Pasture condition scoring

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Introduction A pasture condition score sheet has been developed for use in the United States. It has rating criteria for key indicators that are used to ascertain if some areas of pasture management could be improved. It can also help evaluate what is causing less than desirable pasture conditions. Pasture condition scoring involves the visual and tactual evaluation of ten indicators that rate a pasture's overall condition. The ten indicators are: percent desirable plants, plant cover, plant diversity, plant residue, plant vigor, percent legume, uniformity of use, livestock concentration areas, soil compaction, and erosion (sheet and rill, gully, streambank and shoreline, and wind). Six causative factors that impact pasture plant growth and vigor are also rated: soil fertility status, soil pH status, severity of use, forage species suitability, episodic climatic conditions, and insect and disease pressure. Regionally, levels of salinity, sodicity, and toxic elements (e.g. aluminum) can also be measured and rated where they commonly affect pasture productivity, stability, and forage species selection. Indicators and causative factors receiving the lowest scores can be focused upon and corrective actions taken as warranted.

Materials and methods Two USDA-NRCS publications, "Guide to Pasture Condition Scoring" (Cosgrove *et al*., 2001) and the "Pasture Condition Score Sheet" (Cosgrove *et al*., 2001), were distributed across the US in 2001. The Guide describes ten indicators and six causative factors vital for assessing pastures while maintaining productivity and environmental viability. The Score Sheet is used to record pasture conditions. Each pasture is rated using the score sheet criteria (Figure 1) and some basic inventory methods. Each indicator's or causative factor's condition is estimated and scored separately on a score sheet using a range of 1 (lowest) to 5 (highest). The indicator scores can be totalled or left as an individual score and compared with the other nine indicators. Causative factors are simply scored individually to see which ones are furthest from the ideal (score of 5). Many of the indicators/causes are simply rated visually. For estimating percent desirable plants, plant diversity, and percent legume in multiple species swards, the Dry-Weight-Rank method is recommended. Soil fertility test results for phosphorus (P), potassium (K), and pH are necessary to rate soil fertility and pH causative factors. Soil compaction is rated by using a soil penetrometer or simple probe to compare soil strength between fenceline and treaded areas. Some indicators and causative factors are rated highest at some moderate level considered optimal (e.g. 4 to 5 forage species from at least two major functional groups will score higher for plant diversity than a near monoculture or a very diverse species, but from one dominant functional group, pasture). The same holds true for percent legume, soil test P and K, plant nitrogen status, soil pH, severity of use, and plant residue. Too much or too little of any one of these may not good for the environment, livestock, or the pasture sward.

Farm or Ranch Site:				Date:				
				Pasture unit description				
Indicators				#1	#2	#3	#4	
Percent desirable plants								
Percent plant cover by weight that is desirable forage:								
1	2	3	4	5	4	5	5	3
<20	20-40	40-60	60-80	>80				

Figure 1 First pasture condition indicator showing layout of Pasture Condition Score Sheet with entries

Results By using the pasture condition score sheet over time and keeping the records, trends in decline or improvement can be detected so if need be, any changes in treatment can be done. Consultants, farmers, and various farm service agencies' personnel all can find these two pasture condition documents useful. With a complete inventory of pasture condition, proper remedies to correct the defined problems are more easily found.

Conclusions More definitive work needs to be done on plant diversity's role in pasture productivity. Present plant diversity criteria attempt to define the grazing ideal, but it is based on limited, inconclusive research work.

References

Cosgrove, D., D. Undersander & J. Cropper (2001). Guide to pasture condition scoring. USDA-NRCS Grazing Lands Technology Institute. Washington, District of Columbia.

Cosgrove, D., D. Undersander, and J. Cropper (2001). Pasture condition score sheet. USDA-NRCS Grazing Lands Technology Institute. Washington, District of Columbia.