

Pasture Condition Score Sheet

Purposes

- Evaluate current pasture productivity and the stability of its plant community, soil, and water resources.
- Identify what treatment needs, if any, are required to improve a pasture's productivity and protect soil, water, and air quality.

Suggested uses

This score sheet may be used to rate different pastures in a single growing season or the same pasture over a period of years. Rating a pasture yearly can track trends, either improvement or decline, in its condition. Some indicators change slowly in response to stresses caused by management or climate. Also, some indicators may change as each season progresses. An indicator or causative factor may rank high at one time and low another. Uniformity of use, plant residue, percent legume, severity of use, weather, and insect or disease pressure can vary widely on the same pasture depending on when they are scored during the year and the degree of management the pasture receives. Therefore, it is often wise to score a pasture at different, key times during the year before deciding to make changes in management. Indicate on the form the date the scoring occurred.

Procedure

Step 1—Rate each pasture one by one that is occupied all at the same time by a herd or flock and separated from other pasture areas by portable or fixed fencing. Paddocks in rotational pastures may be rated separately or as a combined unit. It depends on how alike they are. If any indicator looks markedly different from paddock to paddock, it may pay to rate each one separately.

Step 2—Score all 10 indicators regardless of your feelings of their relative worth. To learn or recall how each indicator reflects on how well a pasture is being managed, see *Guide to Pasture Condition Scoring*.

Step 3—Using the attached score sheet and indicator criteria, read the scoring criteria for each of the 10 pasture condition indicators one at a time and rate before moving onto the next. Use the 1 to 5 scale provided. Estimate by eye or measure as precisely as you feel is needed to rate the indicator reliably.

Step 4—When scoring plant vigor, enter a score based on the general criteria given on page 2 using the most limiting trait listed. Use this number to determine the overall pasture score. If the plant vigor score is less than 4, refer to the plant vigor causative factors' criteria on page 6 to identify the plant stress(es) causing reduced vigor. Rate each causative factor independently on the score sheet provided on page 5. Do not average to adjust the original vigor score.

Step 5—When scoring erosion, rate sheet and rill erosion every time. Rate other types of erosion only if present. When present, indicate which one(s) by identifying the erosion type with a unique symbol next to its score. Divide the box as needed to score them separately. Erosion is rated by averaging the individual scores. A need remains to prioritize which erosion problem is controlled first and how.

Step 6—Total the score for each pasture and compare to the following chart. Also, focus on any low scoring individual indicators or causative factors.

Pasture condition score		Management change suggested
Overall	Individual	
45–50	5	No changes in management needed at this time.
35–45	4	Minor changes would enhance, do most beneficial first.
25–35	3	Improvements benefit productivity and/or environment.
15–25	2	Needs immediate management changes, high return likely.
10–15	1	Major effort required in time, management, and expense.

Step 7—When an individual indicator's score falls below a 5, determine its worth to your operation. Then, decide whether to correct the cause or causes for the low rating. If you choose to correct, apply the most suitable management options for your area and operation.

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Indicator	Score				
	1	2	3	4	5
Percent desirable plants	Desirable species < 20% of stand. Annual weeds and/or woody species dominant.	Desirable species 20–40% of stand. Mostly weedy annuals and/or woody species present and expanding. Shade a factor.	40–60% desirable forage species. Undesirable broad-leaf weeds and annual weedy grasses invading. Some woodies.	60–80% of plant community are desirable species. Remainder mostly intermediates and a few undesirables present.	Desirable species exceed 80% of plant community. Scattered intermediates.
Plant cover (Live stems and green leaf cover of all desirable and intermediate species.)	Canopy: < 50% Basal area: < 15% Photosynthetic area very low. Very little plant cover to slow or stop runoff.	Canopy: 50–70% Basal area: 15–25% Photosynthetic area low. Vegetal retardance to runoff low.	Canopy: 70–90% Basal area: 25–35% Most forages grazed close, little leaf area to intercept sunlight. Moderate vegetal retardance.	Canopy: 90–95% Basal area: 35–50% Spot grazed low and high so some loss of photosynthetic potential. Vegetal retardance still high.	Canopy: 95–100% Basal area: >50% Forages maintained in leafy condition for best photosynthetic activity. Very thick stand, slow or no runoff flows.
Plant diversity	One dominant (> 75% of DM wt.) forage species. Or, over 5 forage species (all <20%) from one dominant functional group, not evenly grazed - poorly distributed.	Two to five forage species from one dominant functional (>75% of DM wt.) group. At least one avoided by livestock permitting presence of mature seed stalks. Species in patches.	Three forage species (each ≥ 20% of DM wt.) from one functional group. None avoided. Or, one forage species each from two functional groups, both supply 25–50% of DM wt.	Three to four forage species (each ≥ 20% of DM wt.) with at least one being a legume. Well intermixed, compatible growth habit, and comparable palatability.	Four to five forage species representing three functional groups (each ≥ 20% of DM wt.) with at least one being a legume. Intermixed well, compatible growth habit, and comparable palatability.
Plant residue (Rate ground cover and standing dead forage separately and average score.)	Ground cover: No identifiable residue present on soil surface. Or, heavy thatch evident (> 1 inch). Standing dead forage: >25% of air dry weight.	Ground cover: 1–10% covered with dead leaves or stems. Or, thatch 0.5 inch to 1 inch thick. Standing dead forage: 15–25% of air dry weight.	Ground cover: 10–20% covered with dead residue. Or, slight thatch buildup but < 0.5 inch. Standing dead forage: 5–15% of air dry weight.	Ground cover: 20–30% covered with dead residue. No thatch present. Standing dead forage: some, but < 5% of air dry weight.	Ground cover: 30–70% covered with dead residue, but no thatch buildup. Standing dead forage: none available to grazing animal.
Plant vigor	No recovery after	Recovery after grazing	Recovery after grazing	Recovery after grazing	Rapid recovery

Pasture Condition Score Sheet

Indicator	1	2	Score 3	4	5
Livestock concentration areas	Cover >10% of the pasture; or all convey contaminated runoff directly into water channels.	Livestock conc. areas and trails cover 5–10% of pasture; most close to water channels and drain into them unbuffered.	Isolated livestock conc. areas and trails <5% of area; one close to water channel and drains into it unbuffered.	Some livestock trails and one or two small concentration areas. Buffer areas between them and water channels.	No presence of livestock concentration areas or heavy use areas sited or treated to minimize contaminated runoff.
Soil compaction	Infiltration capacity and surface runoff severely affected by heavy compaction. Excessive livestock traffic killing plants over wide areas. Very hard to push probe into soil without damaging the probe.	Infiltration capacity lowered and surface runoff increased due to large areas of bare ground and dense compaction layer at surface. Livestock trails common throughout. Off-trail hoof prints common. Hard to push probe past compacted layers.	Infiltration capacity lowered and surface runoff increased due to plant cover loss and soil compaction by livestock hooves. Soil resistant to soil probe entry at one or more depths within plow depth.	Infiltration capacity lowered and surface runoff increased due to reduced vegetal cover/retardance. Probe enters soil easily except at rocks. Scattered signs of livestock trails and hoof prints, confined to lanes or small, wet areas.	Infiltration capacity and surface runoff are equal to that expected for an ungrazed meadow; not affected by livestock traffic.
Erosion Sheet and rill	Sheet and rill erosion is active throughout pasture; rills 3–8 inches deep at close intervals and/or grazing terraces are close-spaced with some slope slippage.	Most sheet and rill erosion confined to steepest terrain of unit; well defined rills 0.5–3 inches deep at close intervals and/or grazing terraces present.	Most sheet and rill erosion confined to heavy use areas, especially in loafing areas and water sites; rills 0.5–3 inches deep. Debris fans at downslope edge.	No current formation of rills; some evidence of past rill formation, but are grassed. Scattered debris dams of litter present occasionally.	No evidence of current or past formation of sheet flow or rills.
Rate additional erosion categories below only if present					
Wind	Blowouts or dunes forming or present.	Soil swept from the established pasture being rated causing plant death by burial or abrasion.	Soil swept from adjacent fields or pasture during seedbed prep. and seedling growth to cause pasture plant death by burial or abrasion.	Some vegetative debris windrowed. Some dust deposition from offsite source. Minor wind damage to foliage.	No visible signs of windblown soil or trash. No wind related leaf damage.
Streambank or shoreline	Banks mostly bare and sloughing. No native streambank or shoreline vegetation remaining.	Banks are heavily grazed and trampled all over. Many are actively eroding laterally. Little native streambank or shoreline vegetation. Bank sloughing common.	Banks are close grazed, but few are unstable. Some native streambank or shoreline vegetation remaining. Livestock enter only at specific points, but use heavy. Remote alternative water site present.	Banks are grazed but stable. Mix of pasture plants and native water's edge species. Muddy livestock stream crossing(s) or pond entrance(s) not used heavily. Alternative water sites present.	Banks ungrazed or grazed infrequently. Abundant streambank or shore loving vegetation. Gravelly or constructed stable livestock stream crossing(s) or watering ramp(s). Or, alternative water sources present and close-by.
Gully	Mass movement of soil, rock, plants, and other debris; occurrence of landslides, debris avalanches, slumps and earthflow, creep and debris torrents. Found in mountainous or very hilly terrain.	Gully(s) advancing upslope cutting longer channel(s). Revegetation difficult without using constructed structures & livestock exclusion; continuous gully(s) with many finger-like extensions into the hillside.	Gully(s) present with scattered active erosion, vegetation missing at heavy use slopes and/or on bed below overfalls. New eroding channels present and new overfalls appearing along sides and bed of main channel.	One or more existing stable gullies present, vegetation covers gully bottom and slopes well; no visual signs of active cutting at gully head or sides. Some soil moved in channel bottom.	No gullies; natural drainageways are stable grassed channels. Spring or seep fed bare channels are small and stable, often covered with overhanging vegetation.

Plant Vigor Causative Factors

Factor	1	2	Score 3	4	5
Soil fertility (P & K status) ^{1/}	Very low P & K, or very high P & K.	Low P and K; or low P, very high K; low K, very high P; opt. P, very high K; very high P, opt. K.	Low P, optimum K; or low P, high K; or optimum P, low K; high P, low K; or high P, high K.	Optimum P, high K; or high P, optimum K.	Optimum P and K
(Nitrogen status) ^{2/}	N deficient or excessive.		N marginal or high.		Adequate N.
Upper 4-inch root zone pH ^{3/}	< 4.5 or > 9.0	4.5-5.0 or, 8.5-9.0	5.1-5.5 or, 7.9-8.4	5.6-6.0 or, 7.4-7.8	6.0 to 7.3
Severity of use	All desirable species grazed out. Or no grazing, resulting in thatch and/or stand- ing dead accumulation and woody invasion.	All edible plants grazed to lowest level feasible by the livestock type (mown lawn look). Or, undergrazed - mostly stemmy overgrowth and much dead leaf .	Spot grazing common. Equal amount of close-grazed and little-grazed areas. Close grazed areas are grazed as low as livestock can graze (mown lawn look.)	Some spot grazing, avoided areas prim- arily at dung and urine spots. Closer grazed areas are not grazed below proper height needed for plant vigor.	Forage species grazed within height ranges that promote dense sward and near maximum production.
Site adaptation of desired species	Properly planted and established (desired) species are no longer present.	Properly planted and established (desired) species are nearly gone. Volunteer unwanted species dominate.	One or more properly planted and established, or recruited desired species are missing. Unwanted species invading.	Properly planted and established, or recruited desired species still repre- sented, but not in the desired proportions.	Properly planted and established, or recruited desired species are present in the desired proportions.
Climatic stresses	Brownout from drought. Or, frost heaved plants, most with severed roots and dying. Or, major loss due to submergence or ice sheets.	Wilted plants, little recovery during night. Or, some frost heaved plants, recovery slow. Some spotty stand loss due to sub- mergence or ice sheets.	Wilting during heat of the day. Or, weak plants from winter damage or short-term submergence. Or, freezing damage to foliage.	Dry conditions, but no wilting. Or, above or below normal temperatures slowing growth. Or, slight leaf yellowing due to cold, wet conditions.	No climatic stress.
Insect and/or disease pressure	Severe insect attack, mortality high. Or, disease caused mortality high.	Insect or disease outbreak at eco- nomic threshold, treat now.	Insect or disease outbreak near economic threshold, continue watch and weigh options for treatment.	Some insect and/or disease present, but little impact on forage quality or quantity.	No visible damage.

1/ Names used to describe P & K levels not consistent nationwide; Very high referred to as excessive, and optimum as moderate or medium. Determined by approved soil testing procedures and comparing soil test results for exchangeable P and K with this table.

2/ Determined using chlorophyll meter or plant tissue test and comparing those results with this table.

3/ pH ratings may need to be regionalized to account for soil chemistry differences that influence range of acceptability as soils become more highly weathered or excess salts, exchangeable aluminum, or sodium begin to interfere with forage production. Establish exchangeable aluminum, electrical conductivity, and sodium absorption ratio criteria where their levels in the soil interfere with forage production.

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Farm or ranch site: _____ Date _____

	Pasture Unit Description									
Indicators										
Percent desirable plants^{1/} Percent plant cover by weight that is desirable forage: <div style="display: flex; justify-content: space-around;"> 1 <20 2 20-40 3 40-60 4 60-80 5 >80 </div>										
Plant cover^{1/ 2/} Percent live, leafy canopy cover of desirables and intermediates is: <div style="display: flex; justify-content: space-around;"> 1 <50 2 50-70 3 70-90 4 90-95 5 95-100 </div> Percent live basal area cover of desirables and intermediates is: <div style="display: flex; justify-content: space-around;"> 1 <15 2 15-25 3 25-35 4 35-50 5 >50 </div>										
Plant diversity^{1/} The diversity of well-represented forage species is: <div style="display: flex; justify-content: space-around;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Plant residue^{1/} Ground cover, standing dead forage, or thatch is: <div style="display: flex; justify-content: space-around;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Plant vigor (Read criteria and select appropriate number) Degree of stress of plant community is: <div style="display: flex; justify-content: space-around;"> 1 2 3 4 5 </div> (If less than 4, see Causative factors table. Rate those factors)										
Percent legume^{1/ 3/} Percentage of legume present as total air dry weight: <div style="display: flex; justify-content: space-around;"> 1 <10, or >60 bloating legume 2 10-19, or 40-60 spreading legume 3 20-29 4 30-39 5 40-60 no grass loss </div>										
Uniformity of use Degree of spot grazing is: <div style="display: flex; justify-content: space-around;"> 1 >50% ungrazed 2 25-50% ungrazed 3 10-25% ungrazed 4 Minor species rejection 5 Urine and dung spots ungrazed </div>										
Livestock concentration areas Presence of livestock conc. areas and proximity to surface water: <div style="display: flex; justify-content: space-around;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Soil compaction Degree of soil compaction is: <div style="display: flex; justify-content: space-around;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Erosion (Always rate sheet and rill; others only if present) Sheet and rill, and gully, streambank, shoreline, or wind erosion is: <div style="display: flex; justify-content: space-around;"> 1 Very severe 2 Severe 3 Moderate 4 Slight 5 No visible </div>										
Pasture condition score										

^{1/} Pastureland inventory worksheet helpful.

^{2/} Choose one proper, practical cover type estimation procedure to rate plant cover. The two procedures are not directly comparable.

^{3/} For warm season grass (C4)-legume stands, use the following criteria: 5, 30-40%; 4, 20-29%; 3, 10-19%; 2, 5-9%, and 1 <4%.

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	Pasture Unit Description									
Causative Factors Affecting Plant Vigor										
Soil fertility (P & K status)* Phosphorus and potassium status of the soil are: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Soil fertility (N status)* Nitrogen status of the grasses is: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 3 5 </div> (Read criteria and select appropriate number)										
Soil pH* pH status of the soil for the upper 4-inch root zone best fits: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 2 3 4 5 </div> <div style="display: flex; justify-content: space-around; width: 100%;"> ≤ 4.5, or > 9.0 4.5-5.0, or 8.5-9.0 5.1-5.5, or 7.9-8.4 5.6-6.0, or 7.4-7.8 6.0-7.3 </div>										
Severity of use Degree of forage removal is: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Site adaptation of desired species Presence of planted or desired forage species is: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Climatic stresses Degree of plant stress due to recent weather events is: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										
Insects and disease pressure Degree of plant stress due to insect or disease pressure is: <div style="display: flex; justify-content: space-around; width: 100%;"> 1 2 3 4 5 </div> (Read criteria and select appropriate number)										

* Rate electrical conductivity and sodium adsorption ratios in regions where appropriate. Where excess salts, exchangeable sodium, or exchangeable aluminum hinder plant growth they are the controlling factor rather than soil pH conditions. Use appropriate criteria for them as found in the National Range and Pasture Handbook under Evaluating and rating pastures, Pasture Condition Scoring. See pH criteria below for highly weathered soils.

Soil pH Criteria for Major Landuse Resource Areas with Oxisols and Ultisols

pH status of the soil for the upper 4" rooting zone best fits:

1	2	3	4	5
< 4.0, or > 9.0	4.0-4.5	4.5-5.0	5.1-5.5	5.6-6.2
	or, 7.0-9.0	or, 6.5-7.0	or, 6.2-6.5	

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