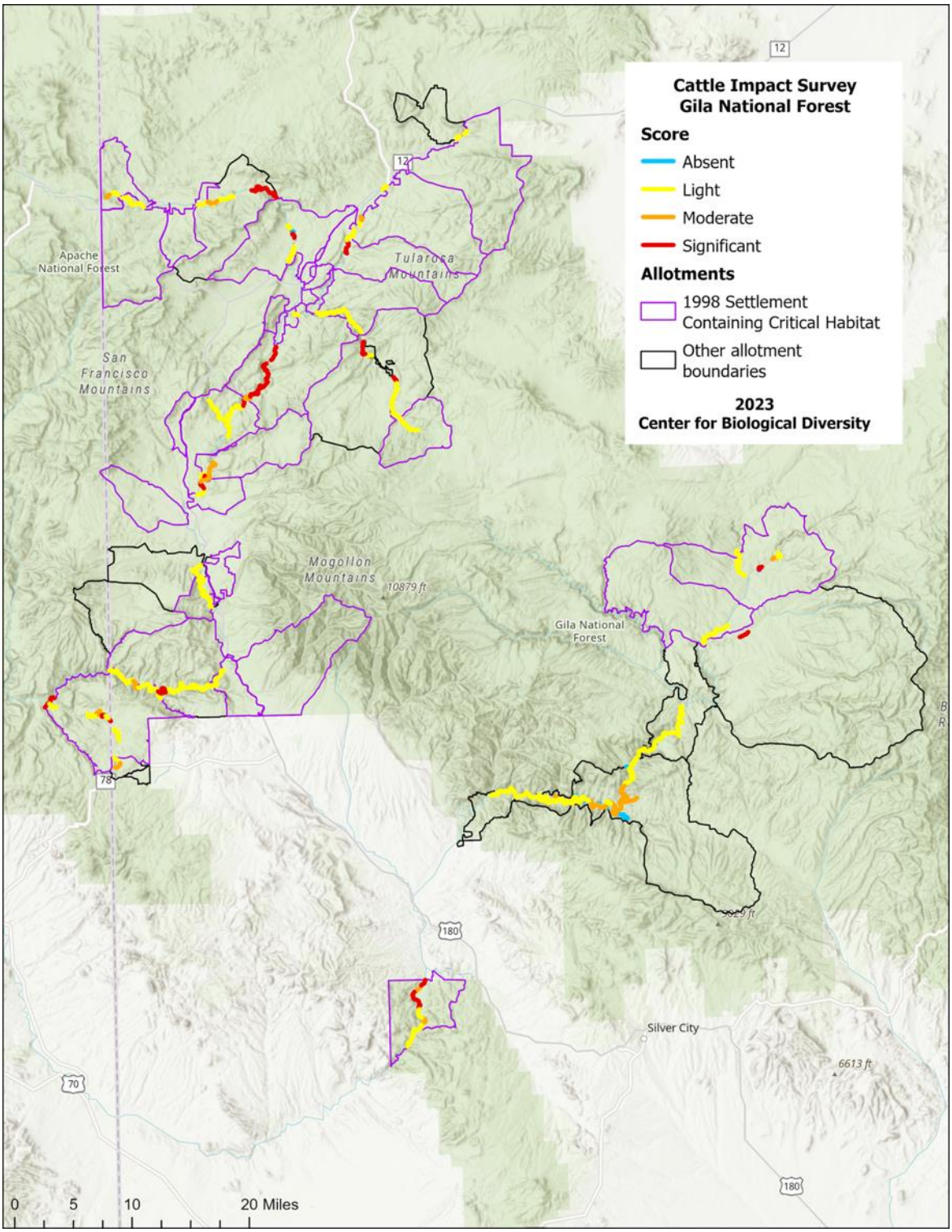


FIGURE 1. CATTLE IMPACTS WITHIN RIPARIAN AREAS WITH CRITICAL HABITAT IN GILA NATIONAL FOREST IN 2023

TABLE 2. GILA NATIONAL FOREST: MILES OF CATTLE IMPACTS IN INDIVIDUAL ALLOTMENTS IN 2023

District	Allotment	Drainage	Absent	Light	Moderate	Significant	Total
Black Range	Corduroy	Taylor Creek		1.5			1.5
Glenwood	Alma	San Francisco River		1.3		**.8**	2.1
	Citizen/Roberts Park	San Francisco River		2.3			2.3
	Devil's Park	San Francisco River			2.4	**.4**	2.8
	Dry Creek	San Francisco River		2.2			2.2
	Harden Cienega/Tennessee	Harden Cienega & San Francisco River		5.9	1.4	**3.0**	10.3
	Harve Gulch/Bighorn	San Francisco River		4.3			4.3
	Kelly	San Francisco River		7.5	.2	**.7**	8.4
	Pleasanton/Potholes	San Francisco River		6.0		**1.5**	7.5
	Not in Allotment	San Francisco River		5.7	1.0		6.7
Quemado	Laney	San Francisco River		3.2	.7	**3.8**	7.7
	Luna	San Francisco River		3.4	.4		3.8
Reserve	Alexander	Tularosa River		1.9	.5		2.4
	Cienega	San Francisco River	.4	2.6		**.5**	3.5
	Corner Mountain	Negrito Creek		2.9			2.9
	Deep Canyon	Tularosa River		.7		**1.1**	1.8
	Eagle Peak	Negrito Creek		6.3			6.3
	Frisco Plaza	San Francisco River & Tularosa		.1	.8	**6.5**	7.4
	Govina/West Sand Flat	Tularosa		4.5			4.5
	Lower Plaza	Tularosa River		.3			.3
	Negrito-Yeguas	Negrito Creek		3.1		**2.2**	5.3
Silver City	Gila River	Gila River		4.0	1.4	**2.7**	8.1
Wilderness	Diamond Bar	Diamond Creek				**.9**	**.9**
	Jordan Mesa	East Fork Gila		4.0			4.0
	Taylor Creek	Taylor & Beaver Creek		2.5	.6	**.5**	3.6
	Gila River Wilderness Run-XSX, Redstone, Brock allotments	Gila River	**2.6**	**25.3**	**10.4**		**38.3**
			Absent	**Light**	**Moderate**	**Significant**	**Total**
Totals of river miles surveyed in 2023			**3.0**	**101.2**	**19.8**	**24.6**	**148.6**
Totals of river miles surveyed in 2022			**.6**	**44.3**	**11.9**	**42.1**	**98.9**
Totals of river miles surveyed in 2021			**9.8**	**10.6**	**13.8**	**82.8**	**117.1**

*See methods section for specific grazing impact category descriptions and weighting table used to calculate overall level of impact ratings.

Table 3A. Survey Miles of Cattle Impacts on the Gila National Forest by District-2023

District	Miles/Absent	Miles/Light	Miles/Moderate	Miles/ Significant	Total Surveyed	% of critical habitat significantly impacted by cattle
Black Range		1.5			1.5	0
Glenwood		36.4	4.9	**5.9**	47.9	**12%**
Quemado		7.0	1.1	**3.8**	11.9	**32%**
Reserve	.4	19.0	1.3	**10.3**	31.5	**33%**
Silver City	2.5	23.0	11.6	**2.7**	40.1	**7%**
Wilderness	.1	14.3	.9	**1.4**	16.8	**8%**
Total	**3.0**	**101.2**	**19.8**	**24.6**	**148.6**	**17%**

Table 3B. Survey Miles of Cattle Impacts on the Gila National Forest by District-2022

District	Miles/Absent	Miles/Light	Miles/Moderate	Miles/ Significant	Total/Surveyed	% of critical habitat significantly impacted by cattle
Black Range		2.3			2.3	**0%**
Glenwood	.6	16.4	5.5	**12.5**	35.0	**35.7%**
Quemado		1.3	2.4	**9.3**	13.0	**71.5%**
Reserve		9.2	3.2	**19.3**	31.7	**60.8**
Silver City			.2		.2	**0%**
Wilderness		15.1	.6	**1.0**	16.7	**5.9%**
Total	**.6**	**44.3**	**11.9**	**42.1**	**98.9**	**42.6%**

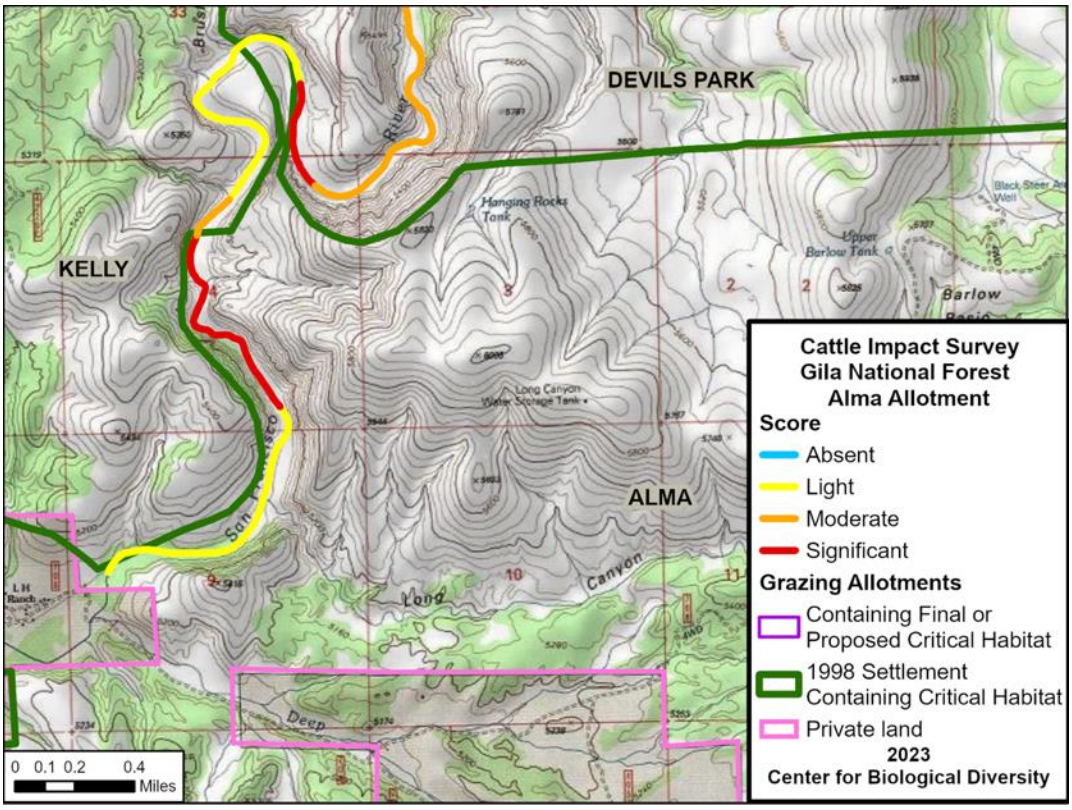
Table 3C. Survey Miles of Cattle Impacts on the Gila National Forest by District-2021

District	Miles/Absent	Miles/Light	Miles/Moderate	Miles/ Significant	Total/Surveyed	% of critical habitat significantly impacted by cattle
Black Range		.3		**.5**	.8	**62.5%**
Glenwood	5.7		1.4	**27.0**	35.7	**75.6%**
Quemado	3.9	2.6	2.2	**10.7**	19.4	**56.3**
Reserve	.2	4.1	3.6	**31.3**	39.2	**79.8%**
Silver City			0.8	**7.2**	8.0	**90%**
Wilderness		3.6	5.8	**6.2**	15.6	**39.7%**
Total	**9.8**	**10.6**	**13.8**	**82.9**	**117.1**	**70.7%**

ALLOTMENT SURVEY DESCRIPTION

District: **Glenwood**
Allotment: **Alma**
Critical Habitat **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace, Yellow-billed cuckoo**
Drainage: **San Francisco River**
Surveyed: **6/1/2023**
Cattle Seen: **No**

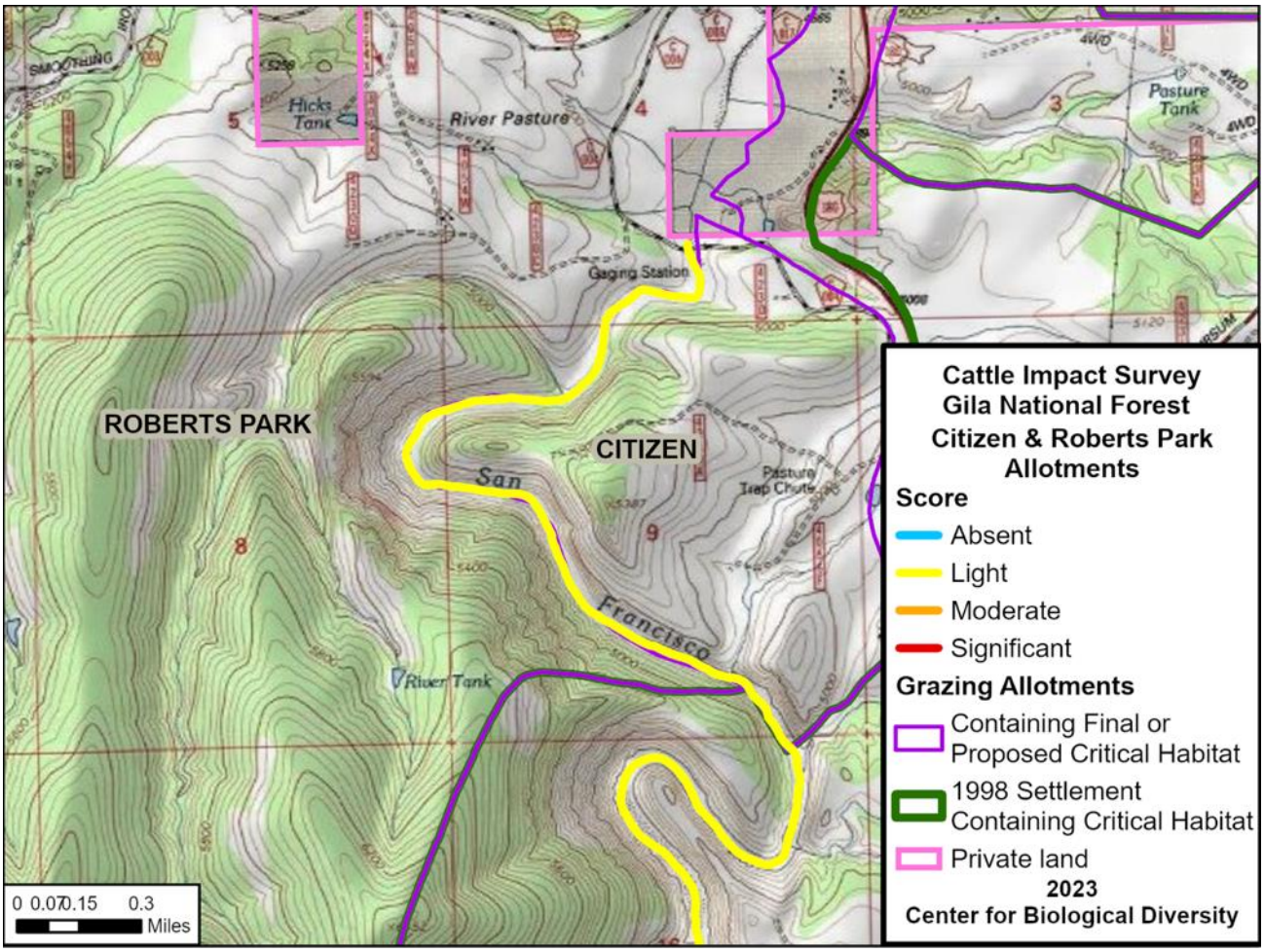
In 2023, no cows were observed on the Alma allotment for the first time since beginning these surveys in 2017. There were some fresh tracks, moderate ground disturbances near water haul outs and noticeable grazing impacts in the northern, upstream portion of the allotment near the boundary with the Kelly Allotment (photo). Continuing downstream, signs of grazing and impacts diminished, and woody regeneration was beginning along river banks.



Year	Absent	Light	Moderate	Significant	Total
2023		1.3		.8 miles	2.1 miles
2022				1.8 miles	1.8 miles

District: **Glenwood**
Allotment: **Citizen/Roberts Park**
Critical Habitat **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace, Yellow-billed cuckoo.**
Drainage: **San Francisco River**
Surveyed: **6/1/2023**
Cows Seen: **No**

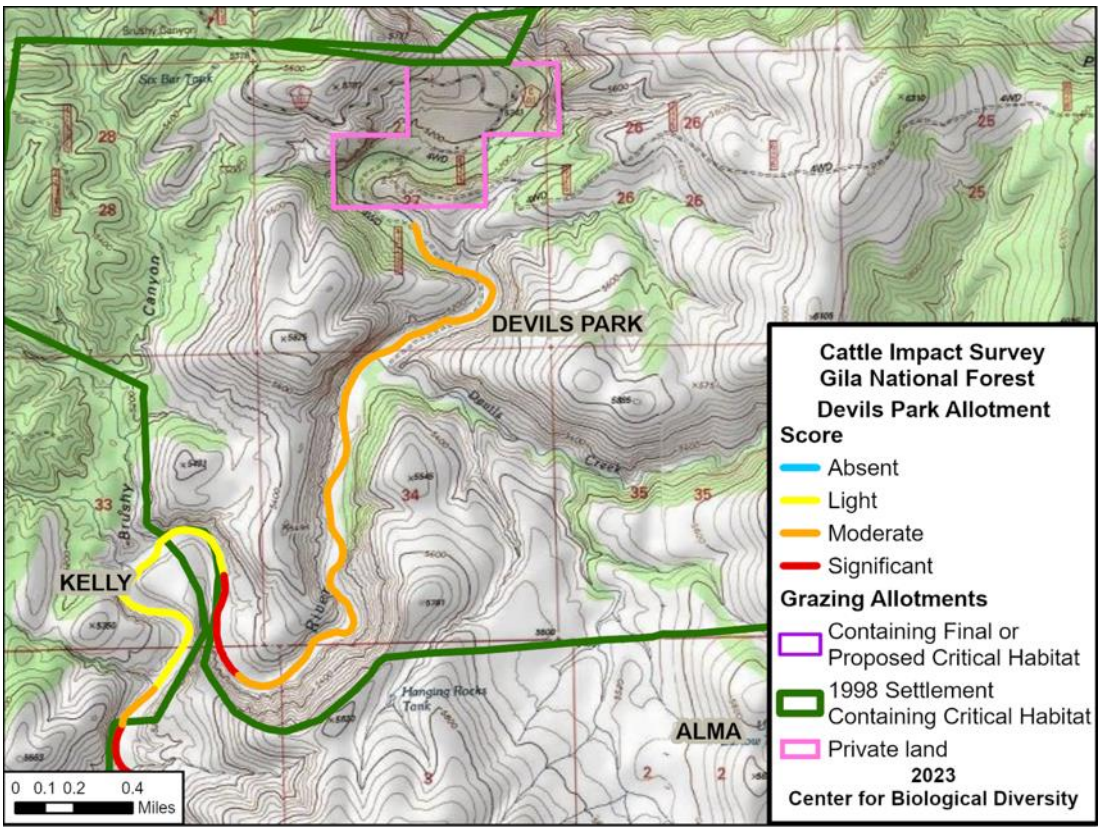
Due to extensive flooding in late 2022, many previously impacted shelves of land were eroded away. Cattle sign was limited to a few old trails in upland areas. Streambank damage was evident but unable to discern causes due to floods and washouts (photo). There is a moderate tamarisk infestation throughout the allotment.



Year	Absent	Light	Moderate	Significant	Total
2023		2.3 miles			2.3 miles
2022	2.4 miles				2.4miles

District: **Glenwood**
Allotment: **Devils Park**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Spikedace**
Drainage: **San Francisco River**
Surveyed: **4/12/2023**
Cattle Seen: **Yes**

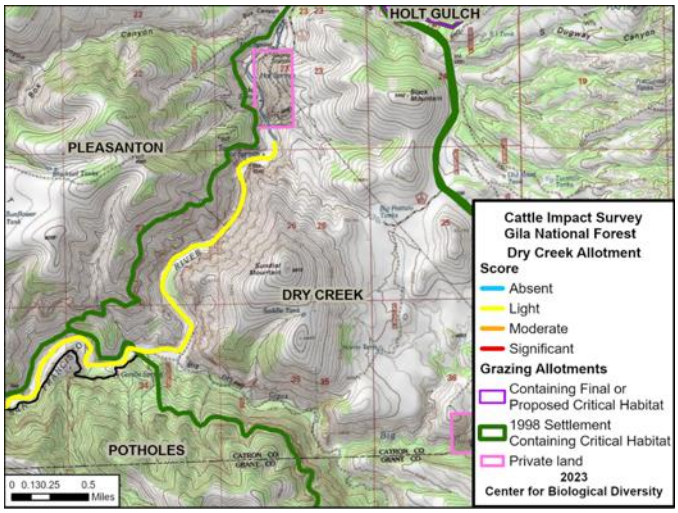
The Devil's Park Allotment follows the San Francisco River starting from the border of the Kelly Allotment to the west and continuing north until private property. The southern, downstream portion of the allotment had relatively fresh cow sign with feces, tracks and trailing. There were many old loafing areas under trees from years past. The river has become heavily braided making many grazing areas difficult to access. Near the Devil's Creek confluence, two bulls (AK brands) were encountered fighting, rutting, and creating significant ground disturbances (photo). Grazing impacts were also severe in this area (photo). In the Devils Creek drainage, impacts have decreased from previous years.



Year	Absent	Light	Moderate	Significant	Total
2023			2.4 miles	.4 miles	2.8 miles
2022		.4 miles	.8 miles	1.9 miles	3.1 miles

District: **Glenwood**
Allotment: **Dry creek**
Critical habitat: **Gila chub, Loach minnow, Southwestern willow flycatcher, Spikedace**
Drainage: **San Francisco River**
Surveyed: **5/25/2023**
Cattle Seen: **No**

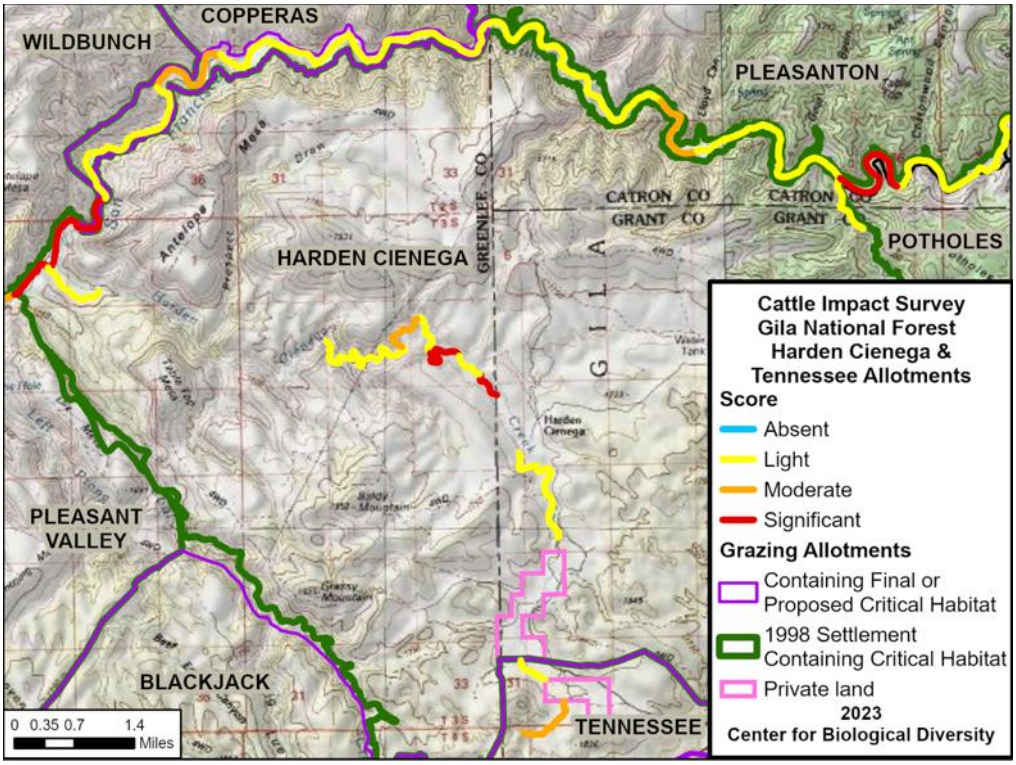
There was no recent sign of cattle within the allotment but some impacts remain, including multiple cow trails on upland benches. Flooding has washed out some of the two track along the river, but a large trail remains (photo). The area contained substantial infestations of tamarisk.



Year	Absent	Light	Moderate	Significant	Total
2023		2.2 miles			2.2 miles
2022		1.0 miles	1.6 miles	.4 miles	3.0 miles

District: **Glenwood**
Allotment: **Harden Cienega/Tennessee**
Critical habitat: **Gila chub, Loach minnow, Southwestern willow flycatcher, Spikedace**
Drainage: **San Francisco River, Harden Cienega Creek**
Surveyed: **4/10 & 18/2023**
Cattle Seen: **Yes**

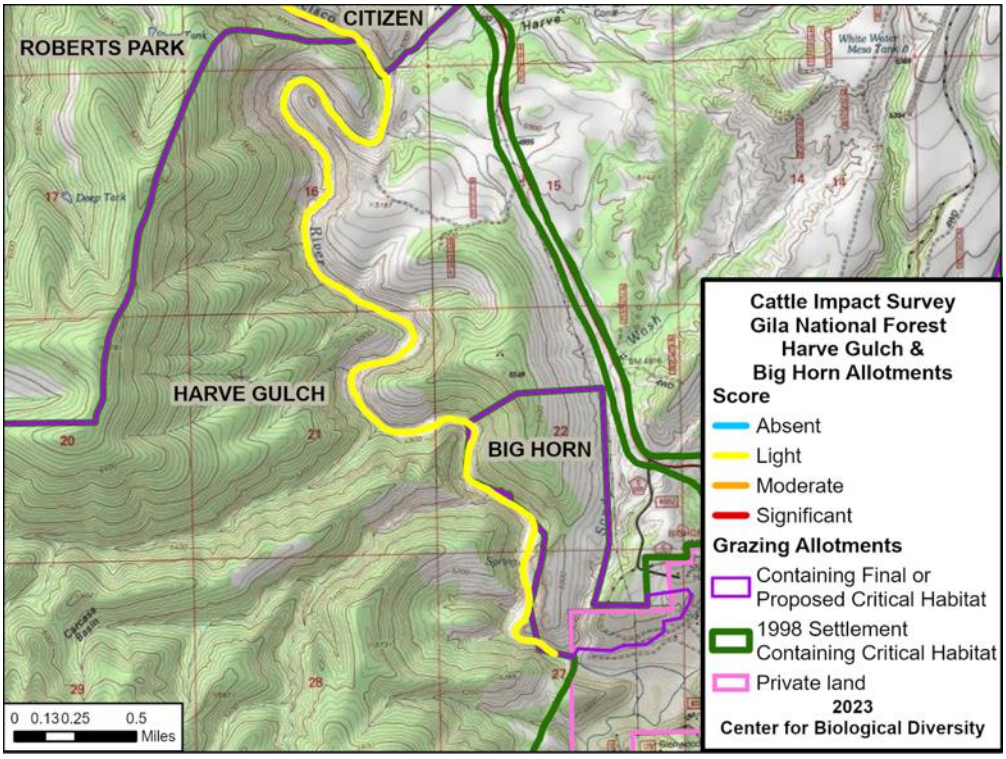
On the New Mexico side of the allotment along Harden Cienega creek, all cattle sign was old and there was no sign of recent grazing, although light impacts persist. On the Arizona side of the allotment, the creek is significantly impacted by grazing and degradation is severe and pervasive with bare soil patches (photo). Two cows and 1 calf were seen at the boundary (photo-cows). Impacts lighten moving downstream towards the narrow part of the canyon. Downstream of the slot, Harden Cienega meets the San Francisco River, where six cows were encountered at the confluence (photo-cows). Here, there are severe grazing impacts, trampled soils, and sheared and degraded banks along the San Francisco (photo). Tamarisk populations are thick along this section of the river.



Year	Absent	Light	Moderate	Significant	Total
2023		5.9 miles	1.4 miles	**3.0 miles**	10.3 miles
2022		4.5 miles	.3 miles	6.1 miles	10.9 miles

District: **Glenwood**
Allotment: **Harve Gulch/Big Horn**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace, Yellow-billed cuckoo**
Drainage: **San Francisco River**
Surveyed: **6/1/2023**
Cattle Seen: **No**

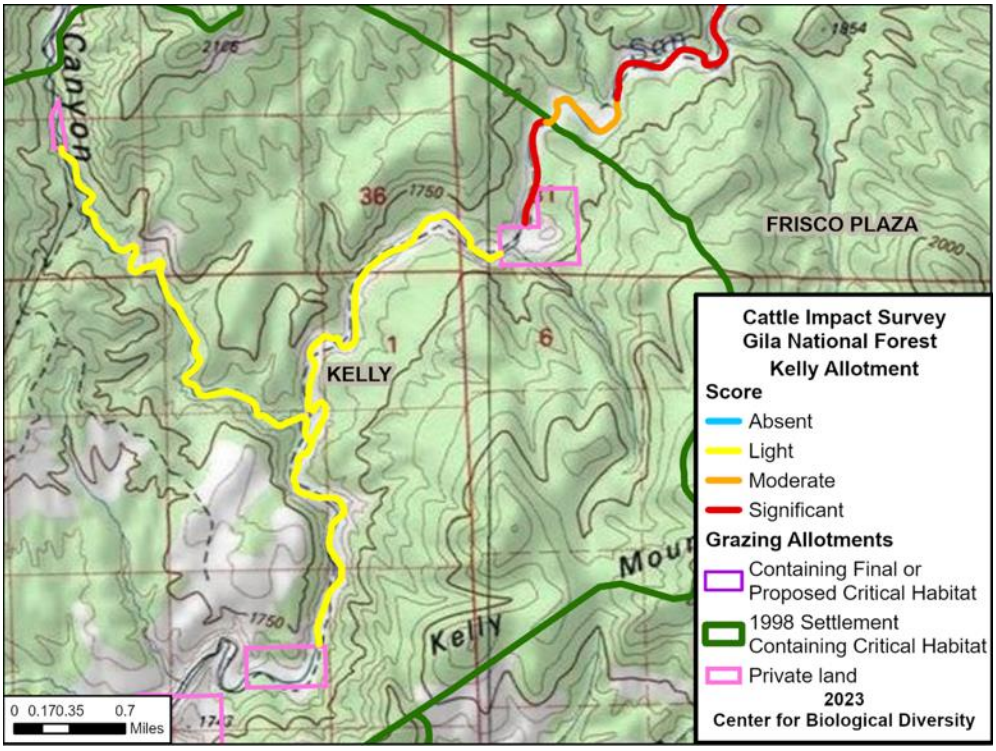
Flood waters during the 2022 monsoon season and melt waters in the Spring of 2023 inundated most areas except the highest shelves of land. This made it difficult to ascertain the cause of the severe bank erosion. Cattle sign and impact (old cow feces and trails) were limited to very old sign. Vegetation was tall and not grazed.



Year	Absent	Light	Moderate	Significant	Total
2023		4.3 miles			4.3 miles
2022	.6 miles	3.8 miles			4.4 miles

District: **Glenwood**
Allotment: **Kelly**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace, Yellow-billed cuckoo**
Drainage: **San Francisco River, Saliz Canyon**
Surveyed: **4/12/2023 6/1/2023**
Cattle Seen: **Yes**

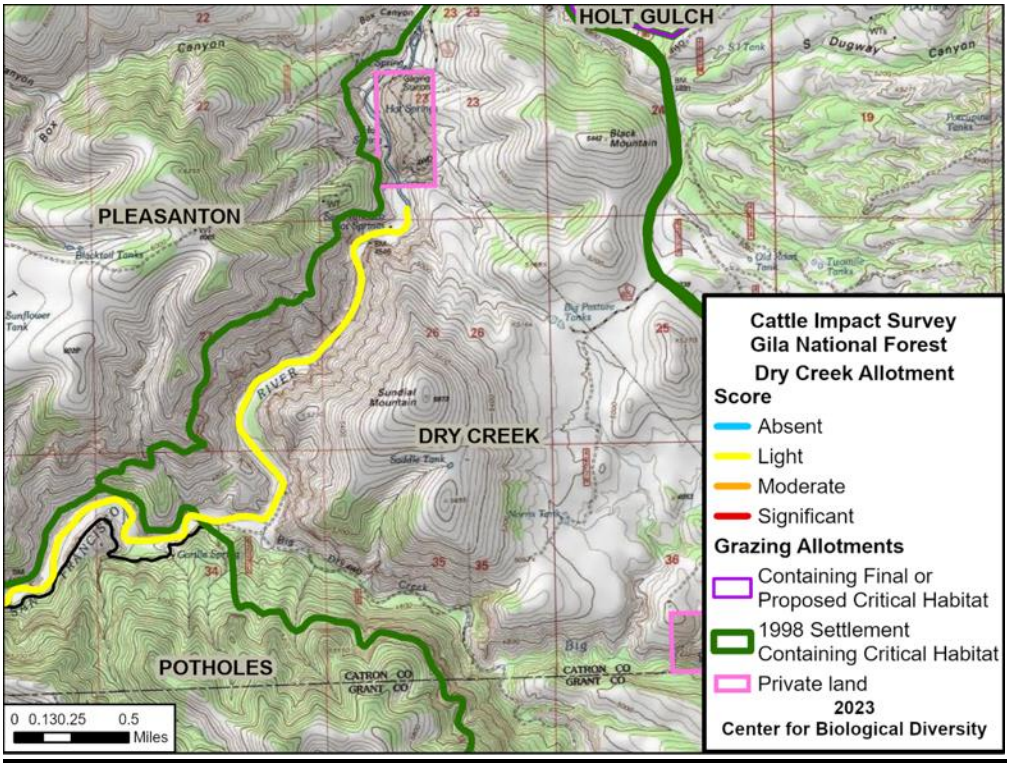
The river miles in the Kelly allotment between the Devils Park and Alma allotment boundaries were heavily scoured by floods in the Fall of 2022 and now contain very little forage. Cattle sign was limited to old cow pies and tracks. Historic grazing impacts still persist and are significant (photo). In this area, a large bull was encountered during the June survey. South of Saliz Canyon there was no recent sign or habitat damage. Along Saliz Creek the area was heavily covered in flood debris and no recent cattle sign was observed. Almost all river fences and gates were destroyed and performing no useful functions (photo). The Kelly allotment has seen considerable improvement since 2021, and fences should be restored to hasten recovery and keep out trespass cattle.



Year	Absent	Light	Moderate	Significant	Total
2023		7.5 miles	.2 miles	**.7 miles**	8.4 miles
2022		4.3 miles	2.9 miles	2.2 miles	9.4 miles

District: **Glenwood**
Allotment: **Pleasanton/Potholes**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace, Yellow-billed cuckoo**
Drainage: **San Francisco River,**
Surveyed: **5/25/2023**
Cattle Seen: **Yes**

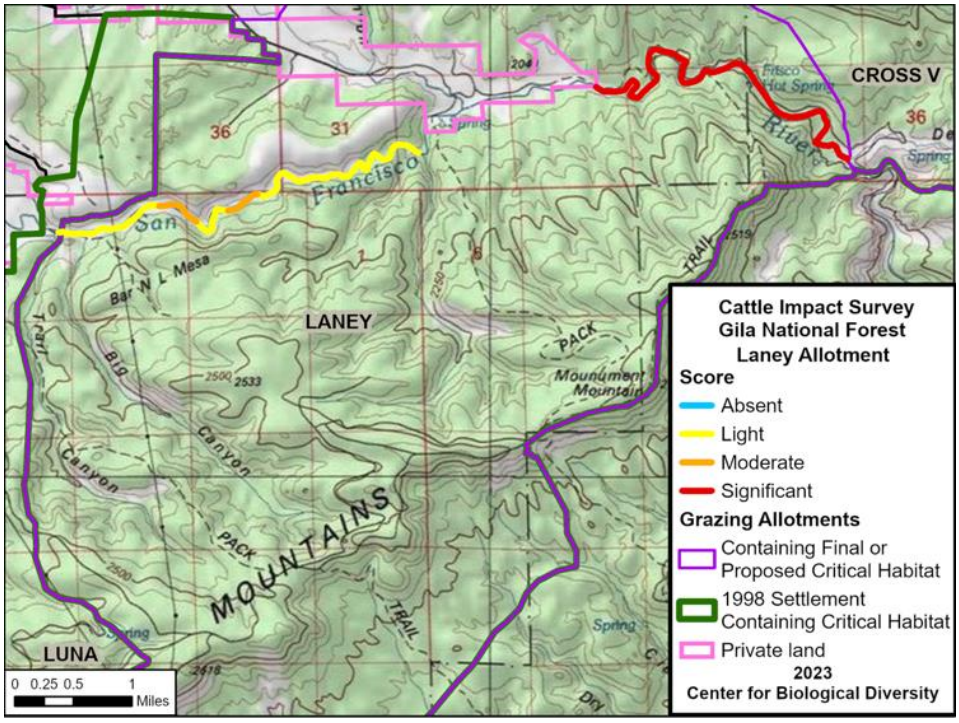
Beginning at the confluence with Mule Creek, an all-black cow with a calf was seen but no photo was obtained. The area near this sighting had the most impact and damage with multiple moderate level disturbances, including sheared river crossings (photo). Invasive species included substantial populations of ripgut brome, cheat grass and tamarisk.



Year	Absent	Light	Moderate	Significant	Total
2023		6.0 miles		1.5 miles	7.5 miles

District: **Quemado**
Allotment: **Laney**
Critical Habitat: **Narrow-headed garter snake, Southwestern willow flycatcher**
Drainage: **San Francisco River**
Surveyed: **3/28/2023 & 5/5/2023**
Cattle Seen: **Yes, Cows and Horses**

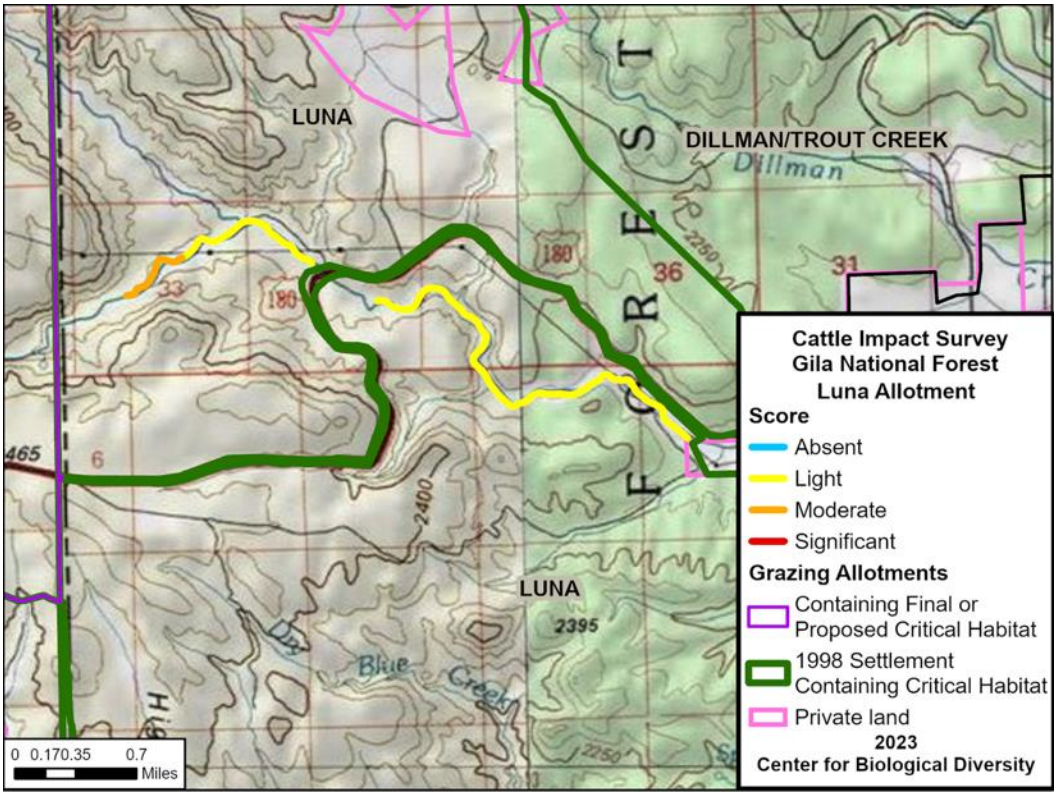
On the Eastern section of the allotment, adjacent to the town of Luna, there were multiple examples of downed exclosure fencing from flooding events. Cow pies were abundant but old and there were light impacts from past grazing. There was little to no woody recruitment.
On the Western side of the allotment, adjacent to the Laney Ranch, two groups of cows were seen with black and yellow ear tags. One group consisted of 2 cows with one small calf (photo-cows) (photo-cows) and the other was a group of one cow and two yearlings (photo-cows). When encountered, one group ran downstream towards the Box and through an open gate to the Northwest, and the other group ran upstream onto the Laney Ranch. Throughout this section, examples of grazing, browsing, trampling, and bank shearing are all severe and pervasive and current cattle incursions are preventing any streamside woody regeneration (photo). Grasses are grazed down to soil. There is no fencing from the Laney Ranch to the Box.



Year	Absent	Light	Moderate	Significant	Total
2023		3.2 miles	.7 miles	**3.8 miles**	7.7 miles
2022			.5 miles	**7.0miles**	7.5 miles

District: **Quemado**
Allotment: **Luna**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace**
Drainage: **San Francisco River**
Surveyed: **3/28/2023**
Cattle Seen: **No**

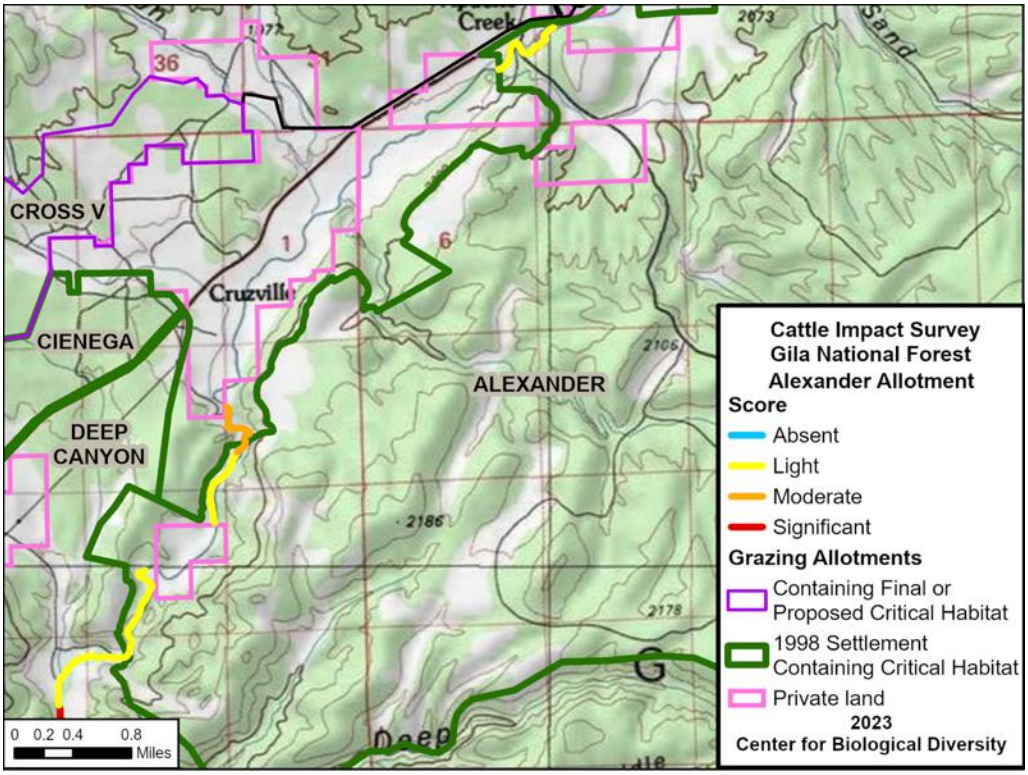
On the upstream section of the allotment there was widespread sign of use within the last year and impacts from past, heavy grazing, remain throughout. In general, however, the allotment had no significant impacts, contrary to conditions in all past surveys since 2017. This allotment should be re-surveyed during low water to see if cattle are being kept off critical habitat, since during the early date of the survey the flows were still very high and unlikely to support grazing opportunities.



Year	Absent	Light	Moderate	Significant	Total
2023		3.4	.4		3.8
2022		.5 miles	1.9 miles	**2.2 miles**	4.6 miles

District: **Reserve**
Allotment: **Alexander**
Critical Habitat: **Chiricahua leopard frog, Loach minnow, Narrow-headed garter snake**
Drainage: **Tularosa River**
Surveyed: **4/11 & 12/2023**
Cattle Seen: **Yes**

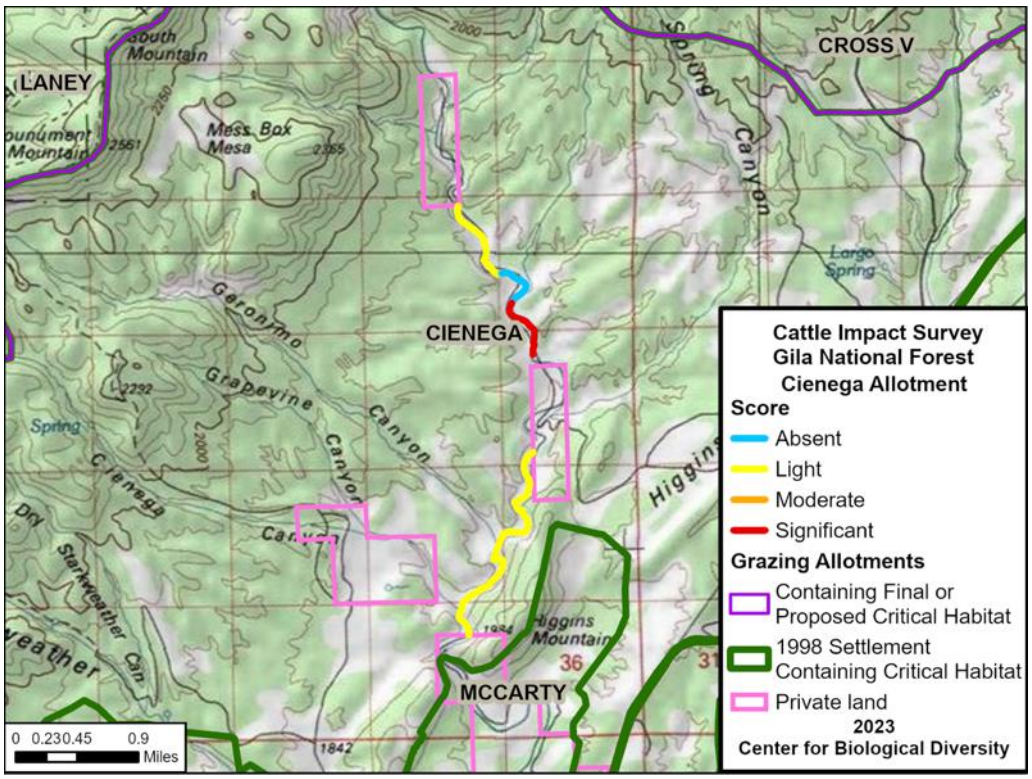
The farthest upstream end of the allotment is within the Apache Creek Campground. This area is well fenced and showing heavy use by elk and deer but none of the damage appears to be from cattle. Further downstream at the private property boundary, grazing and trailing impacts were moderate (photo) with one cow seen on the public property side of the fence (photo-cow). In this section, trees are being cut and an ATV trail has been created. Many river banks were eroded due to past flooding. Further downstream, grasses are abundant as the canyon narrows.



Year	Absent	Light	Moderate	Significant	Total
2023		1.9miles	.5 miles		2.4 miles
2022		1.4 miles		**.7 miles**	2.1 miles

District: **Reserve**
Allotment: **Cienega**
Critical Habitat: **Chiricahua leopard frog, Loach minnow, Narrow-headed garter snake**
Drainage: **San Francisco River**
Surveyed: **4/11/2023**
Cattle Seen: **Yes**

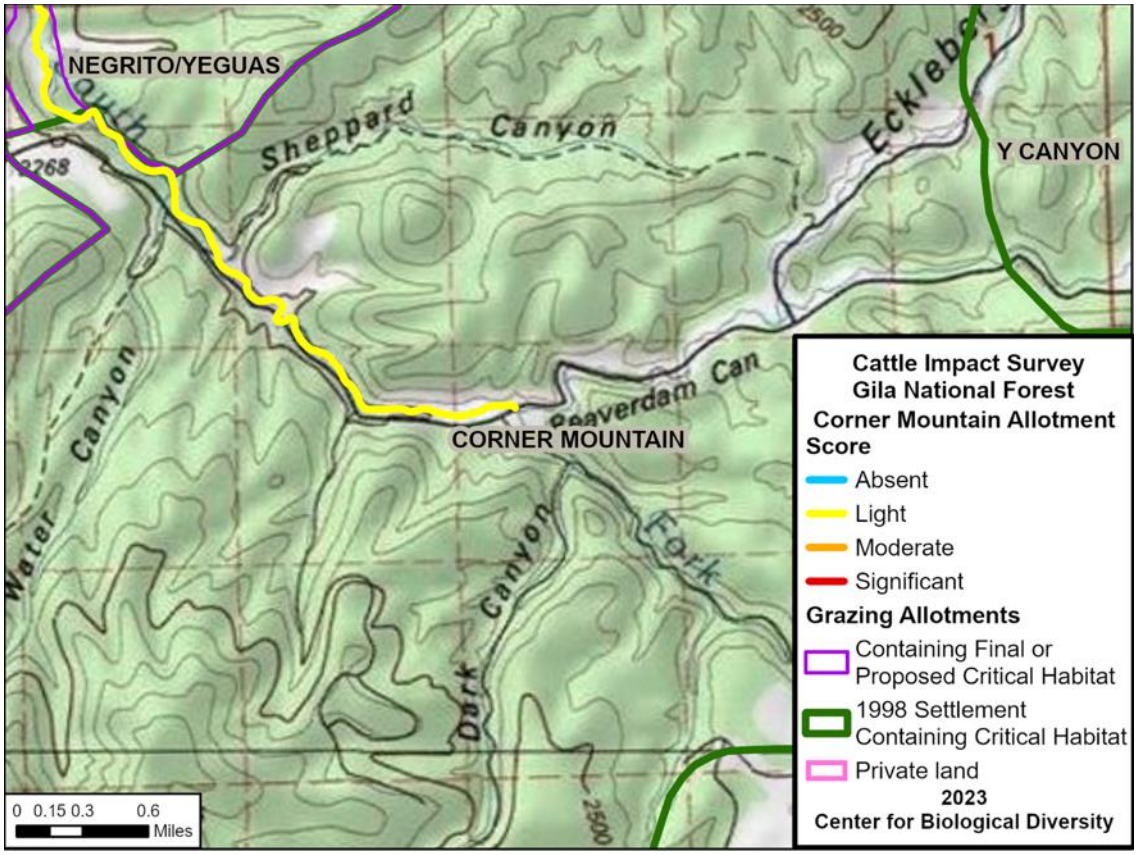
At the furthest upstream section of the allotment, grasses were not grazed and willow recruitment was present. Moving downstream towards the private property boundary, a total of 7 cows and 2 calves were seen in two distinct groups (photo-cows) (photo-cows). In this area, there are multiple and severe examples of chiseling and shearing of the riverbank and there is significant and widespread browsing and grazing occurring (photo). On the southern/downstream end of the allotment, impacts decrease and impacts are limited to historical grazing with no signs of recent cattle activity.



Year	Absent	Light	Moderate	Significant	Total
2023	.4 miles	2.6 miles		**.5 miles**	3.5 miles
2022		1.1 miles	1.2 miles	**1.2 miles**	3.4 miles

District: **Reserve**
Allotment: **Corner Mountain**
Critical Habitat: **Narrow-headed garter snake PCH**
Drainage: **Negrito Creek**
Surveyed: **3/29/2023**
Cows Seen: **No**

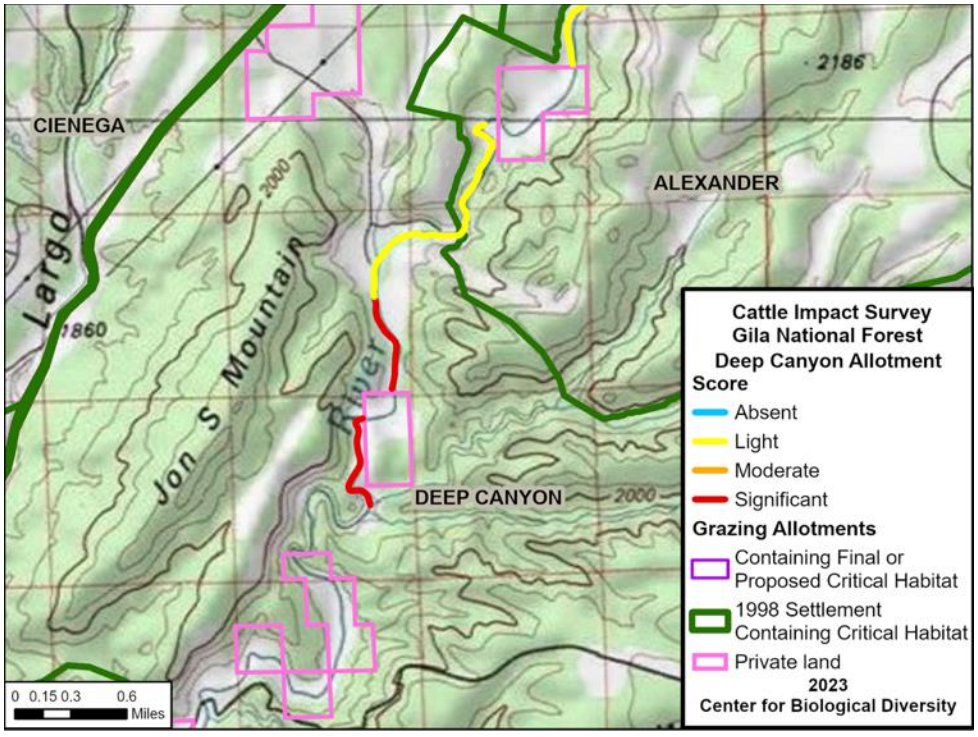
The entire allotment was heavily impacted by flooding in 2022, altering the shape of the creek bottom significantly (photo). All cattle sign was old and only limited grazing impacts from historical use were noted. Unlike previous years, no damage was seen in the sensitive springs area at the southern end of the allotment.



Year	Absent	Light	Moderate	Significant	Total
2023		2.9 miles			2.9 miles
2022		1.0 miles	1.1 miles	**.8 miles**	2.9 miles

District: **Reserve**
Allotment: **Deep Canyon**
Critical Habitat: **Chiricahua leopard frog, Loach minnow, Narrow-headed garter snake**
Drainage: **Tularosa River**
Surveyed: **4/13/2023**
Cattle Seen: **Yes-16 in total**

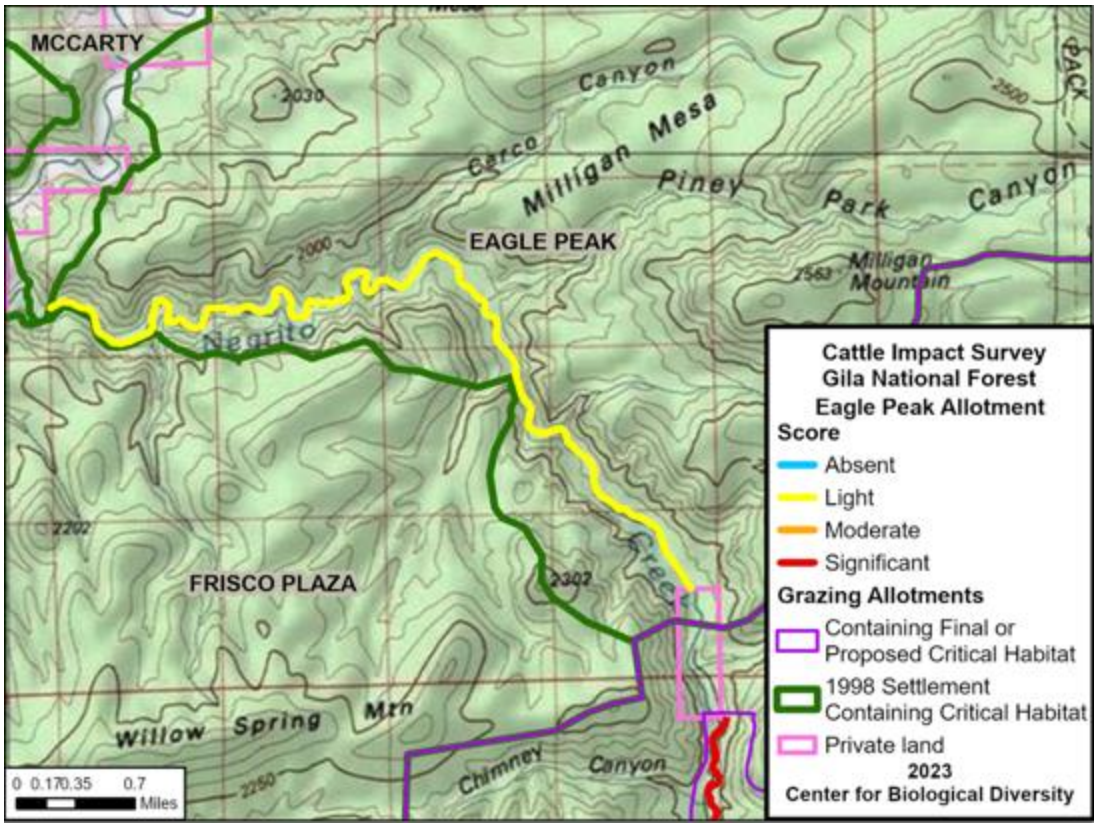
The upstream section of the allotment showed minimal sign of current cattle use. Approaching the private land boundary, all cattle impacts increased-trailing and trampling was evident, grazing was severe and there was no woody recruitment from browse pressure (photo). Nine cows and 1 calf were seen with orange tags near the private property boundary and the fence at the boundary was down (photo-cows). Impacts are severe at the boundary where overgrazing has created bare ground. Downstream of the private property, 6 more cows were seen (photo-cows). There are multiple loafing areas where cattle have denuded the vegetation completely. Banks that were overgrazed and without woody vegetation from years of overgrazing have collapsed under high water conditions



Year	Absent	Light	Moderate	Significant	Total
2023		.7		**1.1**	1.8
2022		.7 miles	.3 miles	**2.3 miles**	3.2 miles

District: **Reserve**
Allotment: **Eagle Peak**
Critical Habitat: **Loach minnow, Narrow-headed garter snake**
Drainage: **Negrito Creek**
Surveyed: **5/6/2023**
Cattle Seen: **No**

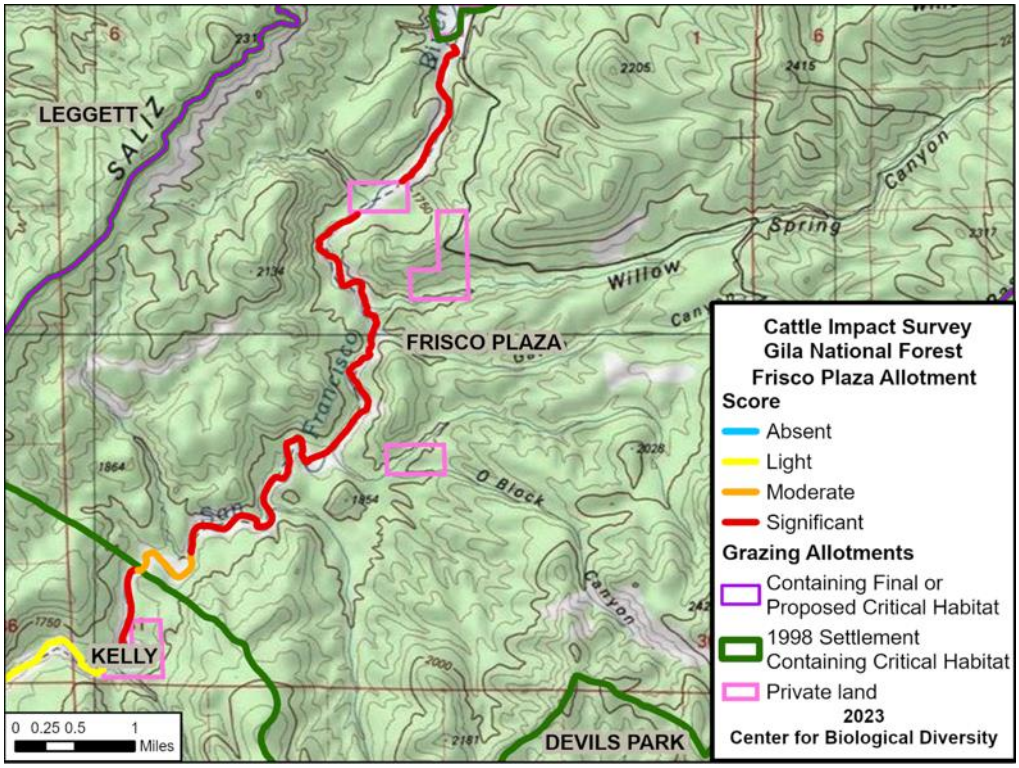
This allotment was heavily impacted by flooding. Flood debris was abundant and at times 15 to 20 feet high. On upper river benches, there were ample old cow pies and grazing impacts from past trespass cattle, but vegetation is recovering (photo). Most exclosure fences were damaged or gone- providing no protection for the creek side vegetation. No recent cattle sign was observed in the allotment. Grasses are currently thriving. There is significant improvement from previous surveys, but fences need repair to maintain restoration.



Year	Absent	Light	Moderate	Significant	Total
2023		6.3 miles			6.3 miles
2022		.6 miles	.7 miles	**4.8 miles**	6.1 miles

District: **Reserve**
Allotment: **Frisco Plaza**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Spikedace**
Drainage: **San Francisco River**
Surveyed: **6/2/2023**
Cattle Seen: **Yes**

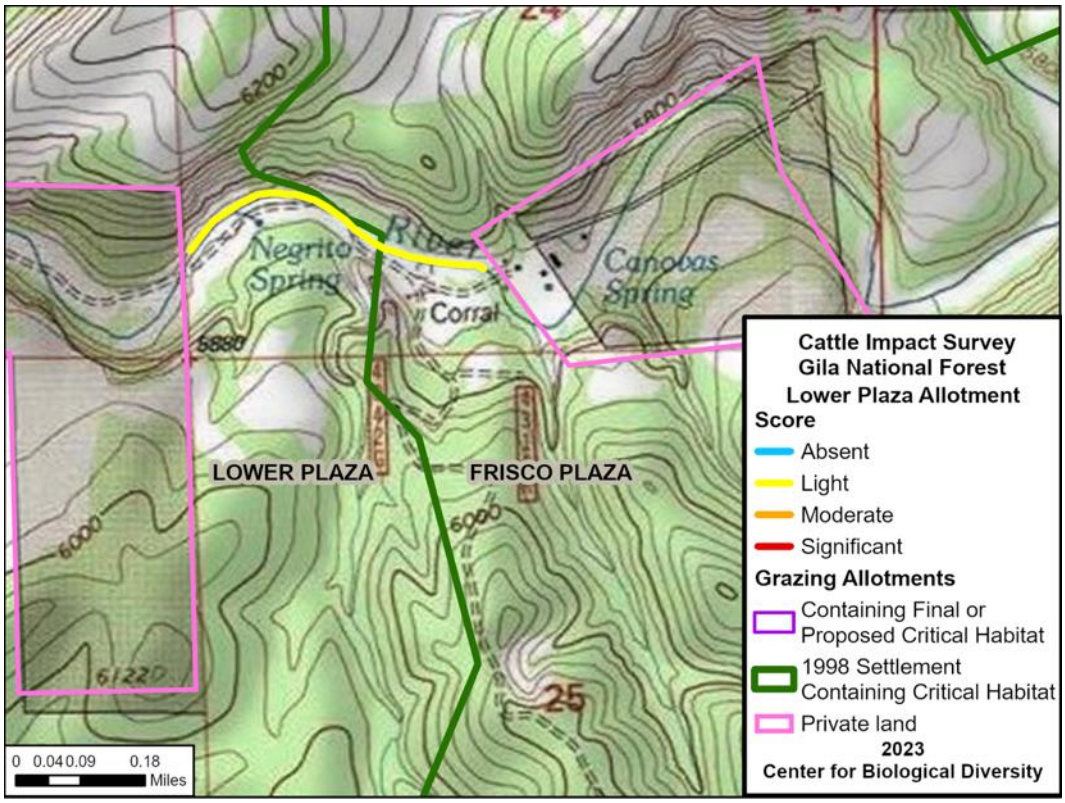
At the upstream end of the allotment, streamside critical habitat showed multiple and significant impacts from cattle (grazing, browsing, trampling). Large swaths of the river are overgrazed resulting in sand dunes and eroding riverbanks (photo) . One cow was seen in this upstream section. Near the riverside corrals another black cow with a white face was seen (photo-cows). Exclosure fence gates were open in many places allowing cows to roam freely-this is the same condition that was found in previous surveys. Cattle impacts remained moderate to the border with the Kelly allotment with widespread overgrazing impacts and limited riverside vegetation (photo). Elk sign is more frequent than cow sign at the downstream end of the allotment.



Year	Absent	Light	Moderate	Significant	Total
2023		.1 mile	**.8 miles**	6.5 miles	7.4 miles
2022		.7 miles		**6.8 miles**	7.5 miles

District: **Reserve**
Allotment: **Lower Plaza**
Critical Habitat: **Loach minnow FCH, Narrow-headed garter snake (PCH), Spikedace**
Drainage: **Tularosa**
Surveyed: **5/6/2023**
Cattle Seen: **No**

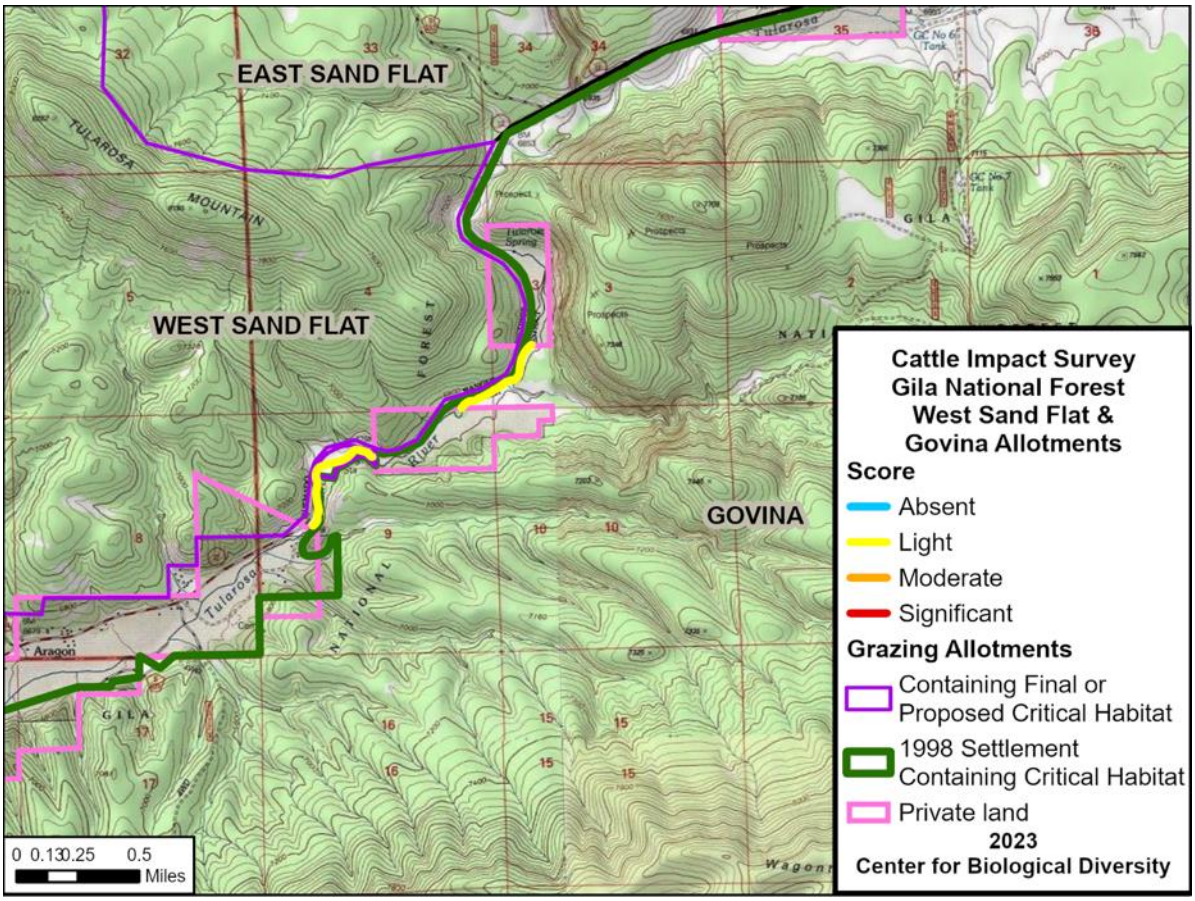
There was older sign of cattle usage, but no indication of recent grazing or cow intrusions. Overall impacts remain light from previous cattle use. Most herbaceous vegetation is robust and tall (photo).



Year	Absent	Light	Moderate	Significant	Total
2023		.3 miles			.3 miles
2022				**.3 miles**	.3 miles

District: **Reserve**
Allotment: **Govina**
Critical Habitat: **Chiricahua leopard frog**
Drainage: **Tularosa River**
Surveyed: **4/11/2023**
Cattle Seen: **No**

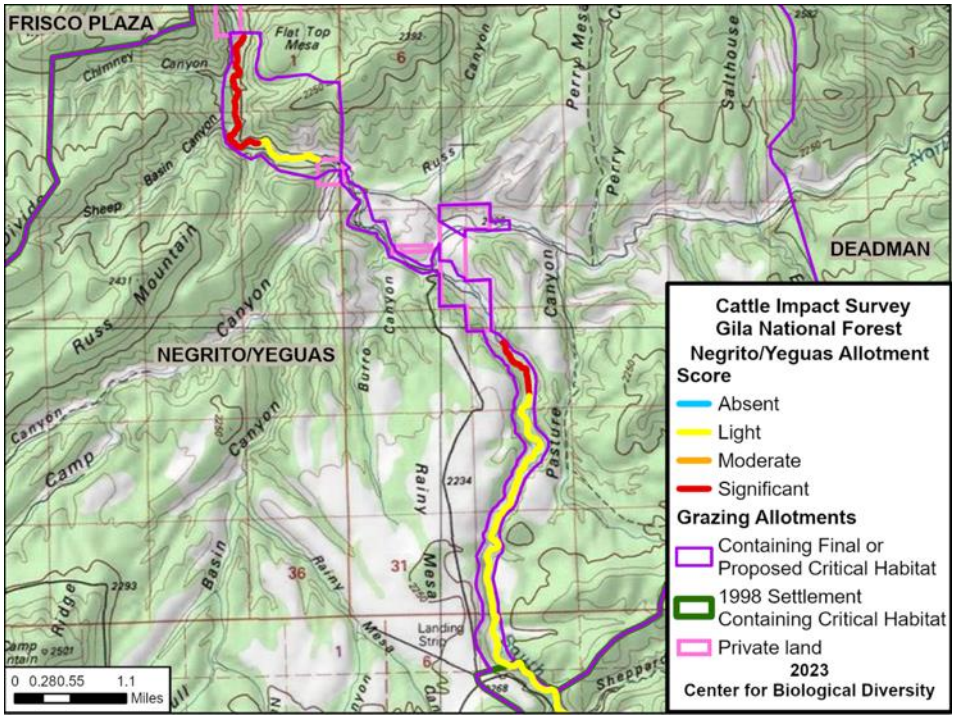
There is little to no sign of current use throughout the allotment. Some historical impacts from long term grazing and browsing persist. Grasses are recovering and vegetation is robust.



Year	Absent	Light	Moderate	Significant	Total
2023		4.5			4.5
2022		.7 miles		**.2 miles**	.9 miles

District: **Reserve**
Allotment: **Negrito/Yeguas**
Critical Habitat: **Chiricahua leopard frog, Narrow-headed garter snake**
Drainage: **Negrito Creek, Burro Canyon, Shogun Canyon**
Surveyed: **3/29-3/30/2023**
Cattle Seen: **Yes**

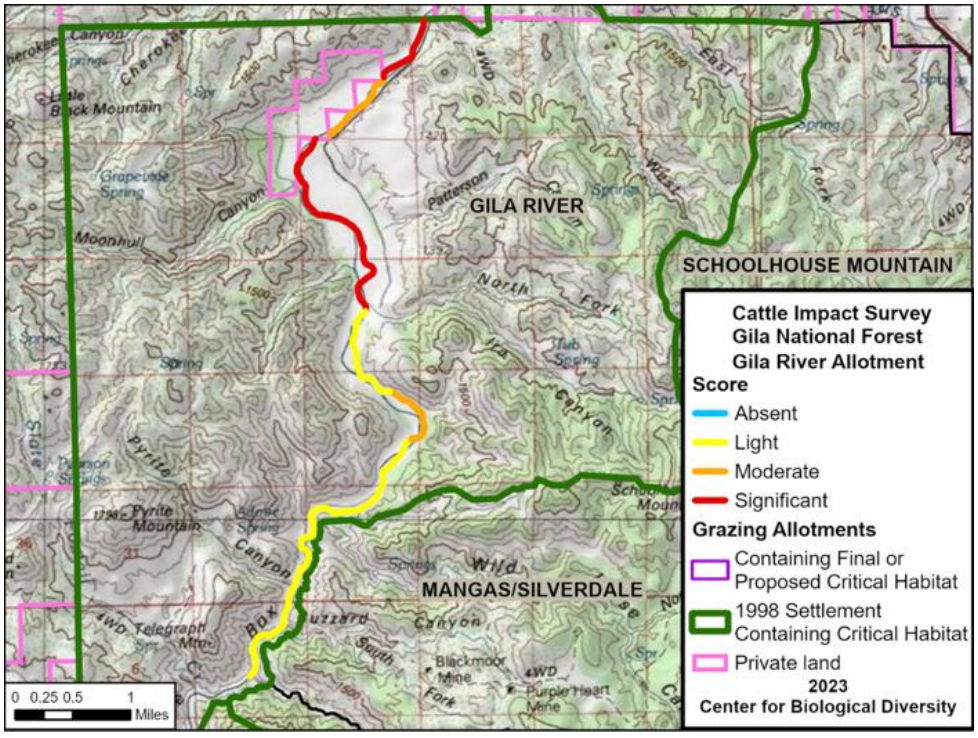
The upstream, southern most section of the allotment, shows no current sign or grazing pressure but maintains light impact from past cattle use. Nearing the private land, horse scat became abundant and riverside grasses were grazed to ground level resulting in a mowed appearance (photo). Little to no woody vegetation is present. Between the two private property pieces one bull was seen at Burro Canyon with multiple ear tags (photo-cows). The downstream section is impacted by heavy flooding and is mostly gravel bars and scoured stream banks. The few grassy areas were heavily grazed. Four more cows were seen near Sheep Basin canyon with yellow ear tags (photo-cows). There were multiple cow trails and trampling throughout the area (photo). Exclosure fencing is absent and cows are moving freely into the riparian habitat. A new road has been graded or bulldozed along the creek from private property into public land.



Year	Absent	Light	Moderate	Significant	Total
2023		3.1		2.2 miles	5.3 miles
2022		3.7 miles		**2.3 miles**	6.0 miles

District: **Silver City**
Allotment: **Gila River**
Critical Habitat: **Loach minnow, Narrow-headed garter snake, Southwestern willow flycatcher, Spikedace, Yellow-billed cuckoo**
Drainage: **Gila River**
Surveyed: **6/27/2023**
Cattle Seen: **Yes**

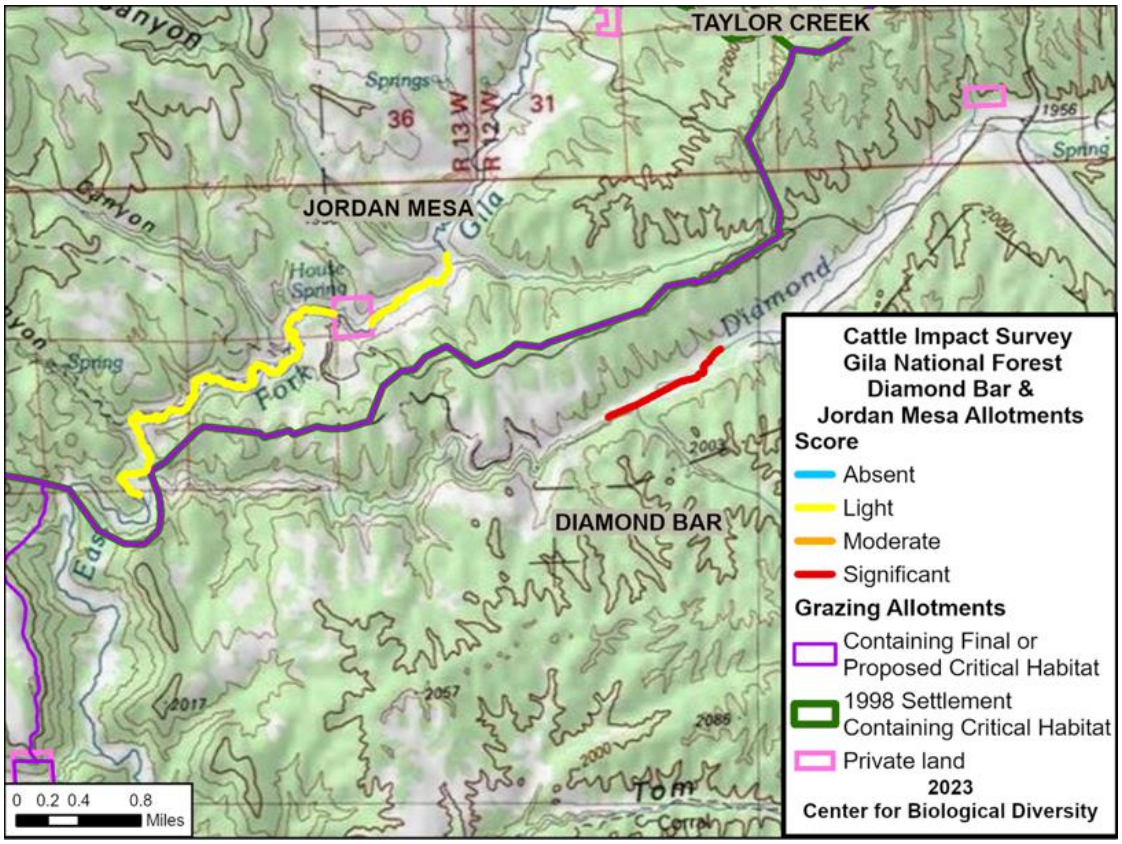
Cattle impact is light at the upstream end of the allotment, although exclosure fencing is damaged. Moving downstream, beginning at the River Vista trail, impacts increase, where recent haul out and loafing areas have been created. Banks were sheared and chiseled from multiple crossings. Further downstream, multiple exclosure gates were open onto the riparian critical habitat and 6 cows were seen grazing along the river near Ira canyon (photo-cows). Cows were entering and fouling the water at multiple locations (photo). This section of the allotment had significant grazing damage, especially near adjacent fenced pastures. Multiple reports from the Bird Area throughout the Summer, identified cattle as present and within exclosure areas.



Year	Absent	Light	Moderate	Significant	Total
2023		4.0 miles	1.4 miles	**2.7 miles**	8.1 miles
2022			.2 miles		.2 miles

District: **Wilderness**
Allotment: **Diamond Bar & Jordan Mesa**
Critical Habitat **Chiricahua leopard frog, Loach minnow, Narrow-headed garter snake, Spikedace**
Drainage: **Diamond Creek**
Surveyed: **7/5/2023**
Cattle Seen: **No**

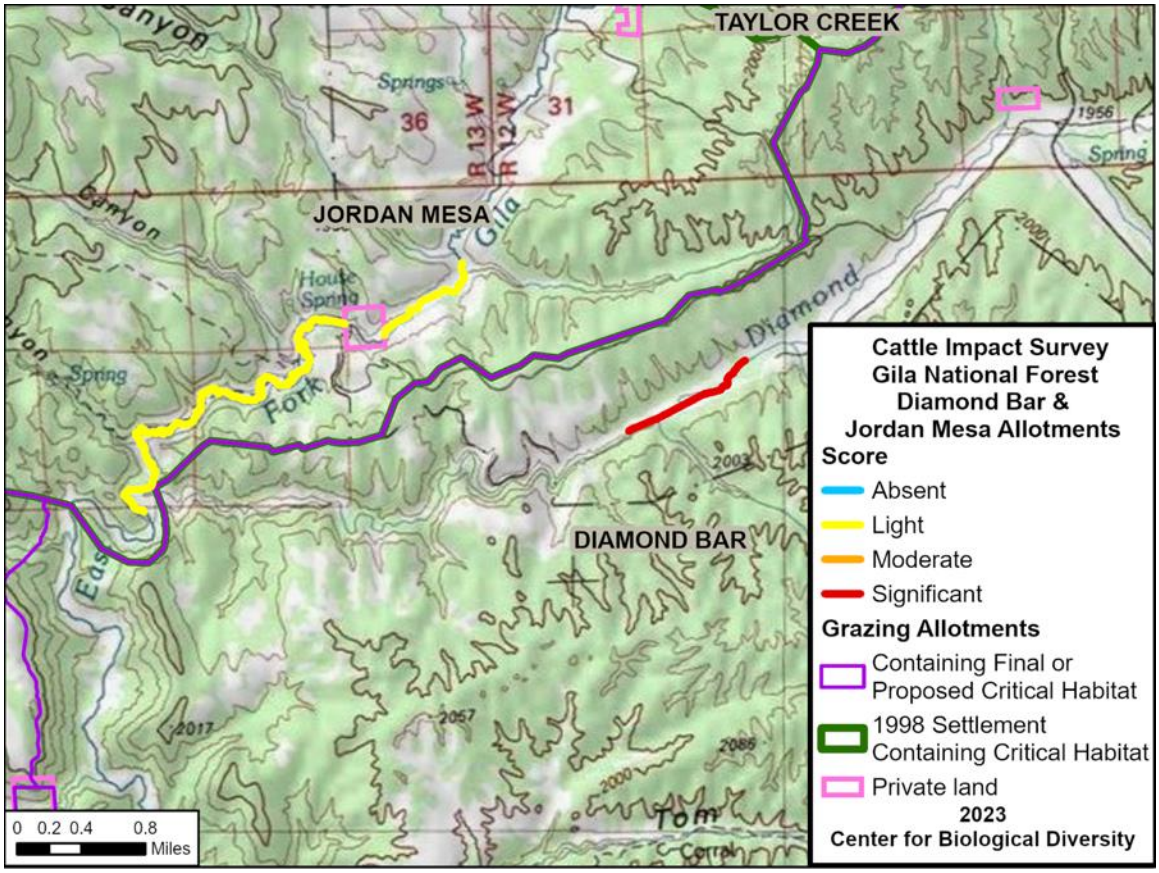
Due to the Black Fire effects and 2022 flooding, the creek bottom has changed considerably and is now more open and graveled. No water was in the creek at the time of the survey. However, there are still significant and pervasive grazing impacts throughout the survey area as has been documented in several past years. Invasive Bull Thistle has taken over the area. No woody recruitment is occurring. The area is denuded down to bare soil (photo).



Year	Absent	Light	Moderate	Significant	Total
2023				**.9 miles**	.9miles
2022		7.3 miles			7.3 miles

District: **Wilderness**
Allotment: **Jordan Mesa**
Critical Habitat: **Loach minnow, Narrow-headed garter snake (PCH), Spikedace**
Drainage: **Gila River, East Fork**
Surveyed: **7/5/2023**
Cattle Seen: **No**

Jordan Mesa has seen steady improvement since cattle were removed from the allotment. Light impacts from historical grazing pressure persist throughout.

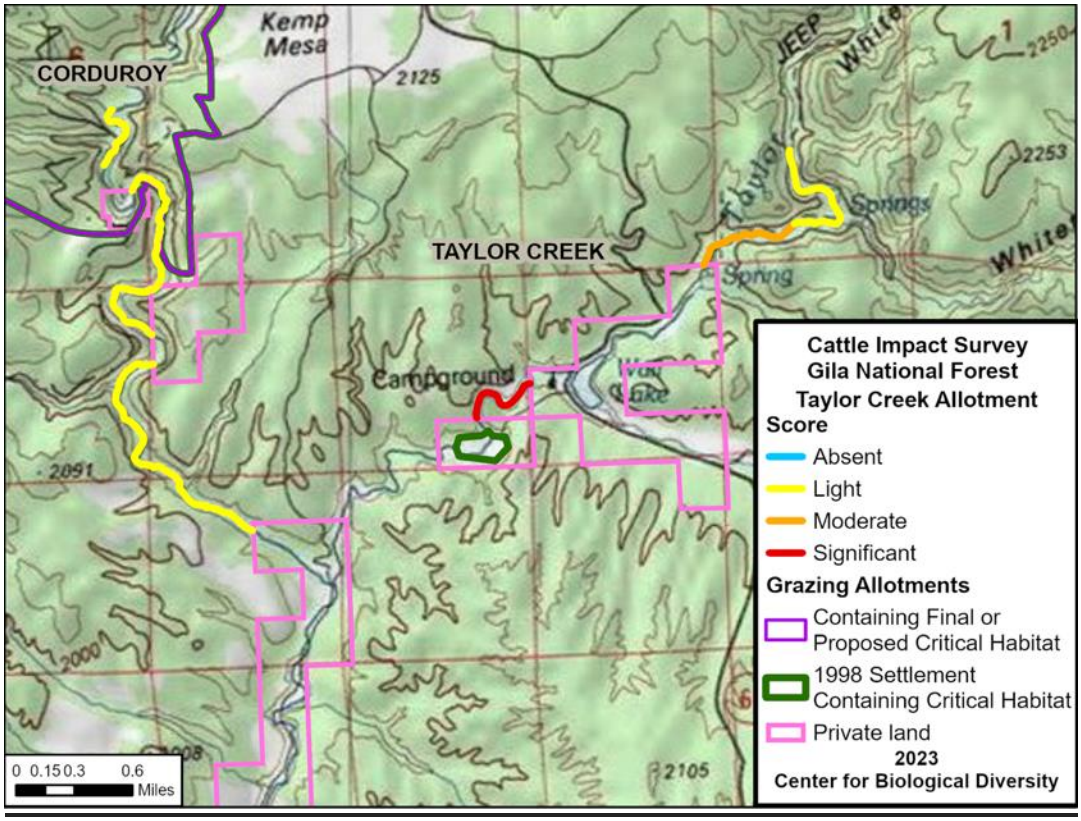


Year	Absent	Light	Moderate	Significant	Total
2023		4.0 miles			4 miles
2022		4.5 miles		**.5 miles**	5.0 miles

District: **Wilderness**
Allotment: **Taylor Creek Allotment**
Critical Habitat: **Chiricahua leopard frog, Loach minnow, Spikedace**
Drainage: **Beaver Creek and Taylor Creek**
Surveyed: **7/4/2023**
Cattle Seen: **No**

At the downstream end of Taylor Creek near the private property boundary, there are multiple, and severe impacts from recent cow activity. The area is highly trampled, and grazing has mowed grasses down to soil. There is no woody recruitment (photo).

The Beaver creek portion of the allotment remains well fenced and conditions continue to improve. There is no new cow sign, herbaceous vegetation is robust, but there is still very little woody regeneration from historical browse pressure from trespass cattle (photo). Invasive bull thistle is abundant within previously grazed areas.



Year	Absent	Light	Moderate	Significant	Total
2023		2.5 miles	.6 miles	**.5 miles**	3.6 miles
2022		3.4 miles	.6 miles	**.6 miles**	4.6 miles

Survey of Wilderness Gila River
Allotments: Brock Canyon, Redstone, XSX
Date of Survey. 6/20-22/2023

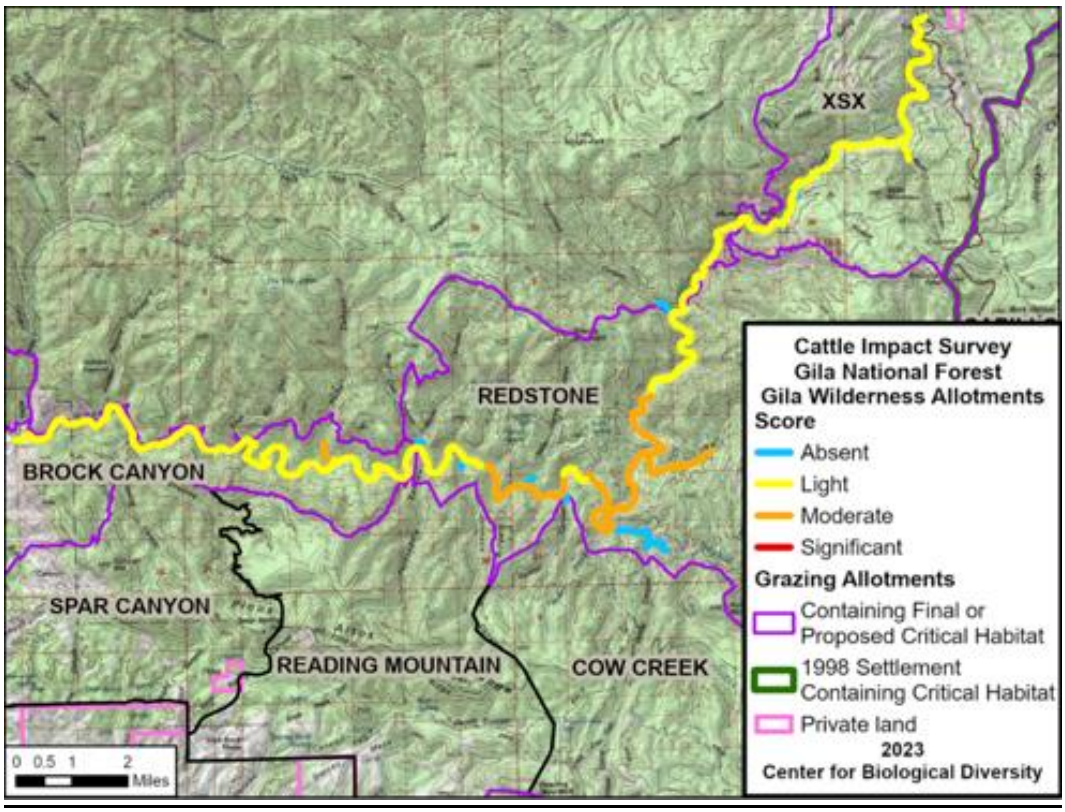
A survey was completed for the length of the XSX, Redstone and Brock allotments, from Grapevine Campground to Turkey Creek. Fourteen side canyons were also surveyed for cattle use and impacts.

Recent cattle sign: There was no recent sign of cattle in the upstream part of the survey through the XSX allotment. However, there were signs of recent cattle use in Alum canyon. Fresh sign was abundant from Falls canyon to the confluence of Sapillo Creek. No sign was found up Sapillo Canyon. Moving downstream, fresh sign was seen near Packsaddle Canyon and Water Canyons. Notably, Hells Canyon contained two areas denuded of vegetation where cattle had recently hauled out. While no cows were seen during this survey, **cows were reported during the months of May and June along the Gila River Mainstem through our public reporting project.**

Cattle impacts: There were minimal current grazing impacts along the Gila River. However, light impacts from past grazing pressure and trampling exist on both the upstream and downstream sections. Impacts remain moderate along the river near the Sapillo confluence, where critical habitat is recovering more slowly. In the past, this area contained the highest density of feral cows. Both immediately upstream and downstream of the confluence, current impacts are still occurring, including grazing and evidence of wallows (photo). Areas severely impacted by feral cow activity area not fully recovered.

Overall, there is considerable improvement in habitat conditions along the Gila River Mainstem as seen in the comparison of 2022 data and 2023 data below.

	ABSENT IMPACT	LIGHT IMPACT	MODERATE IMPACT	SIGNIFICANT IMPACT	TOTAL MILES
2023 Gila Wilderness River (Allotments: XSX, Brock, Redstone)	2.6 miles	25.3 miles	10.4 miles		38.3 miles
2022 Gila Wilderness River (Allotments, Brock, Redstone)	.3 miles	14.2 miles	3.7 miles	18 miles	36.2 miles



Sustained impacts from overgrazing by feral cattle on the Redstone allotment

Additional Feral Cow Surveys
Turkey Creek and Miller Spring: June 23-24, 2023

There was minimal sign at the Turkey Creek/Gila River confluence, but cow trails and trampling were noted higher up the canyon (photo). After the turnoff to Miller Spring Cabin, a bull was sighted down in Miller Spring Canyon just before the switchbacks leading to the cabin. Location: (33.127131, -108.357068). In the surrounding area, multiple rutting signs were noted, including some close to Miller Tank. The pond area was beginning to be fouled with cow activity and feces. There were additional smaller cow tracks that may have been additional females. Recent activity was also seen near the drop off to Sycamore Canyon.

Feral Cattle using Miller Spring Tank (pond), June, 2023.

METHODS

Data on cattle impacts in riparian areas with critical habitat were collected at ¼ mile to 1 mile segments in length. Within each segment, multiple photos of specific types of impacts were taken. Surveyors used the ARC-GIS compatible FIELD MAPS software to collect segment endpoint data. An interactive GIS database of georeferenced photo-points and segment impact data was created. Several hundred photos documenting cattle impacts are available within this database that validate the impacts and subsequent impact scores.

Surveyors walked the stream reaches of critical habitat in allotments and recorded the level of impact in the following six categories:

- Grazing impacts on herbaceous vegetation and grasses
- Browsing impacts on multiyear stems and near channel woody regeneration
- Ground disturbances from trailing, trampling, and wallowing
- Extent and pervasiveness of ground disturbances in exclosure reaches
- Intensity of streambank degradation
- Extent and pervasiveness of streambank erosion levels in exclosure reaches from cattle.

`For each of the six categories of cattle impact, detailed condition descriptors were determined based on pre-survey sample areas and field observations. Each level of condition was then assigned a severity level of 1-4 (Table 4, next page). At each segment endpoint, the severity level (score) was determined for each impact. A segment was rated 0 for a particular category if no evidence of impact was seen.

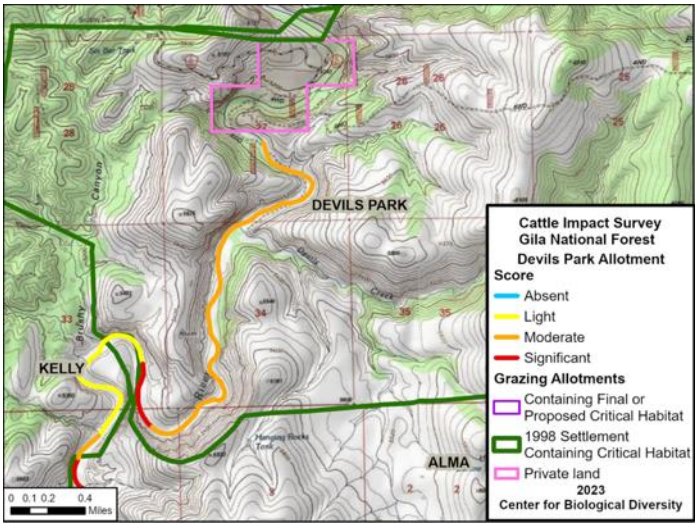
Table 4. Condition descriptors and severity scores for six cattle impact categories

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).

Subsequent to the field survey, each segment was then rated for its overall impact level based on a cumulative and weighted score of the six impact categories. Overall impact levels were categorized as absent, light, moderate, or significant, based on specific impact scores. Each survey segment was color coded for its overall impact level (see Table 5). Segments were linked together across the riparian miles. Based on these coded segments, a series of maps was made for each allotment surveyed (see map example below).

Table 5. Weighting table for *overall impact levels* of stream reach segments based on condition scores (0-4) from 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)*	
BLUE	***YELLOW***	***ORANGE***	***RED***



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