Simplified Assessment of Range Condition

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Rangeland management and land use planning require a system for assessing the health of parcels of land. Range evaluation is essential to assess the effectiveness of implemented practices and to identify the ecological problems in a grassland before its condition becomes seriously degraded. The development of the concepts used in rangeland condition assessment started about 100 years ago with the introduction of the concept of plant succession. Most succeeding methods have based assessment primarily on the condition of the vegetation and soil compared to the degree of difference from a standard. Only recently has the approach changed to base the assessment of the status of rangeland health on the functional levels of the ecological processes and the integrity of the vegetation, the soil, the air, and the water composing the ecosystem.

Several interactive components of a grassland ecosystem should be considered during general condition assessment procedures: the status of the aboveground and belowground vegetation; the status of soil development processes; the status of the levels and types of erosion; the status of ecological processes; and the status of precipitation infiltration. These major ecosystem components vary in degree of performance and level of functional status on grasslands at different health conditions, and the changes can be used as evaluation criteria for ranking range condition categories.

Most range condition assessment methods separate the relative rankings of the performance and health of rangeland ecosystems into four condition categories from extremely healthy to extremely unhealthy. The most commonly used condition category names are excellent, good, fair, and poor.

The four general health condition categories should be used in this preliminary estimated assessment of grasslands based on the producer's previous experience and knowledge of the parcels of land. The four range condition categories can be illustrated by comparison to human health condition. A grassland ecosystem in excellent condition is like a highly trained athlete: highly productive, with all processes functioning at high rates and high efficiency; able to endure considerable stress; and capable of rebounding from stress quickly. A grassland ecosystem in good condition is like a person in average health: productive, with all processes functioning at moderate rates and moderate efficiency; able to endure some stress; and capable of gradual recovery from stress. A grassland ecosystem in fair condition is like a couch potato: marginally productive, with all processes functioning at low rates and reduced efficiency; able to endure only minimal stress; and requiring long periods to recover from stress. A grassland ecosystem in poor condition is like a chronically ill person: unproductive, with all processes functioning ineffectively and inefficiently; unable to endure stress; and capable of recovering from stress only over considerable time and with special treatment.

Each parcel of land in a management plan should be placed into one of the four health condition categories based on the producer's objective observations during the past years of managing it. Only a few parcels of land in the Northern Plains are in the excellent and poor condition categories. Most grasslands are in either the good or fair condition categories. The main separation between good and fair is the relative amount of herbage produced by desirable and less desirable species and the length of time needed to recover from stress.

A report explaining the field methods for the assessment of rangeland health status from monitoring plots located in each pasture is available at *http://www.ag.ndsu.nodak.edu/dickinso/research/2001/range01j.htm*.

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