

**Idaho Rangeland Assessment
Career Development Event
2020 Scorecards**

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

The scenario and map will be provided. You must show your work to receive full credit.

Space for Calculations:

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

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 salt location



Part 1B – Current Rangeland Issue (40 pts)

Range management is a dynamic science and constantly evolving. Answer the 5 multiple choice questions about the current rangeland issues that was identified by the host state (20 points, 4 points each).

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

Complete the scenario addressing the current rangeland issue. 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 (150 points). *Identify the plants from a list of 55 plants.*

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

- | | | | | |
|----------------------|---------------------------|-----------------------|-------------------------|---------------------|
| Antelope Bitterbrush | Curl-leaf Mountain | Juniper (Utah, Rocky | Purple Threeawn | Scarlet Globemallow |
| Arrowleaf Balsamroot | Mahogany | Mountain, or Western) | Quaking Aspen | Shadscale |
| Baltic Rush | Curlycup Gumweed | Kentucky Bluegrass | Rabbitbrush (Green or | Smooth Brome |
| Basin Wildrye | Elk Sedge | Lupine | Rubber) | Spotted Knapweed |
| Big Sagebrush | Fourwing Saltbush | Medusahead Rye | Rhizomatous Wheatgrass | Squirreltail |
| Bluebunch Wheatgrass | Foxtail Barley | Mormon Tea | (Thickspike or Western) | Tall Larkspur |
| Canada Thistle | Greasewood | Mountain Brome | Rush Skeletonweed | Tapertip Hawksbeard |
| Cheatgrass (or Downy | Halogeton | Mule-ears | Russian Thistle (or | Western Yarrow |
| Brome) | Hoary Cress (or Whitetop) | Nebraska Sedge | Tumbleweed) | Wild Geranium |
| Chokecherry | Idaho Fescue | Needle-and-Thread | Salt Cedar | Winterfat |
| Common Snowberry | Indian Paintbrush | Penstemon (or | Saltgrass | |
| Coyote Willow | Indian Ricegrass | Beardtongue) | Sandberg Bluegrass | |
| Crested Wheatgrass | Intermediate Wheatgrass | Prairie Junegrass | Saskatoon Serviceberry | |



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

- | | |
|--|--|
| <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) – NOTE: Measure the slope delineated between the flags.

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 averaging the dry weight in 3 designated 4.8 ft² plot.

40 pts

(20 pts for each correct answer for herbaceous and shrubs; or 10 pts if category nearest to correct answer is selected).

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 (95 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 (<i>Provided at Site</i>) (%)	% Counted Toward Similarity
Perennial Grass					±5% ±10%		
Annual Grass					±5% ±10%		
Forbs (<i>annual and perennial</i>)					±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. Browse Age Diversity (40 pts total)– Determine the diversity of age classes for browse plants present in a belt transect delineated on the site. Examine flagged plants to determine age structure. Calculate the proportion of shrubs by age class for shrubs based on your observations (*Complete table and make calculations*).

Age Classes of Shrubs	Tally of Plants (field count)	Total Tally Count	Relative Age Class Distribution (%)	Relative
Young (< 5% dead stems)				±5%
Mature (> 50% live stems, 5-50% dead stems)				±5%
Aged (< 50% live stems and > 50% dead stems)				±5%
Dead (No live stems; all stems appear dead)				±5%
Total	X		100%	X

10 pts for each % relative age distribution within ±5% = _____pts

4C. Browse and Ecosystem Change. (5 pts total) Based on your data for browse age diversity, which of the following statements best describes the ecosystem dynamics: 5 pts

- The site is in a state of renewal or invasion with mostly young plants.
- The site is apparently stable with abundant young plants and a nearly equal mix of age classes.
- The site is apparently transition to a site with less shrubs as most woody plants are aged or dead.

4D. Identify state or phase in simplified State and Transition Model. (10pts total) 10 pts

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



Part 5 -Rangeland Ecosystem Measurements (70 pts)

5A. 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	<input type="text"/>	<input type="text"/>	

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

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

5B. Shrub Cover Estimates *(35 pts)*

Shrub cover by line intercept.

Examine the transect line placed on the site, record segments of shrub canopy that intercept the transect, and calculate percent cover. *(30 pts total; yard sticks will be provided)*

5		11		17	
6		12		18	
Subtotal =		Subtotal =		Subtotal =	
Total Intercept =					
% Cover =					

Shrub Cover 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	



CHAPTER NAME: _____

STUDENT ID #: _____

Correct Calculation Process = 20 pts

Appropriate Estimate (within $\pm 5\%$ = 15 pts;

within $\pm 10\%$ = 10 pts) = _____

