

## Assessment and monitoring of grazing lands in the northeastern United States

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**Introduction** The Pasture Condition Score System (Cosgrove *et al.*, 2001) was developed as a monitoring and management tool on grazing lands. The system considers 10 indicators of soils, plants, and animals including percent desirable plants, plant cover, plant diversity, plant residue, plant vigor, percent legume, uniformity of use, livestock concentration areas, soil compaction, and soil erosion. The indicators are assigned a score according to detailed criteria and the scores are summed to give an overall score for a pasture, or relevant grazing unit. The score is then interpreted, indicating if some type of management change or treatment is necessary. We tested the Pasture Condition Score system on farms across the northeast USA.

**Materials and methods** We applied the system to 138 pastures on 32 farms across the Northeast. Both beef and dairy farms that used either rotational or continuous stocking were included. On each farm, two to eight pastures in different landscape positions were rated according to the Pasture Condition Score System. Each indicator was scored on a 1 to 5 scale with 1 representing an unacceptable condition and 5 representing the optimum condition. The entire pasture was walked, examined, and the 10 indicators and six causative factors were scored according to the guidelines in Cosgrove *et al.* (2001).

**Results** Across all farms, 44% of the pastures fell into the category of needing only minor changes to management and another 40% fell into the category of needing some improvements (Table 1). At the extremes, we found only a few “perfect” pastures and none fell into the lowest category of “major problems.” There were 14% where the pasture condition score indicated that immediate changes were needed. Examining the indicator scores for the group of pastures with the lowest overall scores, it is clear that plant diversity and percent legume have a large influence on scores along with “uniformity of use” (Table 1). The legume component of these pastures was almost nonexistent and the pastures were typically dominated by one grass species. Uniformity of use was low on these pastures because they were overgrown and there was a great deal of spot grazing. A score of 2 corresponds to 25 to 50% of the area either ungrazed or grazed very little. Other indicators of resource degradation (soil erosion and compaction, livestock concentration areas) were mid-range and were not driving the low scores. This indicates that many of the potential problems on the pastures would be relatively straightforward to resolve.

**Table 1** Distribution of pasture condition scores for 138 pastures surveyed on 32 farms in the northeastern USA along with the scores for the 10 pasture indicators on the lowest scoring pastures in the survey (n=20)

Distribution of pasture condition scores		Scores for indicators on lowest scoring pastures		
Pasture condition score category	% of pastures	Indicator	Average score <sup>#</sup>	
10-15	Major problems	0	% Desirable plants	2.4
16-25	Immediate changes needed	14	Plant Cover	1.9
26-35	Improvements needed	44	Forage diversity	1.6
36-45	Minor changes needed	40	Plant residue	2.0
46-50	No changes needed	2	Plant vigor	3.1
			% Legume	1.1
			Uniformity of use	1.7
			Livestock concentration areas	3.1
			Soil compaction	2.7
			Soil erosion	3.6

<sup>#</sup>An individual indicator score of 1 indicates that major management changes are necessary, whereas a score of 5 indicates that no changes are needed

**Conclusions** Land degradation was not the main cause of poor pasture condition. Data indicated that low forage diversity, lack of legumes, and low uniformity of use, were the driving factors. There is a need for rapid objective methods to quantify this information rather than relying on visual estimates.

### Reference

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