



United States
Department of
Agriculture

PASTURELAND ASSESSMENTS IN ALASKA

Using The Pasture Condition Scoresheet

Wasilla, AK

July 25-27, 2018

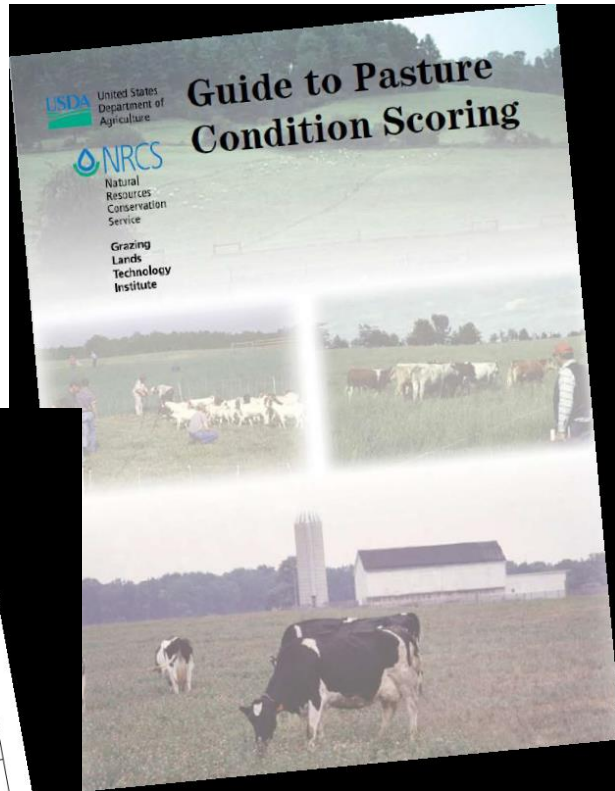
First - soils and ecological sites of the area

Second - talk to the producer

- How do they manage their pasture?
- Are they rotating livestock through separate fields or paddocks?
- How do they decide it's time to move the animals?
- What kind of animals, how many, average weights?
- What are the needs of the animals (fencing, social, space)?
- When do they stop grazing for the season?
- What kinds of problems or challenges are they having?
- What do they want their pastures to look like?
- Are they supplemental feeding, and if so with what and how much?
- What is the history of the pastures?
- What is the primary purpose of the pasture? Forage, exercise, aesthetics, health?

ASSESSMENTS / DATA TO GATHER

- Transect
- Pasture Condition Score Sheet
- Production (using ring clip and weigh)



Pasture Condition Scoring

Two Parts to Pasture Condition Scoring:

1) The Guide
(READ IT!)

1) The Score Sheet

US Department of Agriculture
Natural Resources Conservation Service

Pasture Condition Score Sheet

Use this sheet to record your observations. Scores for each indicator range from 1 to 5. Sum the individual scores to determine overall pasture condition score.

Indicator	1	2	3	4	5	Pa	Pb	Pc
Plant Species Diversity	1 plant species 20% of stand	2 plants 20-40% of stand	3 plants 40-60% desirable forage species	4 plants 60-80% of stand desirable species Ruminant readily consumes with some selectivity	5 plants 80-90% of stand desirable species Ruminant readily consumes with very few selectivity plant			
Plant Species Richness	1-2% of living grass with 50% living legumes	3-5% species on living grass with 50% living legume	5-10% species in total canopy representing a variety of plant material, including natural, introduced, or bare ground	10-20% live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground	20-40% live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground			
Plant Species Richness	Less than 40% in live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground	40-60% in live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground	60-80% in live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground	80-90% in live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground	More than 90% live leaf canopy representing a variety of plant material, including natural, introduced, or bare ground			
Plant Species Richness	Identify: Very low 1 DGS in 1 PDS OR 1 DGS in 1 PDS OR 1 DGS in 1 PDS OR 1 DGS in 1 PDS	Identify: Low 2 DGS in 1 PDS OR 2 DGS in 2 PDS OR 2 DGS in 2 PDS OR 2 DGS in 2 PDS	Identify: Moderate 3 DGS in 1 PDS OR 3 DGS in 2 PDS OR 3 DGS in 2 PDS OR 3 DGS in 2 PDS	Identify: High 4 DGS in 1 PDS OR 4 DGS in 2 PDS OR 4 DGS in 2 PDS OR 4 DGS in 2 PDS	Identify: Very high 5 DGS in 1 PDS OR 5 DGS in 2 PDS OR 5 DGS in 2 PDS OR 5 DGS in 2 PDS			
Plant Species Richness	Soil is very rocky with less than 20% residue in place on the soil surface	Soil is very rocky with less than 20% residue in place on the soil surface	Soil is very rocky with less than 20% residue in place on the soil surface	Soil is very rocky with less than 20% residue in place on the soil surface	Soil is very rocky with less than 20% residue in place on the soil surface			
Plant Species Richness	Plant species diversity of openland and/or pasture areas diverse, including grasses, legumes, and other plants	Plant species diversity of openland and/or pasture areas diverse, including grasses, legumes, and other plants	Plant species diversity of openland and/or pasture areas diverse, including grasses, legumes, and other plants	Plant species diversity of openland and/or pasture areas diverse, including grasses, legumes, and other plants	Plant species diversity of openland and/or pasture areas diverse, including grasses, legumes, and other plants			

Use NRCS Plant List for livestock species. Functional groups are as appropriate for your state (cover/cropland, legume, warm-season grasses, cool-season grasses). Anytime there are more undesirable than desirable, it will be 1 point. Desirable species must be more than 10% of the total. Desirable species are 10%. Functional groups must be 10% of total to be counted.

Pasture Condition Scoring

Tools you need:

- Shovel
- Guide and Score Sheet
- Field notebook
- Plant knowledge & identification skills

Run a transect with 100 points

At your toe record:

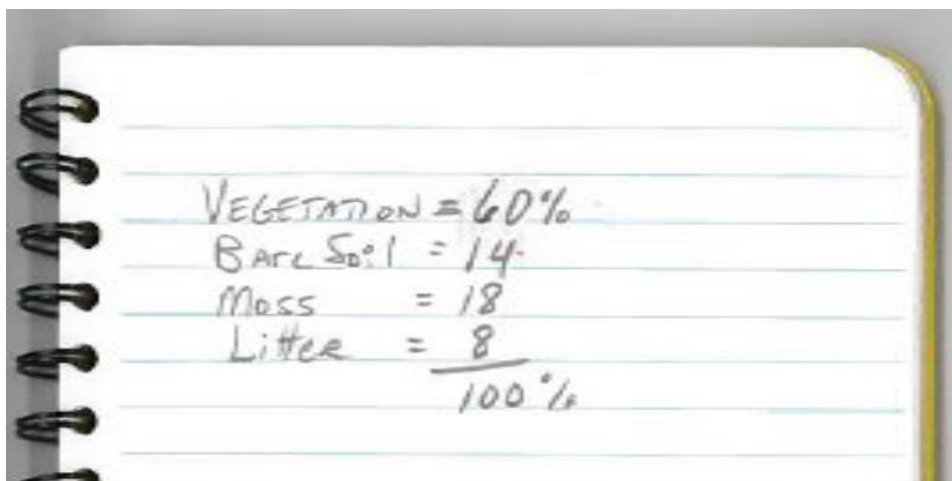
- Plant (by species)
- bare soil
- crust
- rock
- moss
- litter

Dorothy Lehner

1. BARE	26 BARE	51 BARE	76 PW
2. MOSS	27 BLGR	52 BARE	77 WEED
3. BLGR	28 BLGR	53 BARE	78 LTR
4. MOSS	29 BARE	54 BARE	79 CW
5. MOSS	30 BARE	55 MOSS	80 CW
6. BLGR	31 BARE	56 LTR	81 CW
7. MOSS	32 BLGR	57 BARE	82 PW
8. BLGR	33 BLGR	58 BLGR	83 PW
9. BARE	34 BARE	59 LTR	84 CW
10. MOSS	35 BARE	60 BARE	85 BARE
11. BLGR	36 BLGR	61 BARE	86 CW
12. BARE	37 BLGR	62 LTR	87 CW
13. BLGR	38 BARE	63 BARE	88 BARE
14. MOSS	39 BARE	64 BARE	89 BARE
15. BLGR	40 BLGR	65 BARE	90 BARE
16. MOSS	41 BLGR	66 MOSS	91 PW
17. BARE	42 BLGR	67 BARE	92 BARE
18. BLGR	43 BARE	68 BARE	93 BARE
19. BLGR	44 BARE	69 BLGR	94 BARE
20. BLGR	45 LTR	70 BLGR	95 BARE
21. BLGR	46 BARE	71 LTR	96 BARE
22. MOSS	47 MOSS	72 LTR	97 PW
23. BLGR	48 BARE	73 BLGR	98 BLGR
24. BARE	49 BARE	74 BLGR	99 CW
25. LTR	50 BLGR	75 LTR	100 CW

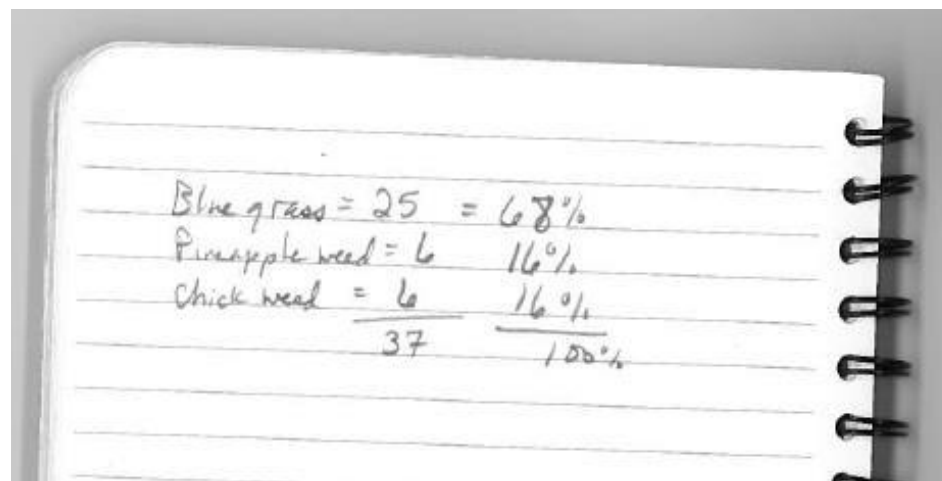
Run a transect with 100 points

Add them up and determine percentages of each category



Using only plant species recorded determine percentages of each species.

Determine preferred desirables, intermediate, and undesirable species.



Pasture Condition Scoring

10 Indicators to Assess:

- ✓ % desirable species
- ✓ % legume
- ✓ live plant cover
- ✓ plant diversity
- ✓ plant residue
- ✓ severity of use
- ✓ concentration areas
- ✓ soil compaction
- ✓ plant vigor
- ✓ soil erosion

For Planning Purposes:

Determine the amount of forage being produced by clipping plots of ungrazed pastures (consider growth curve and rainfall/climate for the season).

Calculate by allowing 50%* available forage utilization (consider trampling).

*50% for most grasses, but consult specs for each specific species



Clipped Plots to Pounds Per Acre

Dry weight in grams(using a size 2.1 hoop) multiplied by 45 gives pounds per acre.

$\frac{1 \text{ gram}}{2.1 \text{ ft sq}}$	=	$\frac{.00220462262 \text{ pounds}}{2.1 \text{ ft sq}}$	x	$\frac{43560 \text{ ft sq}}{1 \text{ acre}}$	=	$\frac{96.03336}{2.1}$	=	45.73017	pounds per acre
one gram per hoop = 45 pounds per acre.									



After your Assessment:

What are the issues?

How can you address them to help the producer meet their goals?



Get to know the Practice Specification – 528 Prescribed Grazing



Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

PRESCRIBED GRAZING

Code 528

(Ac)

DEFINITION

Managing the harvest of vegetation with grazing and/or browsing animals with the intent to achieve specific ecological, economic, and management objectives.

PURPOSE

Apply this practice as a part of a conservation management system to achieve one or more of the following:

- Improve or maintain desired species composition, structure and/or vigor of plant communities.
- Improve or maintain quantity and/or quality of forage for grazing and browsing animals' health and productivity.
- Improve or maintain surface and/or subsurface water quality and/or quantity.
- Improve or maintain riparian and/or watershed function.
- Reduce soil erosion, and maintain or improve soil health.
- Improve or maintain the quantity, quality, or connectivity of food and/or cover available for wildlife.
- Manage fine fuel loads to achieve desired conditions.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all lands where grazing and/or browsing animals are managed.

CRITERIA

General Criteria Applicable to All Purposes

Manage stocking rates and grazing periods to adjust the intensity, frequency, timing, duration, and distribution of grazing and/or browsing to meet the planned objectives for the plant communities, and the associated resources, including the grazing and/or browsing animals.

Remove forage in accordance with site production limitations, rate of plant growth, the physiological needs of forage plants, and the nutritional needs of the animals.

Provide desired grazed/browsed plants sufficient recovery time from grazing/browsing to meet planned objectives. The recovery period can be provided for part or all of the growing season of key plants. Deferment and/or rest will be planned for critical periods of plant or animal needs.

Manage livestock movements based on rate of plant growth, available forage, and identified objectives such as utilization, plant height or standing biomass, residual dry matter, and/or animal performance.

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State office](#) or visit the [Field Office Technical Guide](#).
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NRCS, NHCP
March 2017

When Planning: Determine “turn in” “and turn out” dates on leaf length (stubble height and regrowth lengths).

For pastureland utilization specifications, grazing readiness and re-growth cycles refer to Table 2. Refer to Appendix F for management considerations on grazed cropland. For additional guidance on pastureland management for nutrients and pests, refer to Nutrient Management and Pest Management Practice Standards and Specifications.

TABLE 2. Plant Grazing Heights and Growth Cycles for Pastureland.⁷

DOMESTICATED OR ADAPTED NATIVE PLANTS	RECOMMENDED HEIGHTS FOR GRAZING READINESS (in.) ⁸	RECOMMENDED MINIMUM GRAZING HEIGHT (in.) ⁹	RE-GROWTH CYCLE PERIOD TO PRODUCE QUALITY FORAGE (days) ¹⁰
Bluegrass, Kentucky	2	3	15-20
Bromegrass, Smooth	5	4	25-30
Fescue, Red	5	4	25-30
Bluejoint Reedgrass	8	8 ¹¹	20-30
Creeping Meadow Foxtail	5	2	20-25
Reed canarygrass	6	6	25-30
Ryegrass, perennial	4	2	20-25
Timothy	5	2	20-30
Oats and Peas	6	4	18-28
Red Clover	3	3	18-25
White Dutch Clover	2	2	18-25
Sweet Clover	8	7	21-30
Alsike Clover	2	2	14-21

When Planning: Determine Key area and Key species

6. Key grazing areas shall be identified on the conservation plan map using the following criteria:
 - A. Be identified for both livestock and wildlife.
 - B. Produce >40 percent of the forage.
 - C. Represent moderate to high use by grazers.

7. Key plants shall be identified in the conservation plan using the following criteria:
 - A. Represent >15 percent composition of the annual production.
 - B. Be an important forage plant suited to meet animal and grazing management objectives.
 - C. Be designated as necessary on a seasonal basis to accommodate seasonal diet composition changes for different animals. With some animal species, it may be necessary to designate two or more different key plants, depending upon season of use.

When Planning: Establish a photo point

Photo Point Pasture 4 (1)
 N 61 deg 38.000 min
 W 149 deg 07.986 min
 September 2, 2015



Photo is taken at the gate of Pasture 5, on the western side of field 4, looking SE.





After Your Assessment: Calculate your forage available by field

Field 12 7 ac						
<u>Site #</u>	<u>Site Name</u>	<u>Acreage</u>	<u>Forage # available/ac</u>	<u>Forage Available</u>	<u>Browse # available/ac</u>	<u>Browse Available</u>
2	Alder - Willow	3	7.5	22.5	375	1125
4	Annual Rye - Carex	2.3	788	1812.4		
5	Sedge - Hairgrass	1.1	862	948.2		
8	Wildrye - Tidal	0.3	1348	404.4		
TOTAL		6.7		3187.5		1125



Inventory of Pastures

Pen 1 – 1.7 acres

Pen 1 supports both the tall and short plant community with main plants being quack grass, timothy, and brome in the tall community with bluegrass, yarrow and dandelion in the short community. Other forbs include plantain, foxtail barley and horsetail. The taller community covers approximately 55 % of the ground with the short community covering 45%. Available production for the field is estimated to be 3,400 pounds of forage or 4.2 AUMS. The pasture condition score showed 36 points for a total score of 4.

Pen 2 – 1.5 acres

Pen 2 supports both the tall and short plant community with main plants being quack grass, timothy, and brome in the tall community with bluegrass, yarrow and dandelion in the short community. Other forbs include plantain, foxtail barley and horsetail. The taller community covers approximately 15 % of the ground with the short community covering 85%. Available production for the field is estimated to be 1,600 pounds of forage or 2.0 AUMS. The pasture condition score showed 35 points for a total score of 3-4.

Pen 3 – 1.4 acres

Pen 3 supports both the tall and short plant community with main plants being quack grass, timothy, and brome in the tall community with bluegrass, yarrow and dandelion in the short community. Other forbs include plantain, foxtail barley and horsetail. The taller community covers approximately 65 % of the ground with the short community covering 35%. Available production for the field is estimated to be 3,000 pounds of forage or 3.9 AUMS. The pasture condition score was not assessed as it was ungrazed this year.

Pen 4 – 1.3 acres

Pen 4 supports both the tall and short plant community with main plants being quack grass, timothy, and brome in the tall community with bluegrass, yarrow and dandelion in the short community. Other forbs include plantain, foxtail barley and horsetail. The taller community covers approximately 20 % of the ground with the short community covering 80%. Available production for the field is estimated to be 3,200 pounds of forage or 4.0 AUMS. The pasture condition score showed 34 points for a total score of 3.



For Planning Purposes:

Have a contingency plan for forage
Emergencies.

Determine Initial Stocking Rate.

Prescribed Grazing:

To meet prescribed grazing standards:

- Lower the number of animals or
- Increase the amount of land or
- Control the access to the pastures

If the producer is not meeting prescribed grazing standards, and cannot do one of these above options, they cannot meet prescribed grazing.



After Your Assessment:

Schedule & document your rotation

Natural Resources Conservation Service		Prescribed Grazing		Prescribed Grazing Schedule Specification		AK-ECS-528-9 July 2004																																
Client/Operating Unit: []		Tract: []		CD/HU Code: []		Date Planned: []																																
Farm/Ranch Location: []		County: []		Farm No.: []		Planned Installation Date: []																																
Program: []		Contract Item #: []		Animal Units on Hand: []		Planned Animal Units: []																																
Type of enterprise (Cow/Calf, Stock, or Combination, Stock and Wildlife): []					Kind and Estimated Number of Wildlife: []																																	
Grazing units & kinds of forage	Acres	Total AUM's Available	Year: []												Year: []												Year: []											
			Month												Month												Month											
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D

Period of Grazing: Shown by Cross Hatching

Operations and Maintenance: Prescribed Grazing will be carried out on a continuing basis, making adjustments as needed to ensure that the concept and objectives of its application are met.

Short-term and long-term monitoring of pastures should be done in order to adjust grazing prescriptions in a timely manner. Update, adjust and use information in the Livestock Forage and Feed Worksheet, Guide For Determining Apparent Trend, Proper Grazing Use and Prescribed Grazing Schedule, Conservation Practice Standards and Specifications, in order to assure proper grazing use.

I agree to install this practice as designed and planned. Client: _____ Date: _____

This practice is designed and planned according to NRCS AK Standards and Specifications. Conservationist: _____ Date: _____

This practice was installed and maintained in accordance with this job sheet. Completed by: _____ Date: _____




Compare Pasture Condition Score with Quality Criteria to show \$Financial Assistance\$ need:

<p>- 18 DEGRADED PLANT CONDITION – Undesirable plant productivity and health</p>	<p>Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site</p>	<ul style="list-style-type: none"> Range* 	<p>Use Assessment Tools and Planning Criteria</p>	<p>Rangeland Health Assessment (RHA)</p> <p>Rangeland Trend Worksheet</p> <p>Similarity Index Worksheet</p> <p>Ecological Site Descriptions (ESD's) or eFOTG Sec II</p>	<p>RHA – biotic integrity attribute rating is slight to moderate departure or less</p> <p>OR</p> <p>Vegetation meets a similarity index of 60 or greater for desired plant community and has a positive trend</p> <p>AND</p> <p>Plants are adapted to this site, meet production goals and do not negatively impact other resources</p>
				<p>Biology TN 34 Alaska Pollinator Habitat Assessment</p>	<p>OR</p> <p>Plant productivity is managed for pollinators as a client objective</p> <p>AND</p> <p>Achieve a post-implementation score of at least 100, with an improvement of at least 40 points.</p>
				<p>Biology TN 35 Beneficial Insect Habitat Assessment</p>	<p>OR</p> <p>Plant productivity is managed for beneficial insects as a client objective</p> <p>AND</p> <p>Achieve a post-implementation score of at least 110 points, with an improvement of at least 40 points.</p>
				<p>Pasture Condition Scoresheet (PCS)</p>	<p>PCS - desirable plants element score ≥ 3</p> <p>AND</p> <p>PCS - plant cover element score ≥ 4</p> <p>AND</p> <p>PCS - plant vigor element score ≥ 4</p> <p>AND</p> <p>PCS total ≥ 30</p> <p>AND</p> <p>Plants are adapted to the site, meet production goals and do not negatively impact other resources</p>
	<p>This includes addressing pollinators and beneficial insects.</p>	<ul style="list-style-type: none"> Pasture* 	<p>Use Assessment Tools and Planning Criteria</p>	<p>Biology TN 34 Alaska Pollinator Habitat Assessment</p>	<p>OR</p> <p>Plant productivity is managed for pollinators as a client objective</p> <p>AND</p> <p>Achieve a post-implementation score of at least 100, with an improvement of at least 40 points.</p>

Certifying:

Document what happened:

- Measurements of 20 grazed species in the key area
- Photo point
- Records from producer



Prescribed Grazing
 Proper Grazing Use Worksheet AK-ECS-528-8 July 2004

Client: _____ Location: _____ Completed by: _____ Date: _____

Grazing Unit	Acres	Species of Grazing Animal	Season of Use	Location of Key Grazing Area	Key Plant(s) For Judging Proper Grazing Use	Planned Use of Key Species at End of Grazing Period	Estimated Use of Key Species by Weight				
							2004	2005	2006	2007	2008

Initials of Conservationist Assisting with Application _____

Dates of Application Checks _____

Remarks: _____

What Do I Need???

- Forage inventory by field
 - transect
 - production data
- Current conditions (PCS)
- Animal description/needs
- Feed/forage balance sheet
- Rotation plan showing three years and approximate movement dates based on calculations (referencing leaf lengths as the deciding factor)
- Key areas on plan map
- Photo point to monitor changes over time
- Contingency Plan



What documents are important?

- Prescribed Grazing Specification
- Prescribed Grazing Implementation Requirements
- FOTG Section 4 Documents under PG
- Your Job Approval Authority
- Planning Criteria
- Pasture Condition Score Sheet and Guide
- Prescribed Grazing Plan
- Photo Point description/set up
- National Range and Pasture Handbook