



RFTA's Intentional Grazing Project: Goats on the RGT

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Agenda

1. RFTA Corridor Background
2. Challenges, Research, and Goals
3. Goats
4. Logistics
5. Proof/Results
6. Cost
7. Summary



Background

How did RFTA come to own an old railroad corridor?

- Late 90's, Roaring Fork Railroad Holding Authority formed and purchased 33 miles, then transferred to RFTA around 2000
- RFTA inherited an ecological disaster...noxious weeds everywhere!
- Cleaned up corridor and built Trail, completed in 2008
- Railbanked for future...rail with trail?

- Predecessors started with herbicide
 - I did the same for a few years before taking a step back...
 - what is the root of the problem?
- Every piece of land is different and they all come with challenges

Challenges & Research

- Challenges
 - Property is very linear, rough, steep, surrounded by water, and open to the public
 - Inherited weeds and abused soil
 - Chemicals didn't seem to be working, restarts plant succession each treatment
- Research
 - Weeds are a symptom of poor soil/ecosystem health - reason weeds can dominate
 - Spraying chemicals is only killing
 - Need to bring life and balance back
 - Livestock and soil health – tried and true



GOALS

- Public Safety is #1
- I.W.M.P. – coordinated and multi-strategy approach
 - Match the land and community
 - RFTA Plan gives preference to the safest control methods
 - Staff is still working hard with manual and mechanical removals
- Goat Project Goals
 1. Vegetation Management
 2. Soil Health
 3. Education and Outreach



Goats

- Safe and approachable
- Organic and self propelled!
- Accomplishing multiple tasks at the same time!
 - Recycling nutrients on site
 - Aeration (hoof action)
 - Can be applied anytime
 - Moves plant succession forward
 - Stabilize steep slopes
 - Increases soil organic matter (holds more water)
 - Fire mitigation



Logistics

- Hire Professionals
- Establish goals for each piece of land
- Public Outreach
- Portable electric fencing
- Camping/Trailer parking
- Water for animals
- Herding dogs
- Just like other “tools” - multi-year project

• Photo Credit: Linda Scheer



Project Photos



Project Photos



Vegetation Monitoring Program - Results

- During my research, I wasn't able to find studies or reports on the effectiveness of using goats
- Hired 3rd party/consultants to create study
- Good news! goats are moving the needle in the right direction as intended
- Noxious Weed Percentages are down across the board

Table 3. Calculated Noxious Vegetation Composition Transect Data (in Percentage)

	Monitoring Date						
	9/04/2019	6/09/2020	8/13/2020	9/8/2021	9/11/2022	8/11/2023	8/8/2024
Transect 1	26.28	23	19.28	21.57	18	19	17
Transect 2	29.41	31.03	7.69	8.92	6.5	11	14
Transect 3	49.68	58.82	59.18	38.85	31	34	29

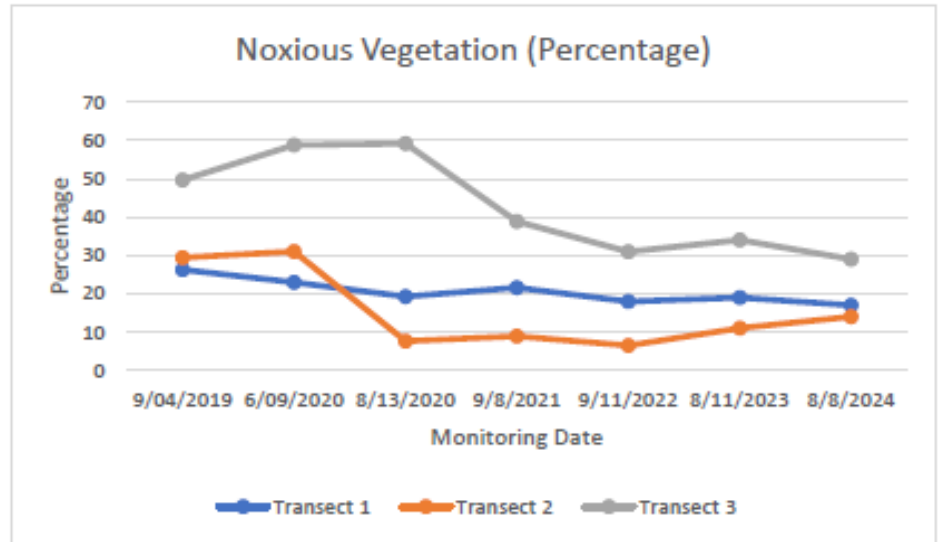


Figure 3: Noxious Vegetation Composition Transect Data.

Vegetation Monitoring Program - Results

- Goats are also putting pressure on annual weeds
- But not to the detriment of the ground cover or native species

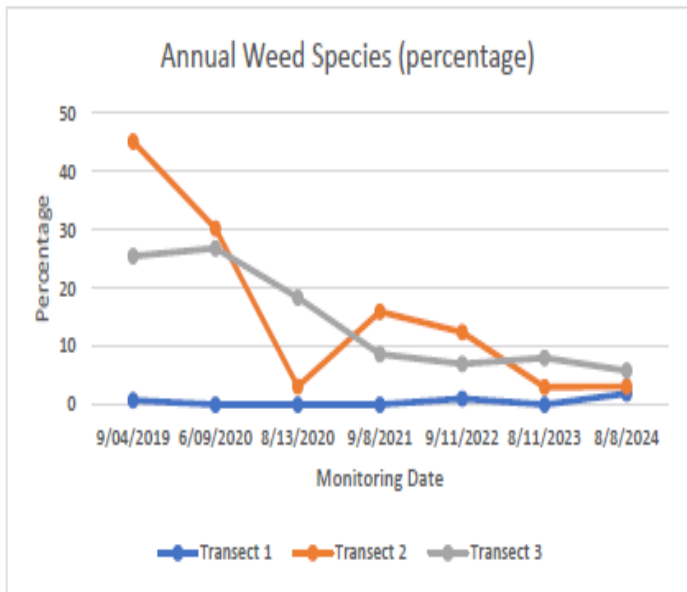


Figure 4: Annual Non-native Weed Species Composition Transect Data

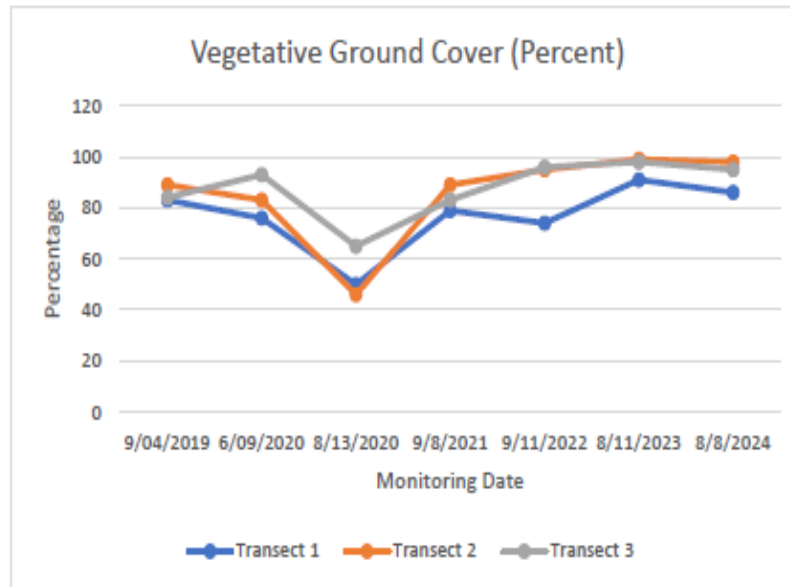


Figure 2: Vegetative Ground Cover Transect Data

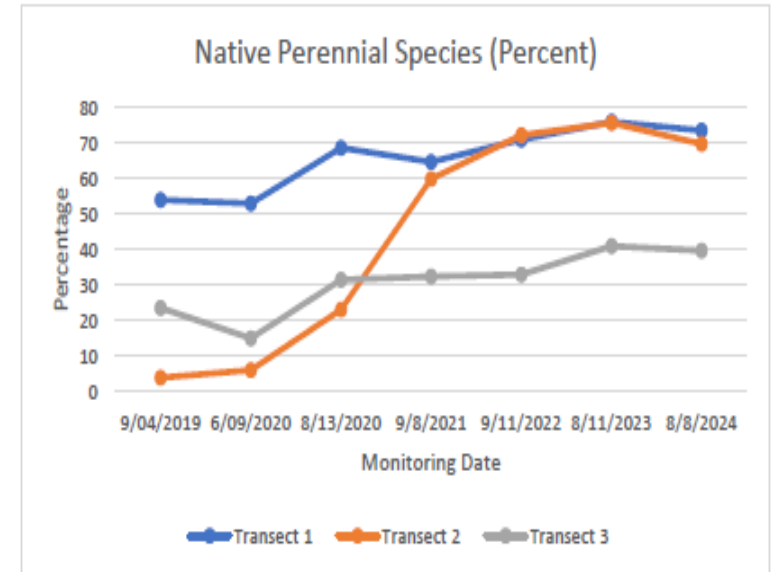


Figure 5: Native Perennial Species Composition Transect Data

Cost Data and Comparison to Conventional Methods

- Goat Project 9 year average
 - Cost per day \$2,045
 - Cost per Acre \$2,519
 - 0.85 acres per day production
- Traditional Vegetation Management
 - 2018 – Local Landscape Co.
 - \$500/acre organic fertilizer
 - \$1,000 per acre organic herbicide (likely need 2-3 applications per year)
 - \$2,500 per day mowing, trimming, aerating (10,000 SF per day) so more like \$10,000 per acre

Goat Project - 9 Year Summary									
9 Year Cost		\$842,252.97							
9 Year Project Length (days)		391							
Year	Cost	Days	Miles	Linear Feet	Square Feet	Acres	Year	Cost per Day	Cost per Acre
2016	\$40,000	30	5.8	30,624	3,062,400	70.30	2016	\$1,333.33	\$568.97
2017	\$49,184	38	2.2	11,616	1,161,600	26.67	2017	\$1,294.31	\$1,844.40
2018	\$89,985	39	5.3	27,984	2,798,400	64.24	2018	\$2,307.30	\$1,400.70
2019	\$74,880	36	2.6	13,728	1,372,800	31.52	2019	\$2,079.99	\$2,375.98
2020	\$60,000	29	1.93	10,190	1,019,040	23.39	2020	\$2,068.97	\$2,564.77
2021	\$82,000	40	1.61	8,501	689,040	15.82	2021	\$2,050.00	\$5,183.91
2022	\$84,158	42	2.21	13,200	1,017,192	23.35	2022	\$2,003.76	\$3,603.96
2023	\$157,384	66	3.41	18,005	1,503,480	34.52	2023	\$2,384.61	\$4,559.85
2024	\$204,663	71	4.22	22,282	1,937,760	44.48	2024	\$2,882.58	\$4,600.73
TOTAL	\$842,253	391	29.28	156,130	14,561,712	334.29	9 years	\$2,044.98	\$2,519.52

Trail User Responses

- Simple question: What are your thoughts on RFTA's Integrated Weed and Vegetation Management program using goats?
 - It is great. Love seeing the goats. Make them permanent!
 - Excellent! If we're using the Rio Grande Trail, we're breathing and I'd prefer not to breathe herbicide!
 - It aligns with my hope that all agencies move away from toxic herbicides and I support it. It's fun to see the goats too!
 - I think it's great! It's great for the soil, it's great for the vegetation and I think it's very important to avoid the use of herbicides.



Summary

- Develop I.W.M.P. that aligns with organization and community values
- No silver bullet and lots of variables
- RGT Crew is still mechanically and manually removing weeds and seeds
- Pros and cons to every tool/approach
- Chemicals do 1 thing very well
- Goats accomplish many things
- Public Perception – how much is good PR worth? Or bad PR?
- True cost analysis, need to evaluate safety too

