Buzz on the Range Project - Multi-Year Monitoring Report

Ranch Location: Keewaydin Ranch
Monitor: Michael DeChellis
Monitoring Period: 2022-2024

Primary Site: 45.90916°N, 109.91717°W
Transect Start: 45.90909°N, 109.91714°W
Transect End: 45.90919°N, 109.91731°W

Key Highlights

Major Achievements (2022-2024)

- **Ecological Health Score:** Improved from -10 (2022) to +60 (2024) - a remarkable 70-point increase!
- **Water Infiltration:** Dramatically improved from >45 minutes (2022) to just 10 seconds (2024) for first test
- **Biodiversity:** New pollinator species established - Clover appeared in transects by 2023
- **Grass Health:** Cool season grasses improved from -5 to +10, warm season grasses from -5 to 0
- **Soil Biology:** Microfauna score improved from -5 to +5, indicating healthier soil ecosystem
- **Forbs & Legumes:** Dramatic improvement from 0 to +10, showing increased plant diversity

Summary

This multi-year report tracks the remarkable progress of the Buzz on the Range project at Keewaydin Ranch from 2022 to 2024. The monitoring demonstrates significant ecological improvements following the implementation of the seed-through-cattle distribution method. The project has achieved substantial gains in soil health, water infiltration, plant diversity, and overall ecosystem function.

The monitoring includes:

- Ecological Health Evaluation using the Savory Short Term Monitoring methodology
- Water Infiltration Tests showing soil structure improvements
- Plant Species inventory documenting biodiversity changes
- Detailed photographic documentation of site evolution

Ecological Health Evaluation - Three Year Comparison

Methodology

This methodology looks at several indicators and scores them based on clear subjective guidelines. The guidelines are intended to be interpreted in line with the site potential, which is dependent on the ecoregion that the evaluation is taking place. **High scores are generally difficult to attain. Low scores represent sites with significant room for improvement.** These indicators are generally a good clue into soil health.

Score Comparison

Parameter	Sept 9, 2022	Oct 18, 2023	Oct 16, 2024	3-Year Trend
Live Canopy	0	5	5	↑ +5
Microfauna	-5	-5	5	↑ +10
FG 1 Warm Season Grasses	-5	0	0	↑ +5
FG 2 Cool Season Grasses	-5	0	10	↑ +15
FG 3 Forbs & Legumes	0	0	10	↑ +10
FG 4 Trees & Shrubs	-10	-10	-10	→ 0
Contextually Desirable Rare Species	0	0	0	→ 0
Contextually Undesirable Species	-5	-5	0	↑ +5
Litter Abundance	5	5	5	→ 0
Litter Incorporation	5	0	5	→ 0
Dung Decomposition	0	5	10	↑ +10
Bare Soil	10	10	20	↑ +10
Capping	0	0	0	→ 0
Wind Erosion	0	0	0	→ 0
Water Erosion	0	0	0	→ 0
TOTAL	**-10**	**5**	**60**	**↑ +70**

Site Photos by Year

2022

Downward View - Sept 9, 2022

45 Degree Angle - Sept 9, 2022

Horizontal View - Sept 9, 2022

2023

Downward View - Oct 18, 2023

45 Degree Angle - Oct 18, 2023

Horizontal View - Oct 18, 2023

2024

Downward View - Oct 16, 2024

45 Degree Angle - Oct 16, 2024

Horizontal View - Oct 16, 2024

Water Infiltration Test Results

Methodology

- 5 inch diameter cylinder 6 inches tall with scribe line at 3 inches
- 308 ccs (mL) of distilled water to simulate 1" rain with 5 inch diameter cylinder
- Tested twice in same location

Results Comparison

2022	2023	2024
7:27	45:00	0:10
First Test	First Test	First Test
>45:00	>1:34:00	8:00
Second Test	Second Test (stopped)	Second Test

Note on 2023 Results: The significantly longer infiltration times in 2023 were likely due to ground saturation from recent precipitation events. The dramatic improvement in 2024 demonstrates the cumulative positive effects of improved soil structure, increased organic matter, and enhanced biological activity.

Test Photos

Measuring and Adding Water

Test in Progress

Plant Species Inventory

Methodology

An inventory of the species along a transect was taken using the pin method that is used in Savory Long Term Monitoring transects.

1. A 75 foot transect was established with 2 stakes and a measuring tape
2. A long thin pin with a flag was dropped through the field forage and plants (Similar to a utility marking pin)
3. A count of all plant species that touched the pin was taken

IMPORTANT NOTE: Species identification is tricky depending on lifecycle and experience of the monitor. To get this right, detailed photos were taken onsite of all species encountered.

Species Reference

1. Brome

2. Vetch

3. Bindweed

4. Dandelion

5. Alfalfa

6. Western Wheatgrass

7. Herb Sophia

8. Crested Wheatgrass

Clover

9. Clover
(New in 2023!)

Transect Count Data - Sept 9, 2022

Site (ft)	1 Brome	2 Vetch	3 Bindweed	4 Dandelion	5 Alfalfa	6 W. Wheatgrass	7 Herb Sophia	8 C. Wheatgrass
5	3	3						
10	4		1					
15	4			1				
20	None living							
25	2				1			
30						2	1	
35	2							
40		1		1	1	2		
45	4					4		
50						4		
55	2			1		1		1
60	1					4		
65	3			1				
70	2							3
75	4			1				2

Transect Count Data - Oct 18, 2023

Site (ft)	1 Brome	2 Vetch	3 Bindweed	4 Dandelion	5 Alfalfa	6 W. Wheatgrass	7 Herb Sophia	8 C. Wheatgrass	9 Clover
5	7								
10	3								
15	1		1						
20	3		1						
25	3	1	1						2
30	3	2							
35	3		1	1	2				
40	1	1	1						
45	3								
50	3								

Transect Count Data - Oct 16, 2024

Site (ft)	1 Brome	2 Vetch	3 Bindweed	4 Dandelion	5 Alfalfa	6 W. Wheatgrass	7 Herb Sophia	8 C. Wheatgrass	9 Clover
5	1					1			
10	1					1			
15	2				2				
20	1								
25	2								1
30	3								
35	3								
40	3						1		
45	3								
50	1					1			

Species Diversity Notes:

- Clover (Species 9) first appeared in the 2023 transect, indicating possible successful establishment of pollinator-friendly species from the Buzz on the Range seed mix (we couldn't identify the type of clover)
- Bindweed presence decreased significantly by 2024
- Alfalfa presence increased in 2023-2024
- Overall species diversity and distribution improved throughout the monitoring period

Transect Photos

2022 Transect Line

2023 Transect Line

Other Observations

Buzz on the Range Pollinator Species

2022: No evidence of our species of four seed which makes it particularly interesting if they come up in later growing seasons.

2023: First appearance of clover in the transect data, indicating successful germination and establishment of at least one species from the seed mix distributed through cattle.

2024: Continued presence of clover and overall improvement in forb and legume diversity, with the FG 3 (Forbs & Legumes) score improving from 0 to 10.

Feeding Protocol Evidence

The cows have been successfully feeding on the Buzz on the Range seed mix with ample evidence of the seed in the manure. This distribution method may have proven effective as demonstrated by the establishment of new clover species. The overall ecological improvements have been noteworthy.

Seed Mixed in Mineral Supplement

Evidence of Seed in Manure

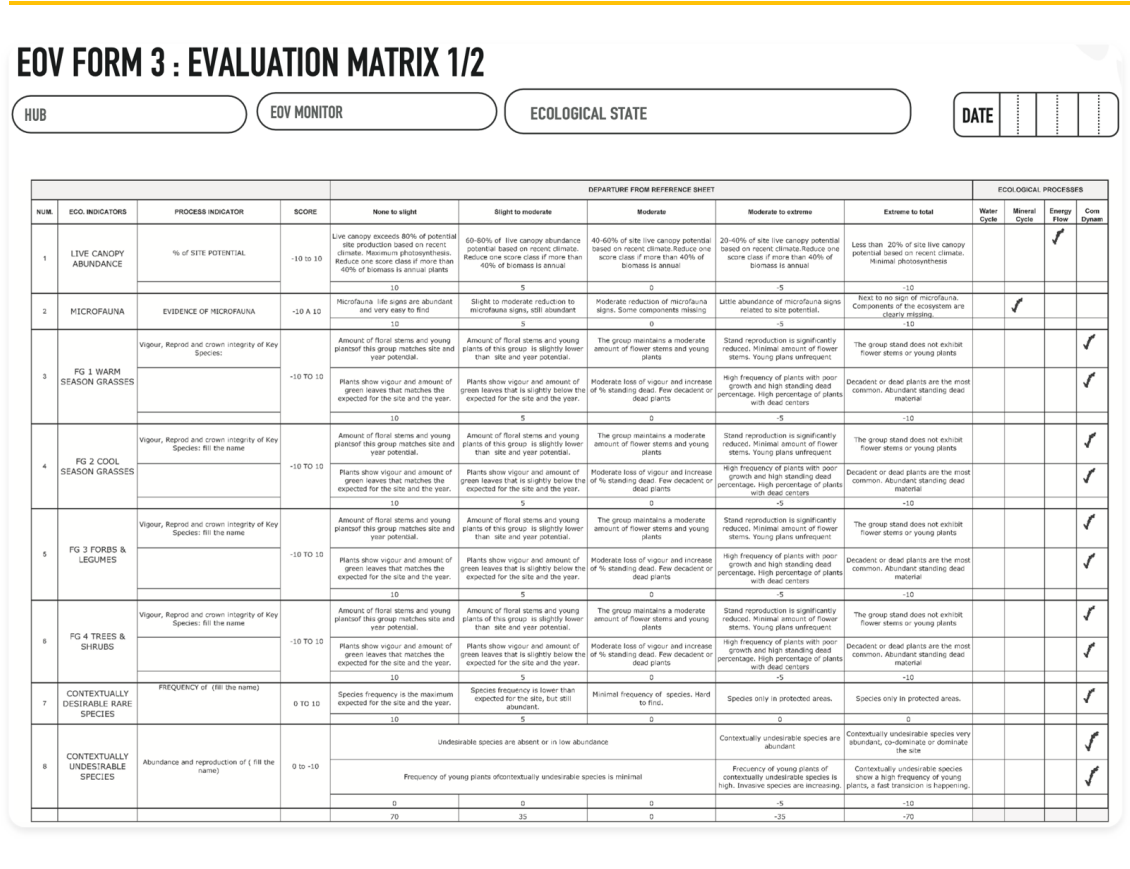
Conclusions

The Buzz on the Range project at Keewaydin Ranch has demonstrated success over the three-year monitoring period.

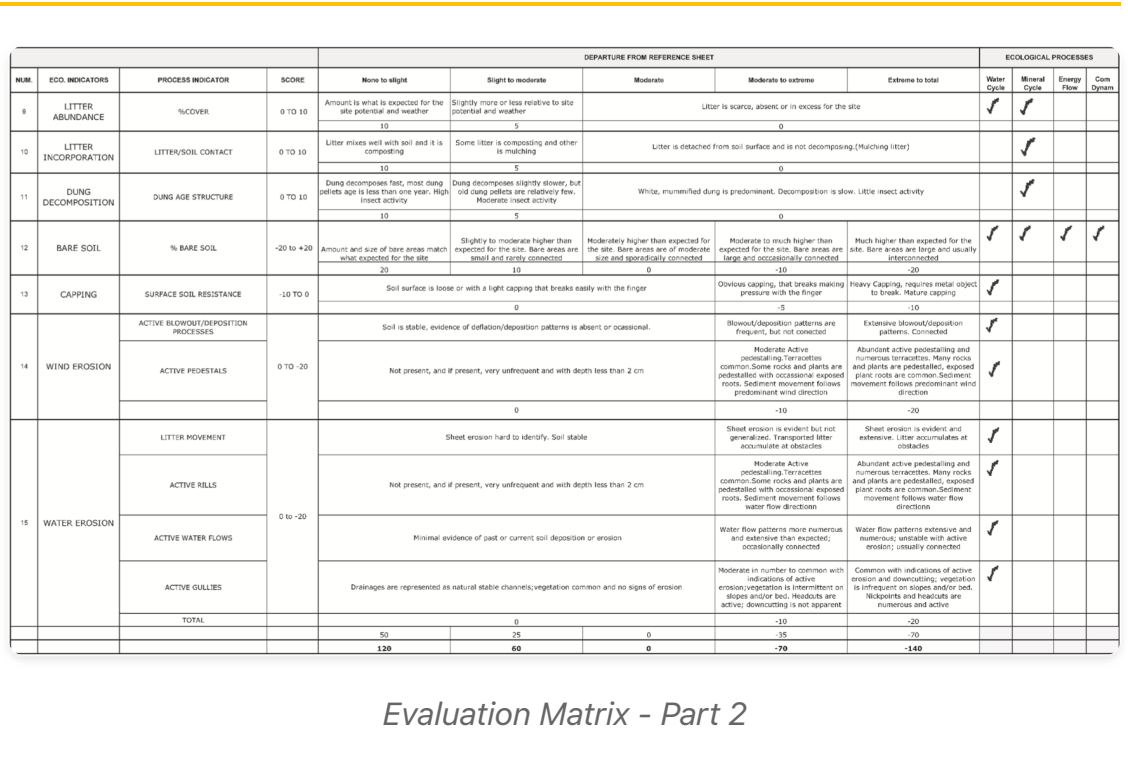
- **Soil health improvement** - evidenced by the 70-point increase in ecological health scores
- **Enhanced water infiltration** - improving from over 45 minutes to just 10 seconds, indicating better soil structure and biological activity
- **Increased biodiversity** - with new pollinator species establishing and overall plant diversity improving
- **Improved ecosystem function** - better nutrient cycling (dung decomposition), increased microfauna, and reduced bare soil

The project demonstrates that regenerative grazing practices combined with strategic seed distribution can rapidly improve rangeland health while supporting pollinator populations. The continued monitoring will be valuable to track long-term establishment of the seeded species and ongoing ecosystem improvements.

Appendix 1: Savory EOV Evaluation Matrix


EOV FORM 3 : EVALUATION MATRIX 1/2

Evaluation Matrix - Part 1


Evaluation Matrix - Part 2