



Rangeland Monitoring Demonstration

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Summary

A range monitoring result demonstration project was established at Rancho Esperanza in September 2006. Two plots, each including a livestock enclosure and photo point, were established in two separate pastures representing different range sites. Photographs and vegetation data are recorded each fall; Data from 2006, 2008, 2009, and 2012 are presented in this progress report.

Objective

Rangeland monitoring is essentially forage monitoring. The sustainability and profitability of any ranching or hunting enterprise depends on the forage resource. Knowledge of plant names, value, and abundance is central to successful and useful monitoring. Cover and composition data allow the rancher to track the influence of weather patterns and grazing management on relative abundance of desirable and undesirable plant species, forage residue, and soil cover. Along with practical experience, the rancher can use this information to develop or modify his or her resource management plan.

Materials and Methods

Photographs and plant species composition and basal cover are recorded each fall. The grazing enclosures are constructed of 4x4 welded wire panels and t-posts. The enclosure is used as a reference point for landscape photos that reveal the influence of management practices on the plant community. The vegetation transects begin at one corner of the enclosures and extend 100 paces.

Formula for percent basal cover:

$$(\text{Number of hits each species, bare ground, litter, or rock} / \text{Total number of points}) * 100$$

Formula for species composition:

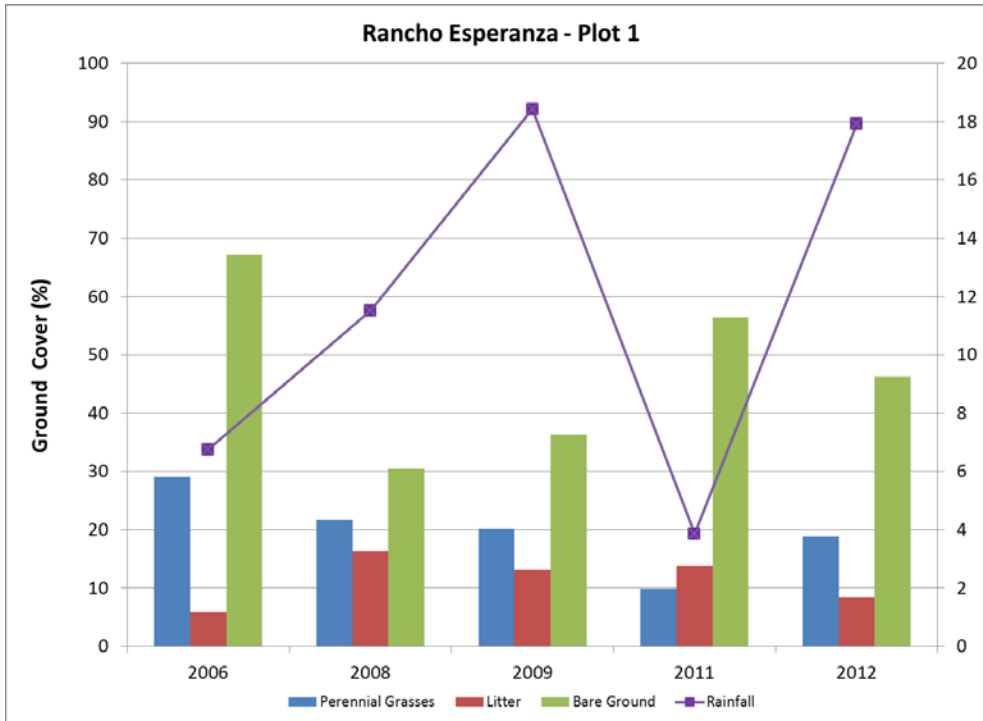
$$(\text{Number of hits each species} / \text{Total number vegetation hits}) * 100$$

Results and Discussion

Perennial grasses at Plot 1 have declined since the plot was established. Bare ground decreased in 2008 due to an abundance of annual forbs. This ranch has had no livestock on it for about 8 years; however, this pasture is near the headquarters and Live Oak draw is near the plot so past grazing pressure was probably high. Often degraded areas will remain so for a long time until some disturbance or improvement results in improved conditions for plant growth.

In 2012, perennial grass cover increased and bare ground decreased (Table 1). Species diversity also increased.

Table 1. Basal cover in monitoring plot#2 Rancho Esperanza, Crockett Co.



Rancho Esperanza Range Monitoring Plot 1



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Fall 2011



Fall 2009



Fall 2008

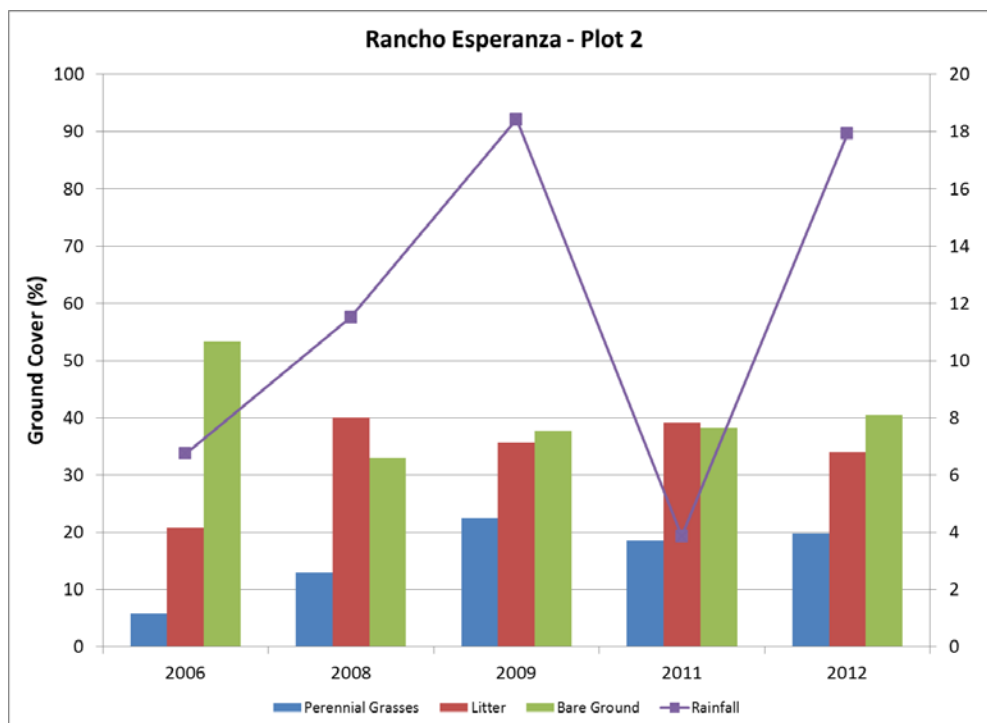


Fall 2006

Conclusions

Although perennial grass cover was lower at plot 2 in the beginning, it increased until 2009 then declined slightly between 2009 and 2011. Litter cover also has increased. In 2006, juniper was selectively removed from this pasture using an excavator. Transect data were collected on the same day the area surrounding the plot was cleared. Despite record drought in 2011, litter and perennial grass cover were similar to 2010, which was a year with normal rainfall. In 2012, litter cover declined while perennial grass cover and bare ground slightly increased (Table 2). Species diversity at this site also was greatest since monitoring began in 2006.

Table 2. Basal cover in monitoring plot#2 Rancho Esperanza, Crockett Co.



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Rancho Esperanza Range Monitoring Plot 2





Fall 2011



Fall 2009



Fall 2008

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Fall 2006

Acknowledgements

This demonstration was hosted by Donny McClure, Rancho Esperanza. Rainfall data was provided by Ken Hartman.