

Part 1A - Stocking Rate and Management Recommendations (90 points)

Supply of usable forage = _____ pounds **AND** _____ AUMs 30 pts

Forage demand = _____ pounds **AND** _____ AUMs 30 pts

Determine if the stocking rate is appropriate for the site. You must show your work in order to receive full credit. (Check appropriate box) 10 pts

- Decrease Stocking Rate Increase Stocking Rate Keep Rate the Same

Space for Calculations:

Choose the correct management activities that apply to improve this site (Select "Yes" for all that apply and select "No" for all that do not; 2pts each) 20 pts

Yes | No

- Defer from spring grazing
- Rest from grazing for a growing season
- Install a rotation grazing system
- Add or revise fencing
- Develop additional water sites

Yes | No

- Control brush, trees and/or noxious weeds
- Seed or interseed with adapted species
- Reduce human recreation activities on site
- Manage for endangered species
- Change or add salt location

Part 1B – Current Rangeland Issues (40 pts)

The host state event team will identify an issue relevant to the CDE location. Information about the selected rangeland issue will be made available by August 1st on the Western National Website.

Participants will be asked 5 multiple choice questions based on issue (20 points, 4 points each).

- 1.
- 2.
- 3.
- 4.
- 5.

A scenario on options to address the issue will be presented. This may include fencing installment, forage planting, water improvement, etc. This will require a calculation for total cost of implementation of the plan based on inputs and requirements. You must show your work to receive full credit. (20 pts; partial credit may be given)

Show Calculations:

Total Cost of Implementing Project:



Part 2 – Plant Identification (200 points)

Plant Name <i>(write name from list below)</i>	Forage Value											
	Growth Form			Life Span		Origin		For Grazers		For Browsers		Toxic
	G	F	W	A	P	N	I	D	U	D	U	T
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												

- Antelope Bitterbrush
- Arrowleaf Balsamroot
- Baltic Rush
- Basin Wildrye
- Big Sagebrush
- Blue Grama
- Bluebunch Wheatgrass
- Canada Thistle
- Cheatgrass (Downy Brome)
- Chokecherry
- Common Mullen
- Coyote Willow
- Crested Wheatgrass
- Curl-leaf Mountain Mahogany
- Curlycup Gumweed
- Elk Sedge

- Forage Kochia
- Fourwing Saltbush
- Foxtail Barley
- Gambel Oak
- Greasewood
- Halogeton
- Hoary Cress (Whitetop)
- Idaho Fescue
- Indian Ricegrass
- Intermediate Wheatgrass
- James Galleta
- Leafy Spurge
- Locoweed
- Louisiana Sage (Cudweed Sagewort)
- Lupine
- Medusahead Rye

- Mormon Tea
- Mule-ears
- Nebraska Sedge
- Needle-and-Thread
- Orchardgrass
- Penstemon (Beardtongue)
- Pinyon Pine
- Poison Hemlock
- Prairie Junegrass
- Purple Threeawn
- Quaking Aspen
- Rabbitbrush
- Redosier Dogwood
- Russian Thistle (Tumbleweed)
- Salt Cedar
- Saltgrass
- Sandberg Bluegrass

- Saskatoon Serviceberry
- Scarlet Globemallow
- Shadscale Saltbush
- Skunkbrush Sumac
- Smooth Brome
- Spotted Knapweed
- Squirreltail
- Tall Larkspur
- Tansymustard
- Tapertip Hawksbeard
- Timothy
- Ventenata
- Western Yarrow
- Winterfat
- Woods' Rose
- Yellow Salsify



Part 3 - Site Description (85 points)

Precipitation Zone (Select one)

5 pts

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Desert | <input type="checkbox"/> Mountain |
| <input type="checkbox"/> Semi-Desert | <input type="checkbox"/> High Mountain |
| <input type="checkbox"/> Upland | <input type="checkbox"/> Alpine |

Soil Depth & Rockiness (Select one)

10 pts

- | | |
|----------------------------------|--|
| <input type="checkbox"/> Shallow | <input type="checkbox"/> Deep Gravelly |
| <input type="checkbox"/> Deep | <input type="checkbox"/> Deep Stony |

Soil Texture (Select one) – 10 pts for the correct soil texture; 5 pts for texture adjacent to the correct texture on the soil triangle

10 pts

- | | |
|--|--|
| <input type="checkbox"/> Sand | <input type="checkbox"/> Silty Clay Loam |
| <input type="checkbox"/> Loamy Sand | <input type="checkbox"/> Clay Loam |
| <input type="checkbox"/> Sandy Loam | <input type="checkbox"/> Sandy Clay |
| <input type="checkbox"/> Silt Loam | <input type="checkbox"/> Silty Clay |
| <input type="checkbox"/> Loam | <input type="checkbox"/> Clay |
| <input type="checkbox"/> Sandy Clay Loam | |

Slope – Clinometers will be provided on site (Select one)

10 pts

- | | |
|--|--|
| <input type="checkbox"/> 0-5% (nearly level) | <input type="checkbox"/> 16-20% (moderately steep) |
| <input type="checkbox"/> 6-10% (slight slope) | <input type="checkbox"/> 21-45% (steep) |
| <input type="checkbox"/> 11-15% (moderate slope) | <input type="checkbox"/> >45% (very steep) |

Aspect – Compasses will be provided on site (Select one)

10 pts

- | | |
|---|---|
| <input type="checkbox"/> North (338°–22°) | <input type="checkbox"/> North East (23°–67°) |
| <input type="checkbox"/> North West (293°–337°) | <input type="checkbox"/> East (68°–112°) |
| <input type="checkbox"/> West (248°–292°) | <input type="checkbox"/> South East (113°–157°) |
| <input type="checkbox"/> South West (203°–247°) | <input type="checkbox"/> South (158°–202°) |

Biomass Estimate – Based on average dry weight in 3 designated 4.8 ft² plot. (20 pts for each correct answer for herbaceous and shrubs; or 10 pts if category nearest to correct answer is selected). 40 pts

Herbaceous (select one):

- 0-400 pounds/acre
- 400-800 pounds/acre
- 800-1200 pounds/acre
- 1200-1600 pounds/acre
- >1600 pounds/acre

Current Season Shrubs (select one):

- 0-400 pounds/acre
- 400-800 pounds/acre
- 800-1200 pounds/acre
- 1200-1600 pounds/acre
- >1600 pounds/acre



Part 4 – Rangeland Assessment (50 points)

4A. Similarity to Desired State (40 points) Calculate the similarity between observed and desired composition based the expected annual biomass production on a dry weight basis. “Observed Composition” will be estimated in the field (in Plots 1, 2, and 3) and “Desired Composition” will be provided. The evaluation area will consist of 3 marked, square plots (50 by 50 cm) within a larger marked area.

Plant Class	Plot 1 Proportion of Biomass (%)	Plot 2 Proportion of Biomass (%)	Plot 3 Proportion of Biomass (%)	Average Observed Composition (%)	Scoring	Desired Composition (Provided at Site) (%)	% Counted Toward Similarity
Perennial Grass					±5% ±10%		
Annual Grass					±5% ±10%		
Forbs (annual and perennial)					±5% ±10%		
Shrubs					±5% ±10%		
	100%	100%	100%			Calculated Similarity	

Average Observed Composition % (28 pts) | 7 pts for each plant class if answer is within ±5 % 3 pts if answer is within ±10% = _____ pts

% Counted Toward Similarity (12 pts) | 3 pts for each plant class with correct composition category counted toward similarity = _____ pts

4B. Identify state or phase in simplified State and Transition Model.

10 pts

Enter correct state/phase of site as depicted in State and Transition provided: _____



Part 5 -Rangeland Ecosystem Measurements (70 pts)

5B. Landscape Appearance Utilization Estimate *(Based on observations recorded in 20-25 flagged sections on a transect; (35 pts)*

Class Intervals	Interval Midpoint (M)	"Hits" Tally	Count (C)	Midpoint x Count (M x C)	Herbaceous Utilization Classes Based on Landscape Appearance
0-5 %	2.5				Desirable forage plants show no evidence of grazing or negligible use.
6-20%	13				Desirable forage plants have the appearance of very light grazing. The herbaceous forage plants may be topped or slightly used. Current seedstalks and young plants are little disturbed.
21-40%	30				Desirable forage plants may be topped, skimmed, or grazed in patches. The low value herbaceous plants are ungrazed. Most young plants are undamaged.
41-60%	50				Half of the available desirable forage plants appear to have been utilized. No more than 10% of the undesirable herbaceous forage plants are utilized.
61-80%	70				More than half of the available desirable forage plants are almost completely utilized. More than 10% of the undesirable herbaceous forage plants have been utilized.
81-94%	88				The rangeland has a mown appearance. Desirable forage plants appear to be heavily utilized and there is no evidence of reproduction or current seedstalks.
95-100%	97.5				The rangeland appears to be completely utilized. More than 50% of the undesirable herbaceous plants appear to have been completely utilized. The remaining stubble is grazed to the soil surface.
Totals					

Average Utilization = $\frac{\text{Total M x C}}{\text{Total C}}$ =

*Correct Calculation Process = 20 pts
 Appropriate Estimate (within ±5% = 15 pts;
 within ±10% = 10 pts) = _____*

5B. Shrub Cover Estimates (35pts)

Shrub cover by line intercept.

Examine the transect line placed on the site, record segments of sagebrush canopy that intercept the transect, and calculate percent cover. *(35 pts total; yard sticks will be provided)*
Calculation Process = 20 pts | Appropriate Estimate (within ±5% = 15 pts; within ±10% = 10 pts)

Sagebrush Intercept Transect Length = _____ ft					
Plant Intercept	Intercept (inches)	Plant Intercept	Intercept (inches)	Plant Intercept	Intercept (inches)
1		7		13	
2		8		14	
3		9		15	
4		10		16	
5		11		17	
6		12		18	
Subtotal =		Subtotal =		Subtotal =	
Total Intercept =					
% Cover =					

