



Buzz on the Range Project Monitoring Report

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Grazing Paddock
Michael DeChellis
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Summary

This is a report supporting the Buzz on the Range project. The monitoring detailed here includes:

- Ecological Health Evaluation using the Savory Short Term Monitoring methodology
- Water Infiltration Test
- Plant Species inventory on a transect
- Detailed photos and other observations

Ecological Health Evaluation

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 Sheet Definitions

Please see Appendix 1: Savory EOVS Evaluation Matrix

Scores for this Site

Parameter	Score
Live Canopy	0
Microfauna	0
FG 1 Warm Season Grasses	5
FG 2 Cool Season Grasses	5
FG 3 Forbs & Legumes	5
FG 4 Trees & Shrubs	5
Contextually Desirable Rare Species	0
Contextually Undesirable Species	0
Litter Abundance	0
Litter Incorporation	0
Dung Decomposition	0
Bare Soil	0
Capping	0
Wind Erosion	0



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Parameter	Score
Water Erosion	0
Total	20

Photos



Figure 1 - Ecological Eval Site Down



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Figure 2 - Ecological Eval Site 45 degrees



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Figure 3 - Ecological Eval Site Horizontal

Water Infiltration Test

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

First test took 7 minutes 10 seconds to infiltrate

Second test took 12 minutes

Photos



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Figure 4 - Measuring and Infiltrating Water

Plant Species Inventory on a Transect

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. If you suspect an error in a species identification, kindly provide that feedback. Together we can do this!



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Count Results

Site (ft) / Species	1 Broam	2 Red Fescue	3	4 Bermudagrass	5	6 Thistle
5	5	5				
10	2		2			
15	2	3				
20	1					
25		2		1		
30					2	
35	3	3			1	1
40	6					
45	2	2				
50	1			1		
55	4	2		2		
60	6					
65	6					
70	1				2	
75	5	2				

Species Inventory

The following document the species found.



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Species Number / Name (if known)	Photo
1 / Broam	



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Species Number / Name (if known)	Photo
2 / Highland Rush or Red Fescue	



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Species Number / Name (if known)	Photo
3 /	



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Species Number / Name (if known)	Photo
4 / Bermudagrass	



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Species Number / Name (if known)	Photo
5 / Gypsy Flower or Comfrey	



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Species Number / Name (if known)	Photo
6 / Thistle	



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Transect Photos



Figure 5 - A photo of the transect line

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Figure 6 - Transect End

Other Observations

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No evidence of Buzz on the Range pollinator promoting species

Even outside of the transect, this pasture had no ready evidence of our species of four seed which makes it particular interesting if they come up in later growing seasons.

Other bush species of note

The ecological health of this pasture is really quite impressive though it could improve some with less bare ground, etc. The small bushes everywhere resembled Aspen.



Figure 7 - Noteworthy Bushes around Monitoring Site



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Appendix 1: Savory EOVS Evaluation Matrix

EOV FORM 3 : EVALUATION MATRIX 1/2

HUB: _____ EOVS MONITOR: _____ ECOLOGICAL STATE: _____ DATE: _____

NUM	ECO INDICATORS	PROCESS INDICATOR	SCORE	None to slight	Slight to moderate	Moderate	Moderate to extreme	Extreme to total	Yearly Cycle	Mid-year Cycle	Early Fall Cycle	Yearly Cycle
1	LIVE CANOPY ABUNDANCE	% of SITE POTENTIAL	-10 to 10	Live canopy exceeds 80% of potential (site production based on recent observations). Reduce one score class if more than 40% of biomass is annual plants.	60-80% of live canopy abundance potential based on recent observations. Reduce one score class if more than 40% of biomass is annual plants.	40-60% of the live canopy abundance potential based on recent observations. Reduce one score class if more than 40% of biomass is annual plants.	20-40% of the live canopy abundance potential based on recent observations. Reduce one score class if more than 40% of biomass is annual plants.	Less than 20% of site live canopy potential based on recent observations. Minimal abundance.				
2	MICROFAUNA	EVIDENCE OF MICROFAUNA	-10 A 10	Microfauna life signs are abundant and very easy to find.	Slight to moderate reduction in microfauna signs, still abundant.	Moderate reduction of microfauna signs. Some components missing.	Little abundance of microfauna signs related to site potential.	Next to no sign of microfauna. Complete denitrification.				
3	FG 1 WARM SEASON GRASSES	FG 1 WARM SEASON GRASSES	-10 TO 10	Plants show vigor and amount of green leaves that matches the expected for the site and the year.	Plants show vigor and amount of green leaves that is slightly below the expected for the site and the year.	Moderate loss of vigor and increase of % standing dead leaf biomass.	High frequency of plants with poor growth and high standing dead percentage. High percentage of plants with dead centers.	Deciduous or dead plants are the most common. Abundant standing dead material.				
4	FG 2 COOL SEASON GRASSES	FG 2 COOL SEASON GRASSES	-10 TO 10	Amount of floral stems and young plants of this group matches site and year potential.	Amount of floral stems and young plants of this group is slightly lower than site and year potential.	The group maintains a moderate amount of floral stems and young plants.	Stand reproduction is significantly reduced. Minimal amount of flower stems. Young plants infrequent.	The group stands does not exhibit flower stems or young plants.				
5	FG 3 FORBS & LEGUMES	FG 3 FORBS & LEGUMES	-10 TO 10	Plants show vigor and amount of green leaves that matches the expected for the site and the year.	Plants show vigor and amount of green leaves that is slightly below the expected for the site and the year.	Moderate loss of vigor and increase of % standing dead leaf biomass.	High frequency of plants with poor growth and high standing dead percentage. High percentage of plants with dead centers.	Deciduous or dead plants are the most common. Abundant standing dead material.				
6	FG 4 TREES & SHRUBS	FG 4 TREES & SHRUBS	-10 TO 10	Amount of floral stems and young plants of this group matches site and year potential.	Amount of floral stems and young plants of this group is slightly lower than site and year potential.	The group maintains a moderate amount of floral stems and young plants.	Stand reproduction is significantly reduced. Minimal amount of flower stems. Young plants infrequent.	The group stands does not exhibit flower stems or young plants.				
7	CONTEXTUALLY DISIRABLE RARE SPECIES	FREQUENCY OF (fill the name)	0 TO 10	Species frequency is the maximum expected for the site and the year.	Species frequency is lower than expected for the site and the year.	Minimal frequency of species. Hard to find.	Species only in protected areas.	Species only in protected areas.				
8	CONTEXTUALLY UNDESIRABLE SPECIES	Abundance and reproduction of (fill the name)	0 to -10	Frequency of young plants (contextually undesirable species) is minimal.	Frequency of young plants (contextually undesirable species) is minimal.	Frequency of young plants (contextually undesirable species) is minimal.	Frequency of young plants (contextually undesirable species) is increasing.	Contextually undesirable species are abundant, competitive or dominant on the site.				

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NUM	ECO INDICATORS	PROCESS INDICATOR	SCORE	DEPARTURE FROM REFERENCE SHEET				ECOLOGICAL PROCESSES					
				None to slight	Slight to moderate	Moderate	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
8	LITTER ABUNDANCE	%COVER	0 TO 10	Amount is what is expected for the site potential and weather	Slightly more or less relative to site potential and weather	Litter is scarce, absent or in excess for the site	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
10	LITTER INCORPORATION	LITTER/SOIL CONTACT	0 TO 10	Litter mixes well with soil and it is composting	Some litter is composting and other is mulching	Litter is detached from soil surface and is not decomposing (blowing litter)	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
11	DUNG DECOMPOSITION	DUNG AGE STRUCTURE	0 TO 10	Dung decomposes fast, most dung pellets age is less than one year. High insect activity	Dung decomposes slightly slower, but old dung pellets are relatively few. Moderate insect activity	Whisk, mummified dung is predominant. Decomposition is slow. Little insect activity	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
12	BARE SOIL	% BARE SOIL	-20 to +20	Amount and size of bare areas match what expected for the site	Slightly to moderate higher than expected for the site. Bare areas are small and rarely connected	Moderate to much higher than expected for the site. Bare areas are large and occasionally connected	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
13	CAPPING	SURFACE SOIL RESISTANCE	-10 TO 0	Soil surface is loose or with a light capping that breaks easily with the finger	Soil is stable, evidence of deflation/deposition patterns is absent or occasional.	Obvious capping, that breaks making pressure with the finger	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
14	WIND EROSION	ACTIVE BLOWOUT/DEPOSITION PROCESSES	0 TO -20	Not present, and if present, very unrequant and with depth less than 2 cm	Sheet erosion hard to identify. Soil stable	Blowout/deposition patterns are frequent, but not connected	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
15	WATER EROSION	ACTIVE FLOWS	0 to -20	Not present, and if present, very unrequant and with depth less than 2 cm	Minimal evidence of past or current soil deposition or erosion	Moderate Active peddling/terracettes common. Some rocks and plants are peddled. Sediment movement follows predominant wind direction	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
		ACTIVE GULLIES		Drainages are represented as natural stable channels; vegetation common and no sign of erosion		Sheet erosion is evident but not general; Transported litter accumulates at obstacles	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Comm System	
		TOTAL		50	0	25	60	0	0	-10	-35	-70	-140

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