Northern New Mexico Stockman's Association

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The Future of Livestock Grazing on New Mexico's National Forests
Northern New Mexico Stockman's Association

Chicoma Allotment Assessment 2024

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WESTERN SARE
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Chicoma Allotment Producers Assessment 2024

Area: 3,218 grazeable acres

Allotment Owners: 6

Total Permitted Livestock: 157
Possible Stocking Rate: 427 AUE (based on 40% of 2024 forage production)
Allotment is permitted at 36.8% of actual carrying capacity.
Livestock are consuming 14.7% of allowable use forage.

Transects: Trail Head (TH) to Santa Clara Pueblo
Jarosito
Cienega Redonda

Field Days

6/8/24	3 producers
8/8/24	3 producers, 2 USFS personnel
10/25/24	4 producers, 3 USFS personnel, 1 WSARE representative, 1NMDA
2/23/24	4 producers

Methodology: Qualitative data was systematically gathered using ethnographic methods: face-to-face accompaniment in diverse social, political, and economic contexts of everyday life. Dr. Valencia conducted Participant-observation (DeWalt and DeWalt 2002) prior to livestock entry, during livestock grazing, and after livestock exit. Dr. Valencia also attended cattle association meetings, feast days, fiestas, county fair events, and meetings between producers and management agencies. During participant-observation close attention was paid to producers' descriptions, interpretations, and explanations of rangeland conditions and impacts on their livestock operations, on ranchers' management practices and decision-making processes. Ethnographic field notes were made (Emerson et al. 2011) of participant-observation, recording what is meaningful and important to producers, how producers grapple with sustainability, how understandings of conditions and impacts emerge and change over time, and what knowledge ranchers rely on to make assessments and management decisions. Dr. Valencia also conducted structured and unstructured interviews (Warren and Karner 2015, Brinkmann 2013, Weiss 2004) with producers focusing on their descriptions, interpretations, and explanations of climate and rangeland conditions and impacts on livestock operations. Participatory mapping exercises (Robinson et al. 2016) were also conducted with producers to plot forage, water, and wildlife observations. Dr. Valencia used visual and audio methods to record qualitative data (Warren and Karner 2015). Qualitative data produces culturally situated understandings of rangeland conditions and impacts on livestock operations from the

perspective of Hispano and Native American livestock producers. It supports the development of better management targets and more inclusive decision-making processes.

The Project Team also met with producers and USFS staff to conduct quantitative rangeland assessments using the Rapid Assessment Methodologies and to review end of season summary reports (RAM; Spackman et al. 2022, Allison et al. 2007). Dr. Spackman served as a consultant for producer led RAM training and data entry through the online Rangeland Data Analysis and Records (RaDAR) program, as well as compiling and producing RaDAR end of season reports.

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Forage

At the beginning of the season, the forage along the border with the Valles Caldera is noticeably different. New forage growth on the allotment side stands out from last year's growth on Valles Caldera side which was not grazed last year. Producers explained how grazing helps to keep forage new and builds it up in terms of root systems, quality, and quantity. Grazed areas produce forage with higher nutritional value for livestock. This is particularly important due to National Park Service and environmental groups' claims that cattle are running out of grass in the allotment and trespassing in the Valles Caldera to graze. The grass in the Valles Caldera is old, less desirable for cattle, and less nutritious. At mid-season producers described conditions as lively: grass was in good condition, water was available throughout the allotment, and livestock were active. At mid-season overall biomass availability across the allotment was higher in 2024 (1579.7 lbs/acre) than 2023 (1368.5 lbs/acre). Forage in the Trail Head to Santa Clara transect was flattened by heavy rainfall and runoff down the mountainside, due to steep slope (30-60%). Producers felt that overall conditions at the end of the grazing season were better than the previous year. Forage conditions at the end of season showed signs of wildlife use following removal of livestock from key pastures. Producers reported good livestock health consistent with the previous year. Calves entered the allotment at 150lbs at the beginning of the grazing season and were weaned at 600lbs at the end of the grazing season. This amounts to 3lbs of daily gain on the allotment, which producers qualified as good. Chicoma producers regularly observed unauthorized livestock from neighboring allotments, potentially but not significantly contributing to overall utilization numbers,. . Producers described forage conditions at the beginning of the season as good, especially in previously burned areas. They indicated that pastures with clover were grazed hardest. This observation can be supported by percent utilization being proportional to clover cover in the end-of-year reports (71.4, 58.2, 0% use with 14, 9, 0% clover cover). Annual forage production in 2024 (1293lbs/acre) was lower than in 2023 (1756 lbs/acre), but utilization remained similar (47.7 from 48.6% in 2023). Livestock accounted for 14.7% of overall utilization with permitted numbers

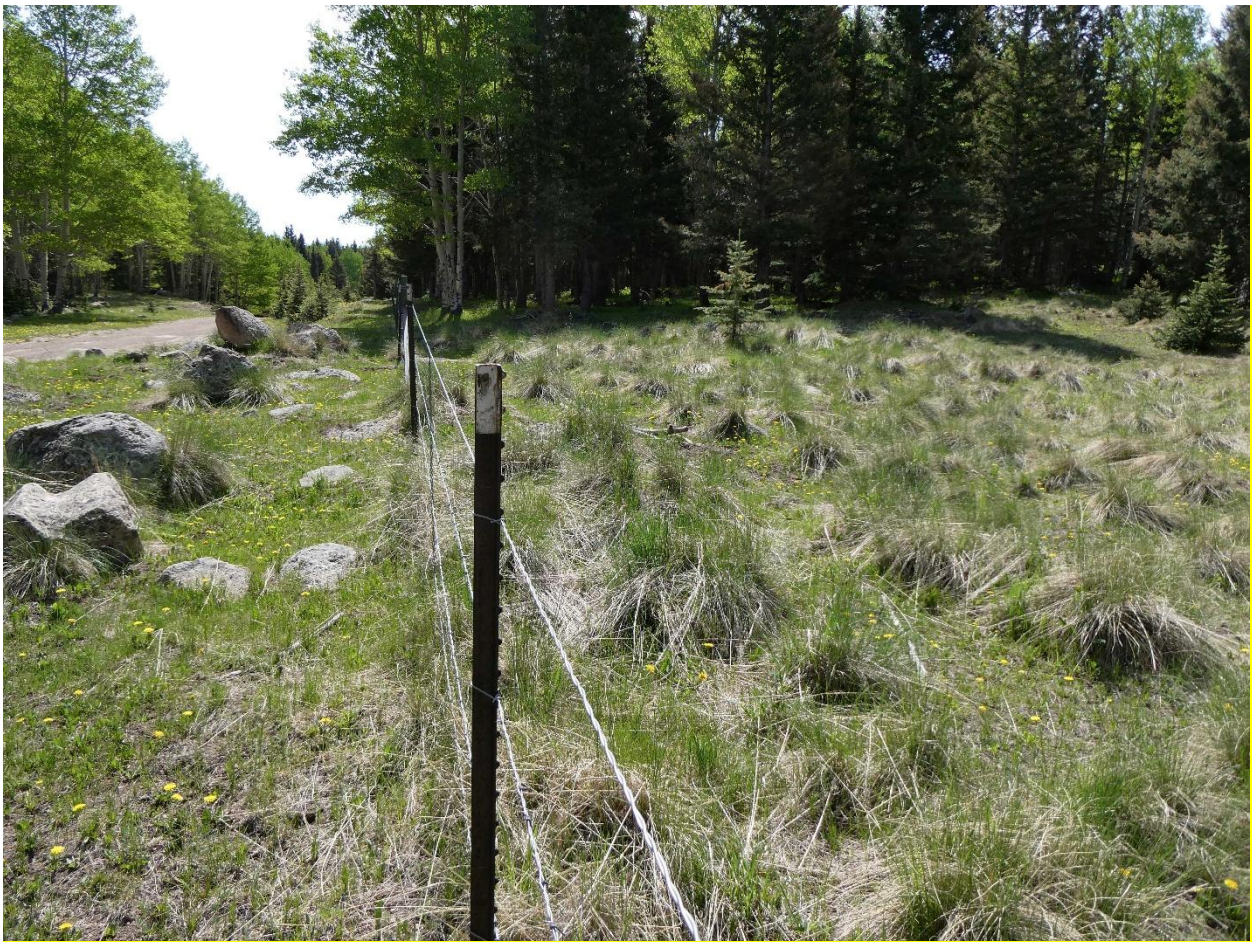

Figure 1 Forage on allotment at left is grazed and new with high nutrient value. Forage on the Valles Caldera (right) is not grazed is last year's growth, dry, and undesirable for both livestock and wildlife. June 8, 2024. Photo: C. Valencia

Water

At the beginning of the season producers observed less flowing water across the overall transect. Impacts were less stockwater availability in *tanques* and less water for early forage growth. Producers also observed that tree encroachment around *ojos* was drying up natural springs and livestock water sources quicker decreasing livestock water availability in some pastures. Producers recall continuous, joined, and open pastures dominated the allotment. These same pastures are now segmented or cut-off from each other entirely due to 20- and 30-year-old spruce tree growth. In early July precipitation in parts of the transect exceeded 7.5 inches. At mid-season the head waters of several creeks were flowing in key pastures and livestock tanques were full. The Jarosito stream was running. Forage in areas like the Trail Head to Santa Clara Pueblo was pushed down or damaged on the mountainside from heavy rains. At mid-season rain totals (7.2 inches avg.) are higher much higher than in 2023 (2.3 inches average) across the allotment. At the end of the season producers observed increased soil moisture in all transects. Forage in some areas was still

impacted by the heavy rainfall. At the end of the season, rainfall averages were also much higher in 2024 (3.32 inches) than in 2023 (1.37 inches) across the allotment. Producers noted elk wallows and damage near water and on pastures with flowing water or streams.

Figure 2 Tree encroachment on springs. 6/8/24. Photo: C. Valencia

Wildlife

Early season monitoring showed heavy elk presence across the allotment. Producers observed that elk are on the allotment full-time and not migrating. Rather they are becoming resident herds. At mid-season there was heavy elk presence across the allotment. Problematically areas where livestock graze offer more palatable and higher nutritional value forage for wildlife as well. Forage conditions at the end of season showed heavy wildlife presence and use following removal of livestock from key pastures. The Trail Head to Santa Clara Pueblo camera is representative of camera data across the allotment. Elk were grazing day and night simultaneous with cattle or without cattle as follows:

Wildlife Analysis on Trail Head to Santa Clara Pueblo[1]

Frequency	Days/Nights Week	# Weeks
High	6-7	1
Medium	3-5	9
Low	1-2	4

Intensity	Head Count[2]	# Weeks
H+	25+	5
H	11-25	0
M	5-10	9
L	1-5	0

1 Data is for 16 weeks of season only. Data is not available for the month of September.

2 Head count is within camera field of vision only (50°x110ft maximum range) and not a true head count of what is on the entire pasture at the time of the photo.

Producer Recommendations:

- Thin up to 20 acres in areas near springs to bring back water to creeks and increase livestock water availability.
- Install weather stations.
- Insist on participation of NM Game & Fish in management.

Practices:

Some producers have placed permits in non-use status due to boundary issues such as no and poor fences along the Santa Clara Pueblo and the Valles Caldera boundaries, the unwillingness of the Pueblo government or the Federal Government National Park Service to collaborate, cooperate, and coordinate with producers. Other reasons include heavy elk utilization before and during livestock grazing season and the lack of engagement by NM Game and Fish to address elk problems.

Other producers are driving cattle to mountainsides far from trails along boundaries with the Pueblo and the Valles Caldera to avoid conflict or consequences of trespass cattle such as fines and impoundment. This represents a double burden for producers.

Monitoring and maintenance on horseback.

Producers would like more information about:

- How livestock health correlates to rangeland conditions.
- More information about unauthorized livestock impact.

- Impact of forest thinning on water availability.
- Historical precipitation data.
- Indicators of climate change and how is it measured.
- Specific definitions of climate change.

The following information is a summary of the quantitative data collected over the 2024 grazing season. Data was collected using the Rapid Assessment Methodology (RAM; Spackman et al., 2022). Summaries were produced using the Rangeland Data Analysis and Record program (RaDAR; rangelandradar.app) and include individual pasture assessments and the allotment averages for each collection period (Spackman 2025). This is a single year of data and should not be used to make long-term management decisions or increases/decreases in stocking rates. Multiple years of monitoring is required (minimum of 3-5 years) to begin developing management decisions (Holecheck et al., 2011). An explanation of report contents is explained below.

Biomass Availability (also called standing crop or residual biomass) is the amount of vegetation, expressed as a weight per area, present during a given point in time, not excluded from grazing activity. Five clippings were taken along each transect, dried, and weighed. The five weights were then averaged and converted to pounds per acre based on a 0.96 ft^2 hoop conversion factor of 100 to obtain biomass availability +/- standard error (variability in weights). It can be used as a grazing intensity guide during the season, if location and number of samples are representative of the landscape, to make temporary adjustments in livestock distribution.

Annual Forage Production is plant material collected from grazing exclusion cages, expressed as a weight per area, and used to assess forage production for an entire year. This an estimate of what the land can produce without grazing. Three cages were placed near each transect at the beginning of the grazing season. Samples were collected at the end of the season, clipping forage within a 0.96 ft^2 hoop, which was placed in the middle of each cage. Each sample was subsequently dried, weighed, and averaged together. The average was then converted to pounds per acre based on a 0.96 ft^2 hoop conversion factor of 100 to obtain annual forage production +/- standard error (variability in weights).

Estimated Stocking Rate is the calculation of animal unit equivalents (AUE) that the allotment could support for a duration of one month (AUM). Mid-season stocking rates were not calculated as stocking rates can only be estimated from annual forage production. Individual pasture stocking rates were calculated but used whole allotment grazable acres and are only produced to give an AUM range, not compute actual stocking rate. Estimates are based upon the average collected annual forage production across the allotment, forest service provided grazable acres (pasture size in report) based on the environmental assessment, cattle forage demand of 26 pounds per day (SRM 1998), a

conservative 40 percent forage use allocation (Holechek & Galt 2000), and a 30 day grazing period (Holecheck et al., 2011; Vallentine 2001). The AUM calculation equation is:

$$\frac{(annual\ production\ \times\ grazable\ acres\ \times\ use\ allocation)}{animal\ forage\ demand\ \times 30\ days} = AUM$$

Percent Cover is the proportion of the ground surface that is covered by vegetation, litter, rocks, bare soil, or other attributes. It is used to assess distribution and composition of different material covering the ground. The assessment was done along a transect using the step-point method. At each step basal cover was recorded at the tip of the boot until 100 readings were taken. Each cover type was summed to give a percent. Percent cover is slow to change and should be looked at over several years (5 to 10 years) to provide insights about vegetation density, potential erosion, and livestock management (Holechek et al., 2011).

Vegetation Cover – Grasses is the percentage of grasses (grazing forage) by common name and scientific abbreviation (symbol) based on the amount of percent cover of vegetation along the transect. The percentage provides the land manager with species forage composition and diversity. Furthermore, changes in composition can be used as an indicator of grazing impact and vegetation trends over time.

Other Vegetation Cover is the percentage of vegetation that are not grasses based on percent cover of vegetation along the transect. This is similar to vegetation cover – grasses and can also be used as an indicator of forage composition and habitat for wildlife.

Forage Composition is the percentage of all grass species found along the transect even if cover was not vegetation; where nearest grass species was recorded on the datasheet. Additionally, height of each species is recorded by extending leaves upward and recording the average leaf lengths of all leaves. This provides and inventory and relative abundance (vegetation cover) or diversity of all grasses including their stubble heights. It identifies the specific combination and distribution of different species and helps assess the overall forage biodiversity within the plant community. Furthermore, the stubble heights give an estimate of grazing intensity and potential insight to make mid-season adjustments to grazing strategies (i.e., animal distribution and duration). Species are listed by their common name, scientific abbreviation (symbol), percent, with the addition of height and their minimum height grazing guideline (Holechek and Galt 2000).

Fecal Counts are used to estimate and monitor relative presence or absence of animals. It is not used to assess animal abundance but can be used generally as an indicator of increases or decreases in animal visitations over time (years).

Photos are used as a qualitative assessment to support quantitative information. They can be used as an illustrative record of the conditions that occurred at a given point in time. Ground photos when accompanied with a scaled ruler can be used to quantify cover or

species composition, but are limited unless multiple ground photos are taken. Landscape photos can be used to demonstrate grazing intensity and correlated to the quantitative data.

Utilization

A summary of production and utilization is provided at the end of the reports (Table 2). Utilization is a guide and should not be used as a standard or threshold for range management decisions (SRM-RAMC 2018; Ruyle et al., 2007). Conservative grazing (30-40 percent utilization) is the recommended in the southwest to sustain or improve rangeland conditions and optimize livestock productivity (Holechek and Galt 2000). The following equation was used to calculate percent utilization:

$$\frac{(annual\ production\ -available\ biomass)}{annual\ production} \times 100\ = percent\ utilization$$

Physical Constraint of Animal Intake

Utilization is a very useful guide when all grazing species are accounted for. When multiple grazing species or uncontrolled grazers such as wildlife are present, it becomes difficult if not impossible to determine how much each species has consumed in relation to utilization. This concept, known as resource partitioning, is an ongoing issue for rangeland managers. Currently there is no direct measurement to partition use on rangelands. However, forage intake of range cattle has been extensively researched (Vallentine 1990, McKown et al., 1991, and Holechek et al 2011) and a 1,000-pound mature cow consumes on average 26 pounds of dry forage per day (SRM 1998). Intake can vary depending on other factors such as reproductive status or environmental conditions but the scientifically accepted intake is between 2 and 2.6 percent of the animals body weight (NASEM 2016). Thus, a physical constraint of intake model can be used to calculate approximate cattle use on rangelands. This calculation uses the stocking rate equation, described previously, rearranging the parameters to solve for the desired utilization rather than animal units. It is worth noting that this is a calculation, not a direct measurement of utilization, and should be used as an approximate use level by cattle. A calculated estimate of cattle use can be found in Table 3.

Similarly, the equation can be rearranged to determine how much an individual animal would consume daily (animal demand) to account for the observed utilization level. This equation helps determines if there is any disparity between physical constraint of intake and the observed utilization level on the allotment. Excess intake above 26 pounds can be contributed to other grazing animals and environmental influences.

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RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**SC Trailhead**	
Date:	**8/9/2024**	**Collector Names:**	**NNMSA**	
Transect Number:	**3**	**GPS Coordinates:**	**36.01583, -106. 45631**	**(319°)**

Notes:

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
2530.8 ± 729.7 lbs per acre	3466 acres	AUM	

Percent Cover

Bare Ground	13
Litter	25
Vegetation	46
Rock (>3/4")	16
	100

Vegetation Cover - Grasses

Common Name	*Symbol*	*Percent*
Kentucky Bluegrass	POPR	24
		24

Other Vegetation Cover

Common Name	*Percent*
Clover spp.	13
Forb Unknown	9
	22

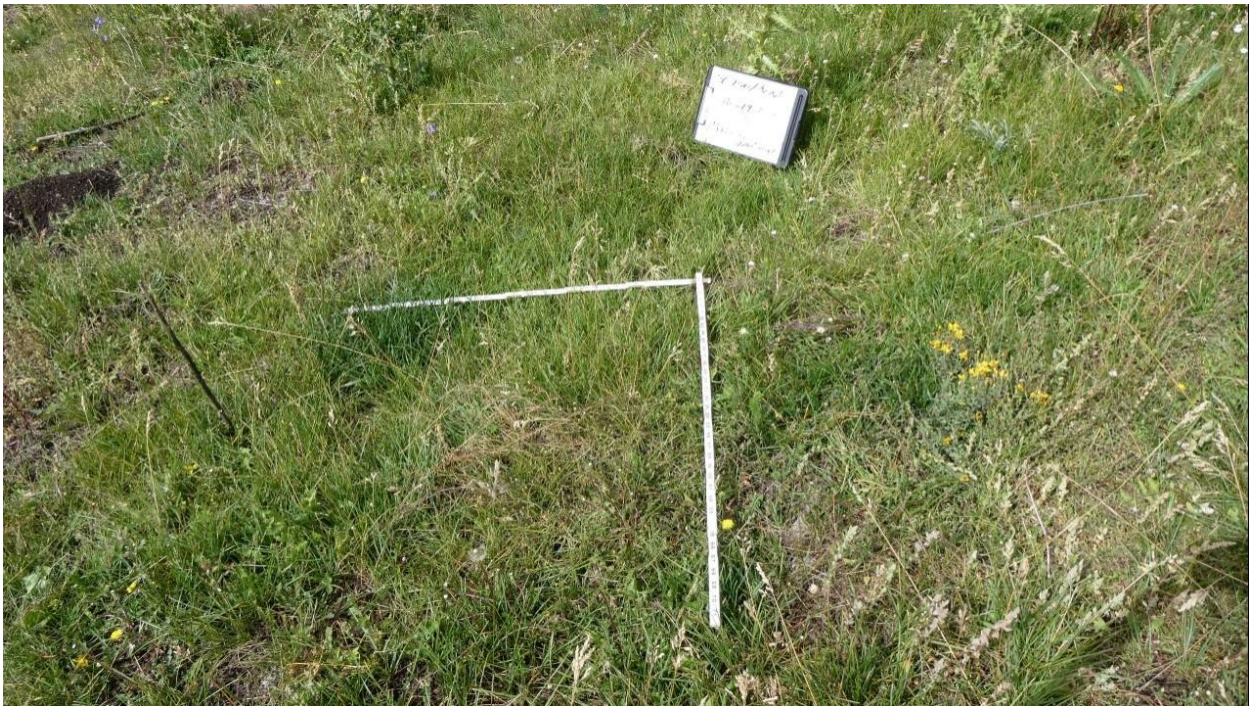
Forage Composition

Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Kentucky Bluegrass	POPR	98	6.7	2.5
Sedge	Carex	1	6.7	1.5
Arizona Fescue	FEAR	1	21.0	4
		100	7.0	

Fecal Counts

Horse	0	Elk	7	Cattle	0	Deer	0

Ground Photo



Landscape Photo

RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**Jarosito**	
Date:	**8/9/2024**	**Collector Names:**	**NNMSA**	
Transect Number:	**2**	**GPS Coordinates:**	**36.02981, -106.44803**	**(338°)**

Notes: 3.56 in precipiation

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
710.6 ± 45.8 lbs per acre	3466 acres	AUM	

Percent Cover

Bare Ground	4
Litter	38
Vegetation	56
Rock (>3/4")	2
	100

Vegetation Cover - Grasses

Common Name	*Symbol*	*Percent*
Kentucky Bluegrass	POPR	11
Sedge	Carex	1
		12

Other Vegetation Cover

Common Name	*Percent*
Clover spp.	24
Forb Unknown	20
	44

Forage Composition

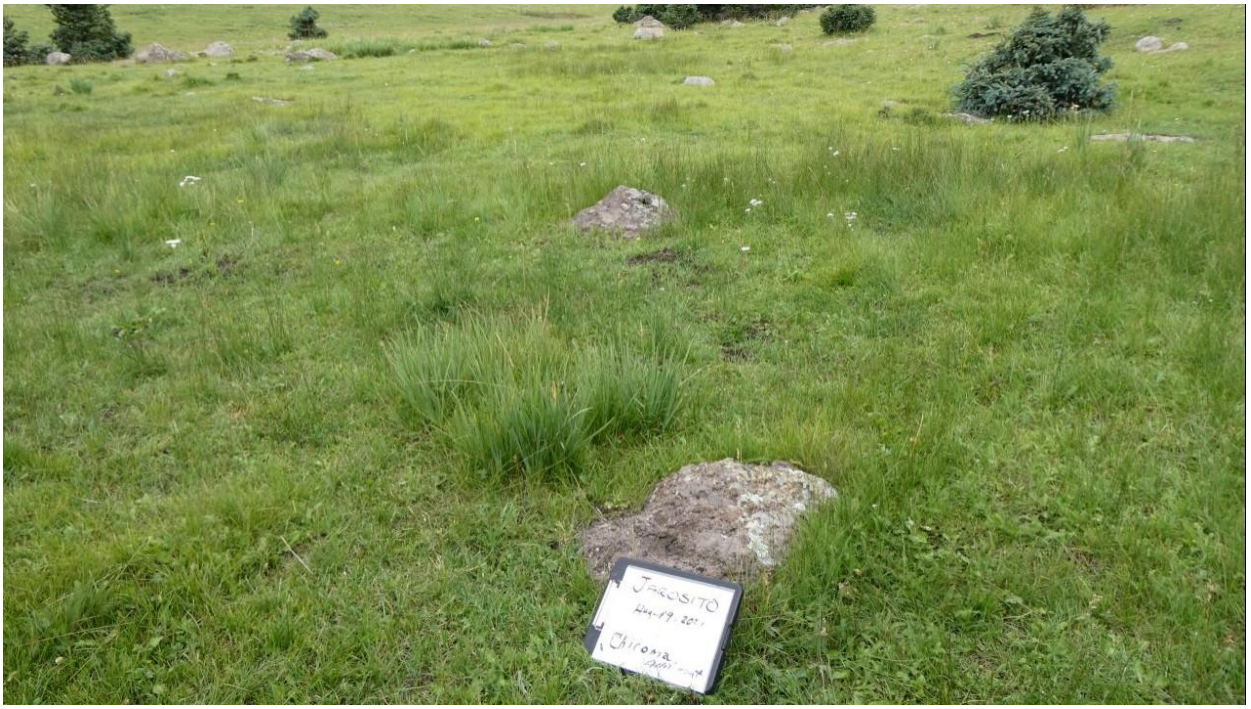
Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Kentucky Bluegrass	POPR	97	3.0	2.5
Sedge	Carex	3	6.0	1.5
		100	3.1	

Fecal Counts

Horse	0	Elk	27	Cattle	7	Deer	0

Ground Photo

Landscape Photo



RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**Cienega Redonda**	
Date:	**8/9/2024**	**Collector Names:**	**NNMSA**	
Transect Number:	**1**	**GPS Coordinates:**	**36.03331, -106.47667**	**(334°)**

Notes:

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
1497.6 ± 234.3 lbs per acre	3466 acres	AUM	

Percent Cover

Bare Ground	2
Litter	55
Vegetation	43
Rock (>3/4")	0
	100

Vegetation Cover - Grasses

Common Name	*Symbol*	*Percent*
Brome spp.	Brome	14
Kentucky Bluegrass	POPR	4
Interm. Wheatgrass	AGIN	1
		19

Other Vegetation Cover

Common Name	*Percent*
Forb Unknown	23
Clover spp.	1
	24

Forage Composition

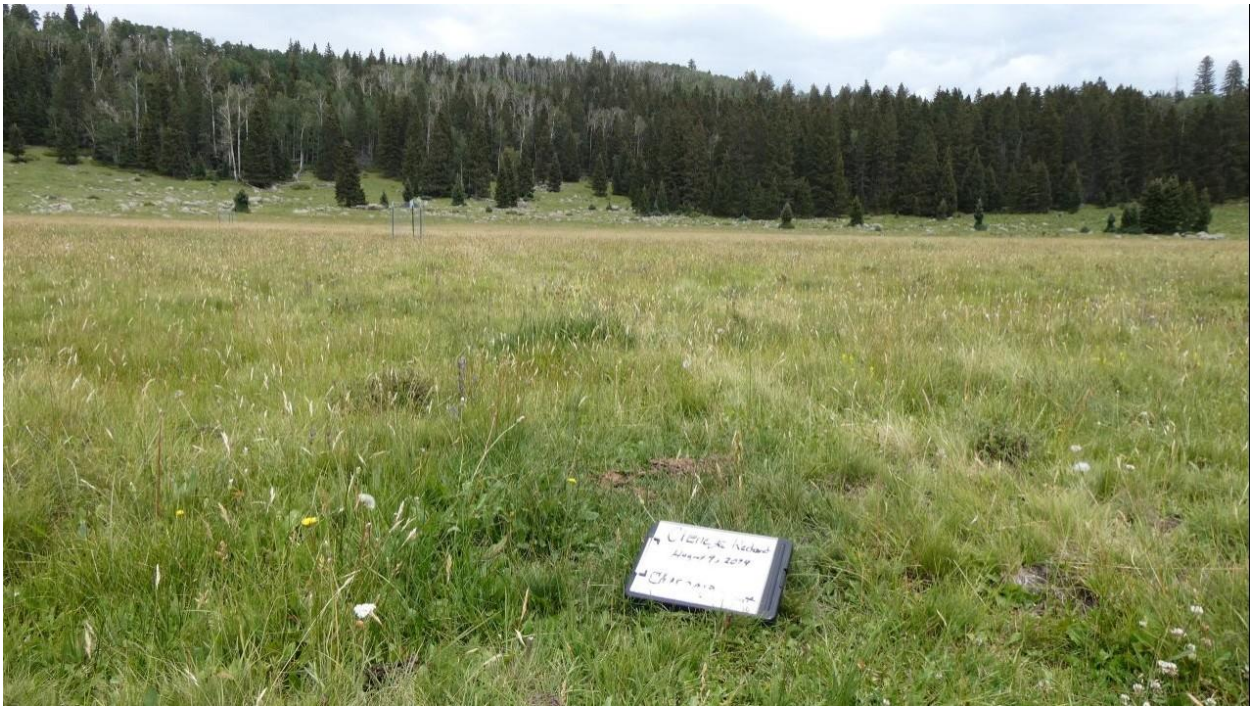
Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Brome spp.	Brome	58	5.0	4
Sedge	Carex	19	5.1	1.5
Kentucky Bluegrass	POPR	19	4.6	2.5
Mountain Muhly	MUMO	2	6.5	2.5
Interm. Wheatgrass	AGIN	1	10.0	4
Needlegrass	STIPA	1	5.0	4
		100	5.0	

Fecal Counts

Horse	0	Elk	7	Cattle	9	Deer	0

Ground Photo

Landscape Photo



RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**n/a**	
Date:	**8/9/2024**	**Collector Names:**	**n/a**	
Transect AVERAGES	**1,2,3,4,5**	**GPS Coordinates:**	**n/a**	**n/a**

Notes: **AVERAGES**

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
1579.7 ± 309.6 lbs per acre	3466 acres	AUM	

Percent Cover		**Vegetation Cover - Grasses**			**Other Vegetation Cover**	
Bare Ground	6.3	*Common Name*	*Symbol*	*Percent*	*Common Name*	*Percent*
Litter	39.3	Kentucky Bluegrass	POPR	13	Forb Unknown	17
Vegetation	48.3	Brome spp.	Brome	5	Clover spp.	13
Rock (>3/4")	6.0	Sedge	Carex	0	Iris spp.	
		Interm. Wheatgrass	AGIN	0		
	100			18		30

Forage Composition

Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Kentucky Bluegrass	POPR	71	4.5	2.5
Brome spp.	Brome	19	5.0	4
Sedge	Carex	8	5.2	1.5
Mountain Muhly	MUMO	1	6.5	2.5
Interm. Wheatgrass	AGIN	0	10.0	4
Arizona Fescue	FEAR	0	21.0	4
		100	4.74 ± 0.17	

Fecal Counts

Horse	0	Elk	41	Cattle	16	Deer	0		0

RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**SC Trailhead**	
Date:	**10/25/2024**	**Collector Names:**	**NNMSA**	
Transect Number:	**3**	**GPS Coordinates:**	**36.01583, -106. 45631**	**(319°)**

Notes:

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
801.4 ± 469.7 lbs per acre	3466 acres	3411.5 AUM	1919.3 ± 320 lbs per acre

Percent Cover

Bare Ground	5
Litter	43
Vegetation	34
Rock (>3/4")	18
	100

Vegetation Cover - Grasses

Common Name	*Symbol*	*Percent*
Kentucky Bluegrass	POPR	25
		25

Other Vegetation Cover

Common Name	*Percent*
Clover spp.	9
	9

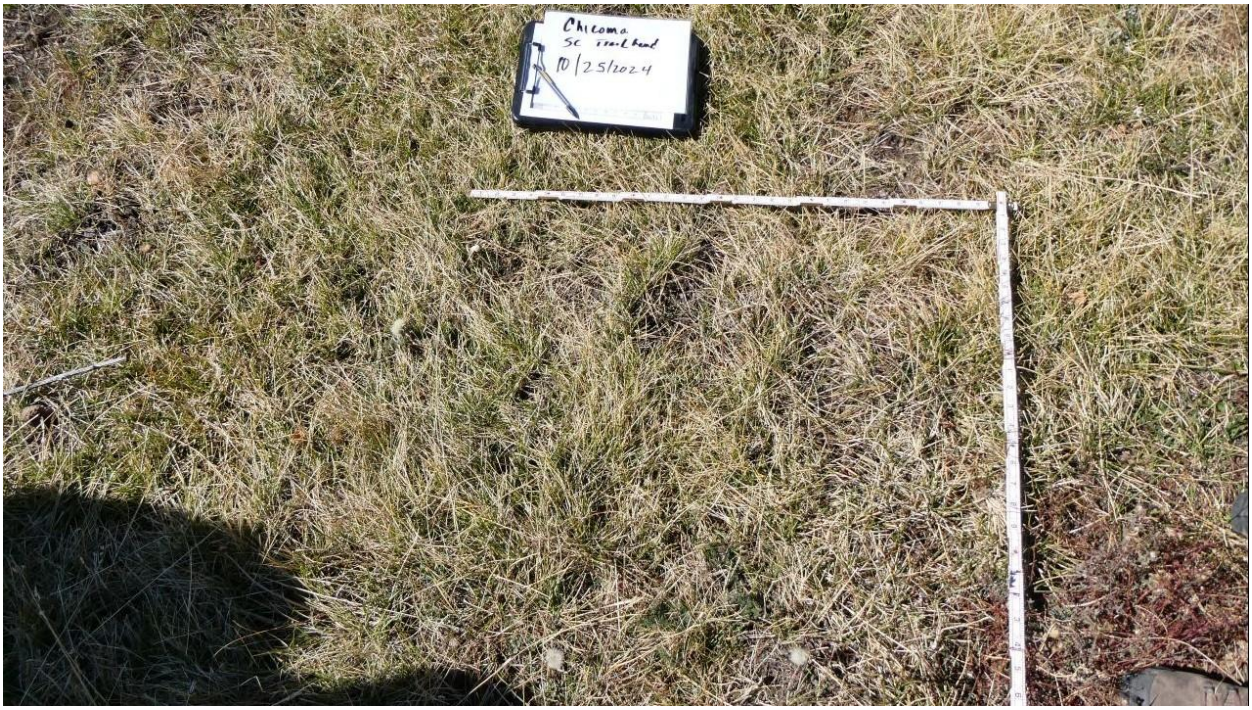
Forage Composition

Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Kentucky Bluegrass	POPR	99	3.8	2.5
Arizona Fescue	FEAR	1	11.0	4
		100	3.9	

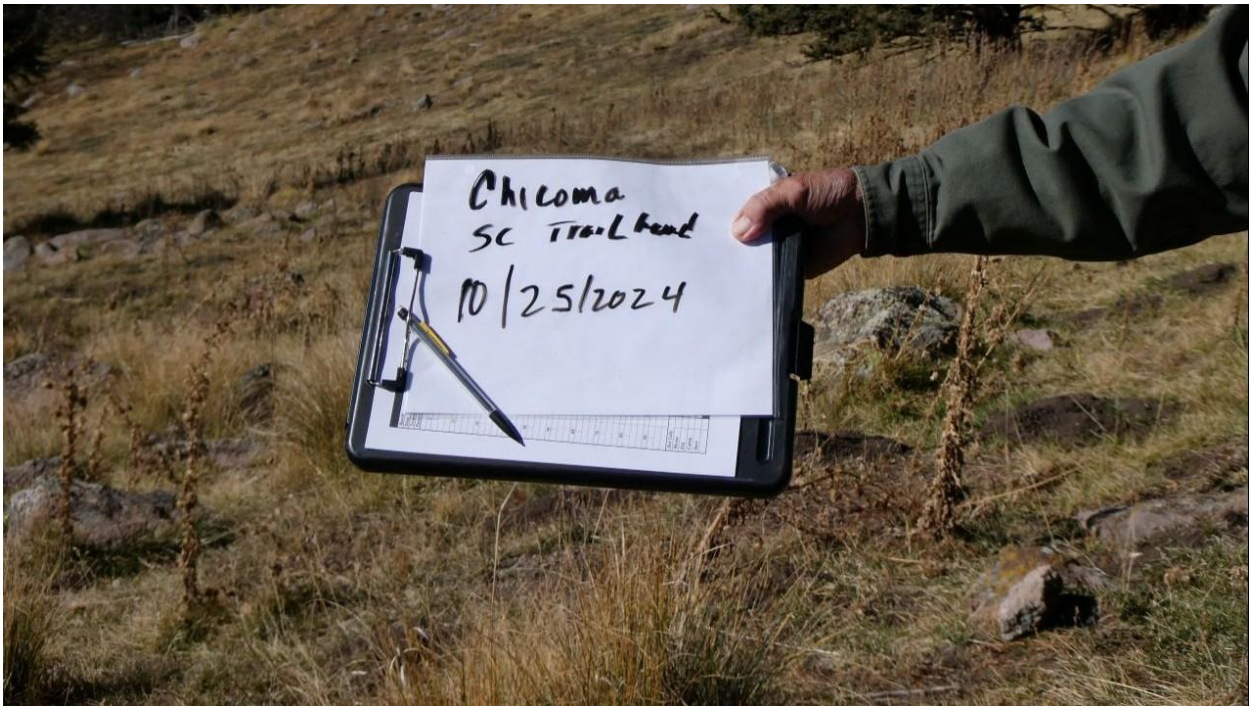
Fecal Counts

Horse	0	Elk	27	Cattle	5	Deer	0

Ground Photo



Landscape Photo



RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**Jarosito**	
Date:	**10/25/2024**	**Collector Names:**	**NNMSA**	
Transect Number:	**2**	**GPS Coordinates:**	**36.02981, -106.44803**	**(338°)**

Notes:

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
324.4 ± 116.3 lbs per acre	3466 acres	2013.2 AUM	1132.7 ± 410 lbs per acre

Percent Cover

Bare Ground	5
Litter	26
Vegetation	68
Rock (>3/4")	1
	100

Vegetation Cover - Grasses

Common Name	*Symbol*	*Percent*
Kentucky Bluegrass	POPR	52
Sedge	Carex	2
		54

Other Vegetation Cover

Common Name	*Percent*
Clover spp.	14
	14

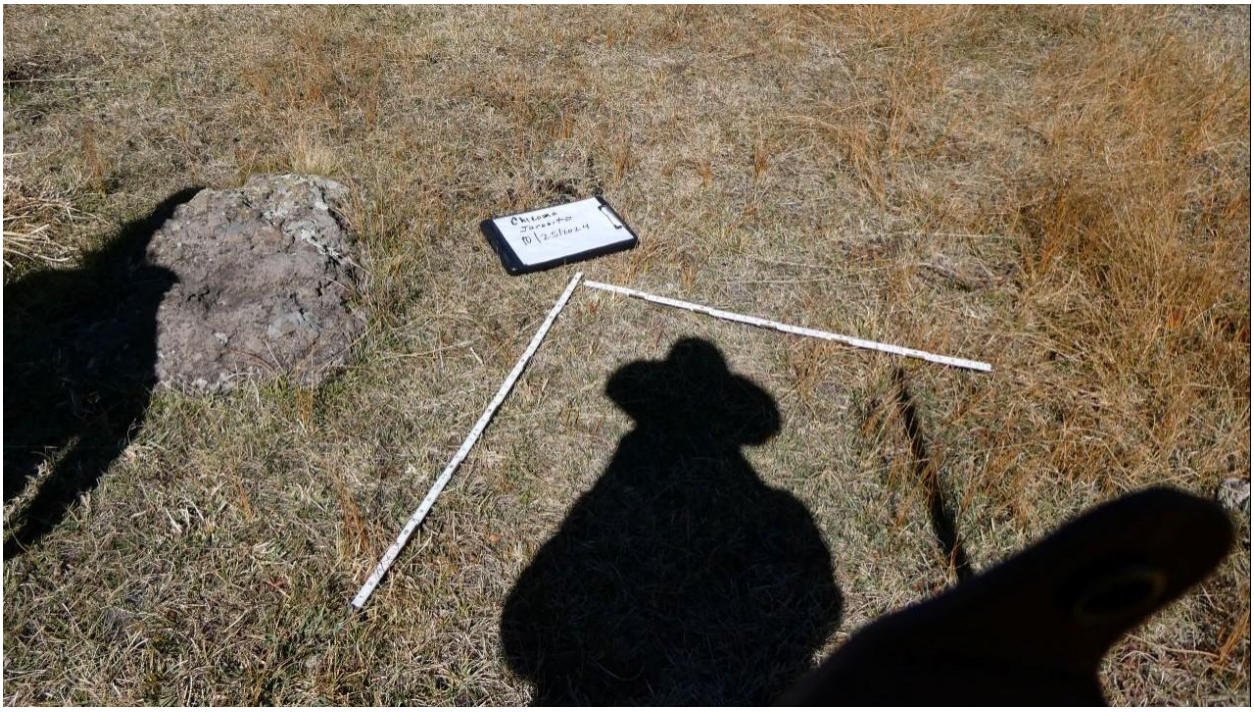
Forage Composition

Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*	
Kentucky Bluegrass	POPR	96	1.5	2.5	Below Minimum Height
Sedge	Carex	4	2.5	1.5	
		100	1.6		

Fecal Counts

Horse	0	Elk	31	Cattle	7	Deer	0	

Ground Photo



Landscape Photo

RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**Cienega Redonda**	
Date:	**10/25/2024**	**Collector Names:**	**NNMSA**	
Transect Number:	**1**	**GPS Coordinates:**	**36.03331, -106.47667**	**(334°)**

Notes:

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
904.6 ± 323.7 lbs per acre	3466 acres	1471.1 AUM	827.7 ± 80 lbs per acre

Percent Cover

Bare Ground	1
Litter	44
Vegetation	55
Rock (>3/4")	0
	100

Vegetation Cover - Grasses

Common Name	*Symbol*	*Percent*
Kentucky Bluegrass	POPR	39
West. Wheatgrass	AGSM	6
Sedge	Carex	5
Interm. Wheatgrass	AGIN	1
		51

Other Vegetation Cover

Common Name	*Percent*
Forb Unknown	4
	4

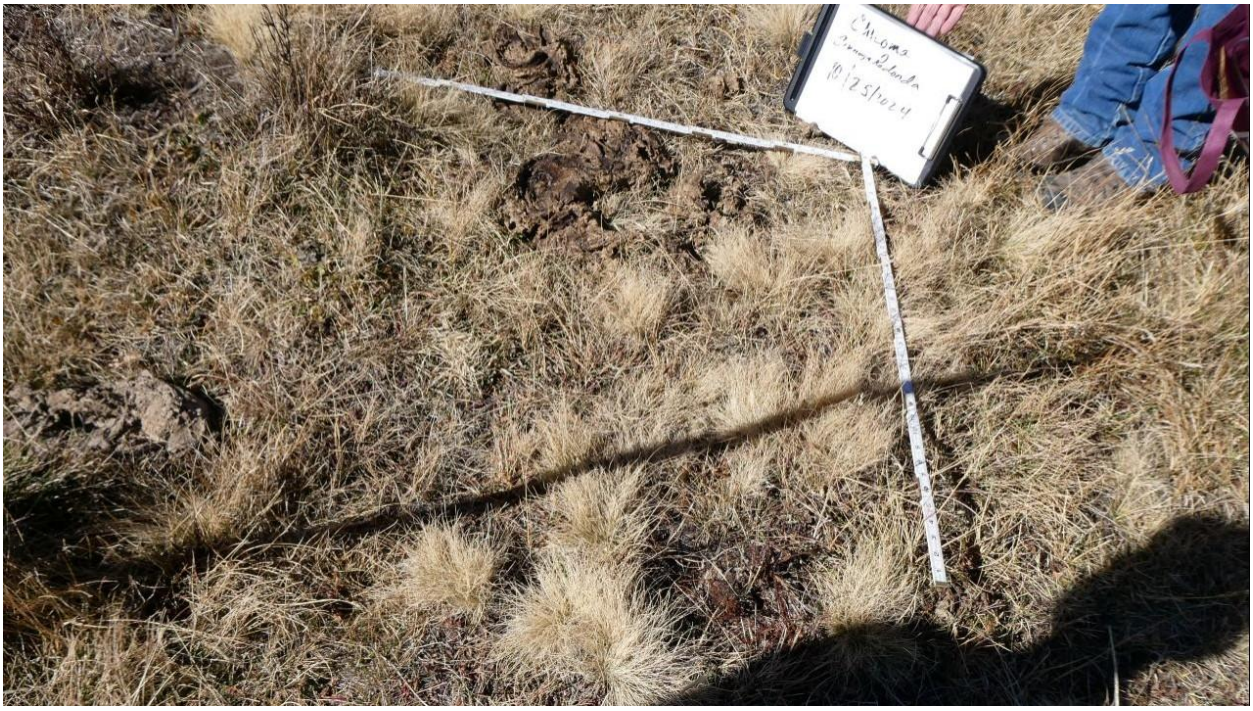
Forage Composition

Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Kentucky Bluegrass	POPR	77	2.6	2.5
West. Wheatgrass	AGSM	12	2.9	2.5
Sedge	Carex	10	3.7	1.5
Interm. Wheatgrass	AGIN	1	19.0	4
		100	2.9	

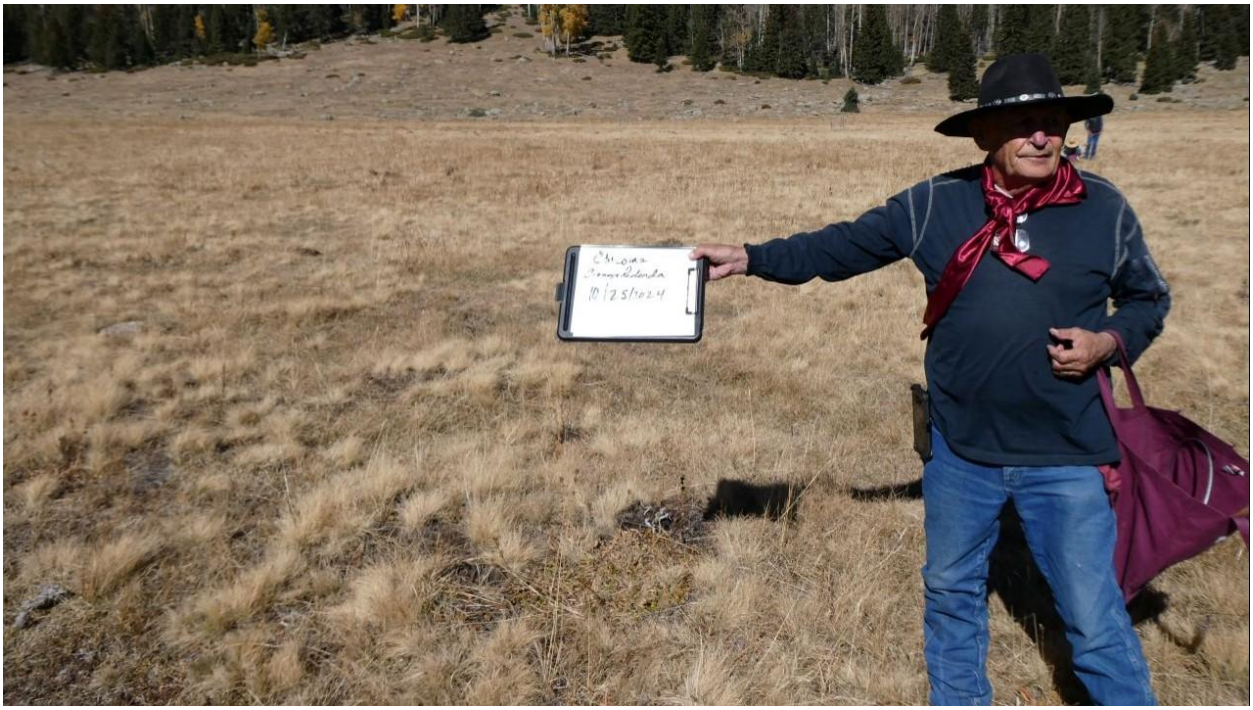
Fecal Counts

Horse	0	Elk	4	Cattle	6	Deer	1

Ground Photo



Landscape Photo



RaDAR - Rangeland Data Analysis & Record

Producer Name:	**Chicoma**	**Pasture Name:**	**n/a**	
Date:	**10/25/2024**	**Collector Names:**	**n/a**	
Transect AVERAGES	**1,2,3,4,5**	**GPS Coordinates:**	**n/a**	**n/a**

Notes: **AVERAGES**

Biomass Availability	**Pasture Size**	**Estimated Stocking Rate**	**Annual Forage Production**
676.8 ± 191.9 lbs per acre	3466 acres	2298.6 AUM	1293.2 ± 253.7 lbs per acre

Percent Cover		**Vegetation Cover - Grasses**			**Other Vegetation Cover**	
Bare Ground	3.7	*Common Name*	*Symbol*	*Percent*	*Common Name*	*Percent*
Litter	37.7	Kentucky Bluegrass	POPR	39	Clover spp.	8
Vegetation	52.3	Sedge	Carex	2	Forb Unknown	1
Rock (>3/4")	6.3	West. Wheatgrass	AGSM	2	Iris spp.	
		Interm. Wheatgrass	AGIN	0		
	100			43		9

Forage Composition

Common Name	*Symbol*	*Percent*	*Avg. Height (inches)*	*Minimum Stubble Height Guidline*
Kentucky Bluegrass	POPR	91	2.7	2.5
Sedge	Carex	5	3.3	1.5
West. Wheatgrass	AGSM	4	2.9	2.5
Interm. Wheatgrass	AGIN	0	19.0	4
Arizona Fescue	FEAR	0	11.0	4
		100	2.79 ± 0.14	

Fecal Counts

Horse	0	Elk	62	Cattle	18	Deer	1		0

Table 1. Allotment summary and operational conditions based on US Forest Service Environmental Assessment.

	Total Allotment Acres	Grazable Acres	†Adjusted Grazable Acres	Allotment Elevation (feet)	Permitted Livestock (AUE)	Grazing Duration (days)	Entry Date	Exit Date
Chicoma	8188	3218	4267	9800 to 11500	157	150	Jun 01	Oct 31

†adjustments to grazable acres based on 2024 GIS assessment provided by US Forest Service; AUE = Animal Unit Equivalent.

Table 2. Allotment Production and Use for 2024 grazing season (mean ± standard error).

	Mid-Year Biomass (lbs/acre)	Year-End Biomass (lbs/acre)	Annual Production (lbs/acre)	Utilization as a Percent[1]
SC Trailhead	2530.8 ± 729.7	801.4 ± 469.7	1919.3 ± 320.0	58.2
Jarosito Cienega	710.6 ± 45.8	324.4 ± 116.3	1132.7 ± 410.0	71.4
Redonda	1497.6 ± 234.3	904.6 ± 323.7	827.7 ± 80.0	0.0
Averages	1579.7 ± 309.6	676.8 ± 191.9	1293.2 ± 253.7	47.7 ± 25.0

$$\frac{(annual\ production - year\ end\ biomass)}{annual\ production} \times 100 = percent\ utilization^{1}$$

Table 3. Chicoma allotment utilization for 2024 grazing season, partitioned use, and expected cow intake based on the Physical Constraint of Intake model for cattle.

*Grazable Acres			
Utilization as a Percent[1]	Cattle Utilization as a Percent[2]	Other Utilization as a Percent	Cow Intake from Observed Utilization (lbs/day)[3]
47.7	14.7	33.0	84.2
†Adjusted Grazable Acres			
47.7	11.1	36.6	111.7

*based on 2008 US Forest Service Environmental Assessment; †based on 2024 GIS assessment provided by US Forest Service.

$$\frac{(annual\ production - year\ end\ biomass)}{annual\ production} \times 100 = percent\ utilization^{1}$$

$$\frac{(animal\ demand \times grazing\ duration \times permitted\ animals)}{(annual\ production \times grazable\ acres)} \times 100 = percent\ utilization^{2}$$

$$\frac{(annual\ production \times grazable\ acres \times observed\ utilization)}{(grazing\ duration \times permitted\ animals} = animal\ demand\ or\ daily\ intake^{3}$$

Chicoma Allotment

2024

Key Area	Date	Amount	Notes	Reported
TH to Santa Clara Pueblo	7/3/2024	7.56	forage pushed down by water	Carlos Salazar
	8/9/2024	0.81		
	10/25/2024	4.19		
		12.56		
Jarosito	7/3/2024	5.85	Running water in stream	Carlos Salazar
	8/9/2024	3.56		
	10/25/2024	5.31		
		14.72		
Cienega Redonda	7/3/2024	4.12	Tanque full	Carlos Salazar
	8/9/2024	2.85		
	10/25/2024	4.67		
		11.64		