

# MONTANA RANGE DAYS PLANT ID CONTEST FORM 2017

Name Key

Chapter \_\_\_\_\_

Score \_\_\_\_\_

Longevity: P=Perennial, B=Biennial, A=Annual

Origin: N=Native, I=Introduced

Season of Growth: C=Cool, W=Warm, X=inappropriate

Grazing Response: D=Decreaser, I=Increaser, V=Invader, X=inappropriate

Poisonous = P

Noxious = N

Bonus: Bulbous bluegrass **AICV**

Type of Plant: 1= Grass, 2=Grass-like, 3=Forb, 4=Shrub/Tree, 5=Cacti

	Flag #	Plant #	Type of Plant (1-2-3-4-5)	Longevity (P-B-A)	Origin (N-I)	Season (C-W-X)	Grazing Response (D-I-V-X)	Poisonous (P) Noxious (N)	Points
1		American licorice	64	needleleaf sedge					
2		American vetch	65	oatgrass spp.					
3		annual sunflower	66	penstemon					
4		arrowleaf balsamroot	67	pincushion cactus					
5	1	aster	68	plains cottonwood	P	N	C	I	P
6		Baltic rush	69	plains muhly					
7	2	basin wildrye	70	plains reedgrass	P	N	C	I	P
8		bastard toadflax	71	ponderosa pine					
9	3	big sagebrush	72	prairie coneflower	P	N	C	I	
10		biscuitroot	73	prairie junegrass					
11	4	blanket flower	74	prairie onion	P	N	W	I	
12		blue flax	75	prairie sandreed					
13	5	blue grama	76	prairie thermopsis	P	N	C	I	
14		bluebunch wheatgrass	77	prairiesmoke					
15	6	bottlebrush squirreltail	78	pricklypear	P	N	C	I	
16		broom snakeweed	79	purple prairieclover					
17	7	buckwheat	80	pussy toes	P	N	C	I	
18		buffaloberry	81	quackgrass					
19	8	burdock	82	quaking aspen	P	N	C	I	
20		Canada thistle	83	raspberry					
21	9	cheatgrass	84	red threeawn	P	N	C	I	
22		chokecherry	85	red top					
23	10	cinquefoil	86	red-osier dogwood	P	N	C	I	
24		cocklebur	87	reed canarygrass					
25	11	Columbia needlegrass	88	Rocky Mountain Juniper	P	N	C	D	
26		common starlily	89	rose spp.					
27	12	creeping juniper	90	rubber rabbitbrush	P	I	C	V	
28		crested wheatgrass	91	salsify					
29	13	cudweed sagewort	92	Sandberg bluegrass	P	N	C	I	
30		curly dock	93	scarlet gaura					
31	14	curlycup gumweed	94	scarlet globemallow	P	I	C	V	
32		Cusick bluegrass	95	segolily mariposa					
33	15	dandelion	96	serviceberry/juneberry	A	I	C	V	
34		dense clubmoss	97	showy daisy					
35	16	dotted gayfeather	98	showy milkweed	P	N	C	I	
36		Douglas fir	99	shrubby cinquefoil					
37	17	Drummond milkvetch	100	silver sagebrush	B	I	C	V	
38		field bindweed	101	sixweeks fescue					
39	18	field chickweed	102	skunkbush sumac	P	N	C	D	
40		foxtail barley	103	slender wheatgrass					
41	19	fringed sagewort	104	slimflower scurfpea	P	N	X	I	
42		green bristlegrass	105	smooth brome					
43	20	green needlegrass	106	spike fescue	P	N	C	I	
44		green sagewort	107	spikeoat					
45	21	groundplum milkvetch	108	spotted knapweed	P/B	I	W	V	N
46		hairy goldenaster	109	thickspike wheatgrass					
47	22	Hood phlox	110	threadleaf sedge	P	N	W	I	
48		horsemint	111	timothy					
49	23	houndstongue	112	tumble mustard	P	N	C	I	
50		Idaho fescue	113	wavyleaf thistle					
51	24	Indian ricegrass	114	western snowberry	P	I	C	V	
52		inland saltgrass	115	western wheatgrass					
53	25	Japanese brome	116	western yarrow	P	N	W	I	
54		Kentucky bluegrass	117	white pointloco					
55	26	leafy spurge	118	willow spp.	P	N	C	I	
56		limber pine	119	winterfat					
57	27	low larkspur	120	woolly groundsel	A	I	C	V	
58		lupine	121	woolly mullein					
59	28	meadow deathcamas	122	woolly plantain	P	I	C	V	
60		milkvetch	123	yellow alyssum					
61	29	Missouri goldenrod	124	yellow pincushion cactus	P	N	C	I	
62		narrowleaf cottonwood	125	yellow sweetclover					
63	30	needleandthread	126	yucca	P	N	C	I	

\*5 pts. for each correct plant name \*1 pt. for each correct characteristic \*300 total, plus poisonous and noxious

# MRD 2017 YOUTH/ADULT PLANT ANATOMY CONTEST FORM

NAME: Key CHAPTER: \_\_\_\_\_ SCORE: \_\_\_\_\_

CIRCLE ONE ANSWER PER MULTIPLE CHOICE QUESTION (5 POINTS PER QUESTION & 25 POINTS PER KEYED PLANT - TOTAL OF 150 POINTS)

1	THE LEAF SHAPE IS:	<del>LANCEOLATE</del>	SAGITATE	<b>LINEAR</b>	SPATULATE
2	THE SEEDSTALK INFLORESCENCE IS	UMBLE	RACEME	SPIKE	<b>PANICLE</b>
3	THIS PLANT TYPE IS	GRASS	GRASS-LIKE	FORB	<b>SHRUB</b>
4	THIS PLANT LEAF IS A	SIMPLE LEAF	<b>COMPOUND LEAF</b>		
5	THE PLANT LIGULE IS	CILIATE	<b>MEMBRANOUS</b>	ABSENT	
6	THE UNDERGROUND STEM IS A	TUBER	RHIZOME	CORM	<b>BULB</b>
7	THE PRIMARY LEAF VENATION IS	PALMATE	RETICULATE	PINNATE	<b>ARCUATE</b>
8	THE CROSS SECTION OF THIS GRASS LEAF IS	<b>FLAT</b>	ROLLED	V-SHAPED	
9	THIS PLANT HAS STIPULES	<b>YES</b>	NO		
10	THIS GRASS HAS	AURICLES	<b>LIGULES</b>		
11	THE LEAF MARGIN IS	CILIATE	ENTIRE	<b>SERRATED</b>	LOBED
12	THIS MODIFIED STEM IS A	<b>RHIZOME</b>	STOLON		
13	THIS COMPOUND LEAF IS	EVEN-PINNATE	TRIFOLIATE	<b>PALMATE</b>	TERNATE
14	THE LEAF ARRANGEMENT IS	<b>ALTERNATE</b>	ROSETTE	IMBRICATE	
15	THE LEAF ATTACHMENT IS	ACAULINE	<b>CAULINE SESSILE</b>	CAULINE PETIOLATE	CAULINE CLASPING
16	PLANT AURICLES ARE	<b>ABSENT</b>	CLASPING		
17	THE MODIFIED APPENDAGES ARE	<b>PRICKLES</b>	SPINE	TENDRILS	THORNS
18	THE FLOWER OF THIS PLANT HAS	4 SEPARATE PETALS	<b>5 UNITED PETALS</b>	NO PETALS	3 PETALS
19	THE LEAF SURFACE IS	PITTED	GLABROUS	<b>PUBESCENT</b>	STELLATE
20	THE GROWTH FORM IS	<b>BUNCH</b>	SOD-FORMER		

KEY OUT EACH PLANT AND WRITE THE LETTER IN THE BLANK

KEY PLANT #1 B

KEY PLANT #2 E

POINTS POSSIBLE	150
POINTS MISSED	
TOTAL POINTS	

Record points at the top of the form

Y/A Stocking Rate Scenario 2017:

There are 5 questions. Use this sheet to figure out the answers, then **TRANSFER THE ANSWERS TO THE CONTEST FORM.**

John and Carol Nobody just bought Red Lodge Foothills Ranch, which consists of 4,900 acres of Native Range, 500 acres of Russian wildrye and 600 acres of Hayland aftermath, 6,000 acres total. Red Lodge Foothills Ranch is in the Northern Rocky Mountain Foothills - South, and the average precipitation is 13-19 inches per year. All pastures are fenced separately. The inventory data is summarized below.

Pasture 1 has 1,500 acres. 500 acres of Shallow with a similarity index of 55%. 800 acres of Overflow with a similarity index of 40%. 200 acres of Loamy Steep with a similarity index of 35%.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	AUM's Available
Shallow	500	55	.17	85
Overflow	800	40	.35	280
Loamy Steep	200	35	.15	30
TOTALS	1500	XXXX	XXXXXXXXXX	395

Question A. (10pts) How many AUM's are available in Pasture 1?

395 AUM's

Question B. (10pts) There are 20 head of elk and 10 mule deer that are in this pasture all year. How many AUMs do the wildlife use?

144 - ELK

24 - MULE DEER

168 TOTAL

Question C. (10pts) How many months can 300 cow/calf pairs and 6 mature bulls, graze Pasture 1? (Remember to subtract the AUMS wildlife use)

BULLS : 8.1 AUE

COWS : 300 AUE

0.7 months

Pasture 2 consists of 1,800 acres. 1,100 acres of Silty/Loamy range site with a 42% similarity index, 200 acres of Droughty Steep with a 25% similarity index, and 500 acres of Russian wildrye.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	AUM's Available
Silty/Loamy	1,100	42%	.25	275
Droughty Steep	200	25%	.04	8
Russian Wildrye	500	—	.6	300
	1,800	XXXX	XXXXXXXXXX	583

Question D. (10pts) How many 1200lbs cow/calf pairs could graze Pasture 2 for five (5) months?

97 pairs

Pasture 3 consists of 2,700 acres. 1,200 acres of Loamy Steep with a similarity index of 80%, and a slope of 20%. 900 acres of Clayey with a similarity index of 35%. 600 acres of hayland aftermath.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	Discount Factor %	AUM's Available
Loamy Steep	1200	80%	.33	30	277.2
Clayey	900	35%	.21	—	189
Hayland Aff	600	—	.4	—	240
TOTALS		XXXX	XXXXXXXXXX	XXX	706.2

Question E. (10pts) Including all three pastures, how many AUMs are available on the Red Lodge Foothills Ranch?

1684.2 AUM

**STOCKING RATE ROUNDING RULES FOR CONTESTS:**

1. Round stocking rates to the nearest one hundredth. For example, .277 AUMs/acre would be rounded to .28 AUMs per acre.
2. If you are figuring numbers of animals, round DOWN to the nearest whole number. For example, calculation of a number of yearlings is rounded from 333.3 or 333.6 to 333.
3. Round AUM calculations to the nearest tenth.
4. Round months to the nearest tenth.

# V/A STATION 3 - CONTEST FORM 2017

NAME: Key CHAPTER: \_\_\_\_\_ SCORE: 100

## SOILS/ECOLOGICAL SITES - 100 POINTS

- DETERMINE THE RANGE SITES USING THE ECOLOGICAL SITE KEY.
- ANSWER THE 4 QUIZ QUESTIONS.

(Fill in Range Site Name for each site)

SITE #1 Loamy Steep (20 Points)

SITE #2 Loamy (20 Points)

SITE #3 Over Slow (20 Points)

SCORE: 100 /100 Points

**QUIZ: (WRITE THE LETTER OF THE CORRECT ANSWER)**  
40 points (10 points/question)

1. A
2. A
3. D
4. C

40 pts.

### Quiz Questions

ENTER THE ANSWERS IN THE BOX ABOVE.

1. What is the general topography of site # 1?
  - a. steep side-slope
  - b. top of a hill
  - c. bench (fan) above a water drainage
  - d. creek (drainage) bottom
2. A soil profile is alive.
  - a. true
  - b. false
3. Soil depth varies depending on the location of the restrictive layer. These are all examples of restrictive layers EXCEPT:
  - a. bedrock
  - b. heavy clay
  - c. gravel
  - d. organic matter
4. Which soil particle has the LARGEST relative surface area?
  - a. sand
  - b. silt
  - c. clay

Y/A STATION 4 - CONTEST FORM 2017

NAME: Key CHAPTER: \_\_\_\_\_ SCORE \_\_\_\_\_

RANGE INVENTORY/MONITORING - 100 POINTS

- USING THE INFORMATION/GUIDES PROVIDED AT THIS STATION, DETERMINE THE SIMILARITY INDEX AND EVALUATE RANGE TREND FOR THE SITE (+ OR - 7% ON SIMILARITY INDEX CALCULATIONS WILL BE CONSIDERED CORRECT).
- ANSWER THE 4 QUIZ QUESTIONS BELOW.

**SIMILARITY INDEX (%) (40 points)**  
 (WRITE THE % IN THE BOX)

57

50-64

**RANGE TREND (CIRCLE ONE) (20 points)**

AWAY FROM    NOT APPARENT    TOWARDS

**QUIZ: (WRITE THE LETTER OF THE CORRECT ANSWER)**  
 40 points (10 points per question)

1) B

2) A

3) D

4) B

SCORE: \_\_\_\_\_ /100 Points

Quiz Questions

ENTER THE ANSWERS IN THE BOX ABOVE.

1. The degree to which the integrity of the soil, vegetation, water, air, and ecological processes of the rangeland ecosystem are balanced and sustained is defined as?
  - a. Rangeland Trend
  - b. Rangeland Health
  - c. Historic Climax Plant Community
  - d. Similarity Index
  
2. Rangelands change over time with different management practices, disturbances, and/or climatic shifts.
  - a. true
  - b. false
  
3. The method(s) to determine species composition and production are:
  - a. Clipping and Weighing
  - b. Visual Estimation Using Plant Weight Units
  - c. Estimating Species Composition Using a Grid
  - d. all of the above
  - e. b & c
  
4. Decreaser plants are defined as generally tall, palatable. Leafy plants preferred by grazing animals and dominant in Historic Climax Plant Community. Which of the plants below would be considered a decreaser?
 

a. Kentucky bluegrass	c. red top
b. buffaloberry	d. prairie coneflower

# Y/A STATION 5 - CONTEST FORM 2017

NAME: KEY 2017 CHAPTER: \_\_\_\_\_ SCORE \_\_\_\_\_

## STOCKING RATES/UTILIZATION - 100 POINTS

- USE THE SCENARIO AND GUIDES PROVIDED TO ANSWER THE 5 FILL IN THE BLANK QUESTIONS.
- ANSWER THE 4 MULTIPLE CHOICE QUIZ QUESTIONS. WRITE YOUR ANSWERS IN THE BOX PROVIDED BELOW.
- OBSERVE THE 2 UTILIZATION PLOTS AND DETERMINE UTILIZATION LEVELS.

### SCENARIO FILL IN THE BLANK: (50 Points)

- A. (10pts) 395 AUM's
- B. (10pts) 168 AUM's
- C. (10pts) 0.7 Month
- D. (10pts) 97 Pairs
- E. (10pts) 11684.2 AUMs

### QUIZ: (WRITE THE LETTER OF THE CORRECT ANSWER) 20 Points - 5 points/question

- 1) D
- 2) C
- 3) B
- 4) A

### UTILIZATION: Fill in the degree of use 30 Points possible - 15 points per Plot. (Circle one per plot)

Key Species - *Idaho fescue*

Plot #1	Slight	Moderate	Full	Close	<b>Severe</b>
Plot #2	Slight	Moderate	<b>Full</b>	Close	Severe

### Guide to Degree of Use

SLIGHT	MODERATE	FULL	CLOSE	SEVERE
Key areas undisturbed. Light use on key species in choice areas. Some key plants are not grazed	Plants that are accessible to livestock are grazed. Use levels low on less desirable plants.	All accessible plants are grazed. Most key species are used fully. Increaser plants are also utilized. Less than 10% of the total plant population is used more than 60%.	All accessible plants are cropped. Key species are utilized 50% or more. Less desirable plants are also utilized. Choice areas are overused.	Key forage species are almost completely used. Less desirable plants are now carrying the grazing load. Livestock trampling and trailing is clearly evident. Plants are in poor health and lack vigor.
1-20%	21-40%	41-60%	61-80%	81-100%

Y/A STOCKING RATES/UTILIZATION QUIZ QUESTIONS 2017  
(FILL IN ANSWERS ON CONTEST FORM)

1. What factors of grazing can we control?
  - a. Grazing intensity
  - b. Grazing frequency
  - c. Timing of grazing/season of grazing
  - d. All of the above
  - e. A & B
  - f. B & C
  
2. Nodes are defined as:
  - a. an area between two nodes.
  - b. structures that contain and protect growing points.
  - c. points along the plant stem where the leaves emerge.
  - d. stems that run sideways or laterally underground.
  
3. Grasses that produce lateral stems in the form of rhizomes or stolons, which allows the plant to spread out. This the definition of a \_\_\_\_\_ grass.
  - a. Stubble
  - b. Sod-forming
  - c. Bunchgrass
  - d. Axillary
  
4. The crown of a plant is susceptible to damage during the winter, drought, and overly-wet conditions.
  - a. True
  - b. False