

MRD Superstarter Plant Identification Contest Form 2015

Name: Super Starter Key

Score: 130 / 130

PLANT NUMBER

10 points for each correct plant name. 3 points for each correct plant type. Total of 260 points.

Flag Letter

PLANT NUMBER (see list)

GRASS	GRASS-LIKE	FORB	SHRUB/TREE	CACTUS
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PLANT NUMBER	PLANT NAME	PLANT NUMBER	PLANT NAME	PLANT NUMBER	PLANT NAME	FLAG LETTER	PLANT NUMBER (see list)	GRASS	GRASS-LIKE	FORB	SHRUB/TREE	CACTUS
1	alfalfa	27	Hoods phlox	53	Sandberg bluegrass	A	2			X		
2	American vetch	28	Indian ricegrass	54	scarlet globemallow	B	67			X		
3	arrowleaf balsamroot	29	Japanese brome	55	silver sagebrush	C	52			X		
4	basin wildrye	30	Kentucky bluegrass	56	slimflower scurfpea	D	55				X	
5	big sagebrush	31	leafy spurge	57	smooth brome	E	40			X		
6	bitterroot	32	limber pine	58	spotted knapweed	F	38	X				
7	blue flax	33	low larkspur	59	thickspike wheatgrass	G	15	X				
8	blue grama	34	lupine	60	threadleaf sedge	H	63	X				
9	bluebunch wheatgrass	35	meadow deathcamas	61	timothy	I	29	X				
10	broom snakeweed	36	Missouri goldenrod	62	wavyleaf thistle	J	62			X		
11	Canada thistle	37	narrowleaf cottonwood	63	western wheatgrass	K						
12	cheatgrass	38	needleandthread	64	western yarrow	L						
13	cinquefoil	39	needleleaf sedge	65	white pointloco	M						
14	common starlily	40	penstemon	66	woolly mullein	N						
15	crested wheatgrass	41	plains cottonwood	67	yellow sweetclover	O						
16	cutweed sagewort	42	ponderosa pine	68	yucca	P						
17	curlycup gumweed	43	prairie junegrass			Q						
18	dandelion	44	prairie onion			R						
19	dense clubmoss	45	prairie thermopsis			S						
20	dotted gayfeather	46	pricklypear			T						
21	Douglas fir	47	purple prairieclover									
22	foxtail barley	48	pussytoes									
23	fringed sagewort	49	red threawn									
24	green needlegrass	50	rose spp.									
25	green sagewort	51	rush skeletonweed									
26	hairy goldenaster	52	salsify									

Points Possible 260 130
 Points Missed _____
 Total Points _____

Record score at the top of the page.

MRD 2015 SUPERSTARTER PLANT ANATOMY CONTEST FORM

NAME: Super Starter Key

SCORE: 180

1	THIS LEAF MARGIN (EDGE) IS	ENTIRE (SMOOTH)	SERRATE	CILIATE (HAIRY)	LOBED
2	THE SEEDHEAD IS A	PANICLE	RACEME	SPIKE	UMBEL
3	THIS PLANT IS A	GRASS	GRASS-LIKE	FORB	SHRUB
4	THIS PLANT LEAF IS	SIMPLE	COMPOUND		
5	THIS PLANT FLOWER IS	REGULAR	IRREGULAR		
6	THE GROWTH FORM IS	BUNCH	SOD-FORMER		
7	THE LEAF VEINS ARE	PALMATE	PARALLEL	PINNATE	
8	THE LEAF ARRANGEMENT IS	ALTERNATE	OPPOSITE	WHORLED	
9	THIS PLANT IS A	GRASS	GRASS-LIKE	FORB	SHRUB
10	THIS PLANT FLOWER HAS	MANY (>5) PETALS	5 PETALS	3 PETALS	NO PETALS
11	THIS LEAF MARGIN (EDGE) IS	ENTIRE	DIVIDED	SERRATED	
12	THIS COMPOUND LEAF IS	PINNATE	TRIFOLIATE	PALMATE	
13	THE LEAF ARRANGEMENT IS	ALTERNATE	OPPOSITE	WHORLED	
14	THIS PLANT IS A	GRASS	GRASS-LIKE	FORB	SHRUB
15	THIS PLANT LEAF IS	SIMPLE	COMPOUND		
16	THIS FLOWER IS FROM A	GRASS	GRASS-LIKE	FORB	
17	THIS PLANT ROOT IS	TAP	FIBROUS	BULB	
18	THIS STEM IS	HOLLOW	WOODY	SOLID	
19	THIS PLANT LEAF IS	SIMPLE	COMPOUND		
20	THE LEAF SHAPE IS	LINEAR	SPATULATE	OVATE	

POINTS POSSIBLE (8 points per question)	160 80
POINTS MISSED	
TOTAL POINTS	

(RECORD SCORE AT THE TOP OF PAGE)

MRD 2015 SUPERSTARTER PLANT ANATOMY CONTEST FORM

NAME: Key Super Starter

SCORE: _____

1	THIS LEAF MARGIN (EDGE) IS	ENTIRE (SMOOTH)	SERRATE	CILIATE (HAIRY)	LOBED
2	THIS LEAF MARGIN IS	PINNATE	RACEMOSE	SPERE	UMBEL
3	THIS PLANT IS A	GRASS	GRASS-LIKE	FORB	SHRUB
4	THIS PLANT LEAF IS	SIMPLE	COMPOUND		
5	THIS PLANT FLOWER IS	REGULAR	IRREGULAR		
6	THE GROWTH FORM IS	BRANCH	SOD-FORMER		
7	THE LEAF VEINS ARE	PALMATE	PARRALLEL	PINNATE	
8	THE LEAF ARRANGEMENT IS	ALTERNATE	OPPOSITE	WHORLED	
9	THIS PLANT IS A	GRASS	GRASS-LIKE	FORB	SHRUB
10	THIS PLANT FLOWER HAS	MANY (>5) PETALS	5 PETALS	3 PETALS	NO PETALS
11	THIS LEAF MARGIN (EDGE) IS	ENTIRE	DIVIDED	SERRATED	
12	THIS COMPOUND LEAF IS	PINNATE	TRIFOLIATE	PALMATE	
13	THE LEAF ARRANGEMENT IS	ALTERNATE	OPPOSITE	WHORLED	
14	THIS PLANT IS A	GRASS	GRASS-LIKE	FORB	SHRUB
15	THIS PLANT LEAF IS	SIMPLE	COMPOUND		
16	THIS FLOWER IS FROM A	GRASS	GRASS-LIKE	FORB	
17	THIS PLANT ROOT IS	TAP	FIBROUS	BULB	
18	THIS STEM IS	HOLLOW	WOODY	SOLID	
19	THIS PLANT LEAF IS	SIMPLE	COMPOUND		
20	THE LEAF SHAPE IS	LINEAR	SPATULATE	OVATE	

POINTS POSSIBLE (8 points per question)	-160- 80
POINTS MISSED	
TOTAL POINTS	

(RECORD SCORE AT THE TOP OF PAGE)

10 pts / question

MRD WRANGLER Plant ID Contest Form 2015

Name: Key

Score: _____

1	alfalfa	45	lumber pine	69	wild parsley
2	American licorice	46	low larkspur	90	woolly mullein
3	American vetch	47	lupine	91	yellow alyssum
4	annual sunflower	48	meadow deathcamas	92	yellow sweetclover
5	arrowleaf balsamroot	49	milkvetch	93	yucca
6	aster	50	Missouri goldenrod		
7	Baltic rush	51	narrowleaf cottonwood		
8	basin wildrye	52	needleandthread		
9	bastard toadflax	53	needleleaf sedge		
10	big sagebrush	54	penstemon		
11	bitterroot	55	plains cottonwood		
12	blue flax	56	ponderosa pine		
13	blue grama	57	prairie coneflower		
14	bluebunch wheatgrass	58	prairie junegrass		
15	broom snakeweed	59	prairie onion		
16	burdock	60	prairie sandreed		
17	Canada thistle	61	prairie thernopsis		
18	cheatgrass	62	pricklypear		
19	chokecherry	63	purple prairieclover		
20	cinquefoil	64	pussytoes		
21	cocklebur	65	quackgrass		
22	common starily	66	red threeawn		
23	crested wheatgrass	67	rose spp.		
24	cudweed sagewort	68	rubber rabbitbrush		
25	curly dock	69	rush skeletonweed		
26	curlycup gumweed	70	salsify		
27	dandelion	71	Sandberg bluegrass		
28	dotted gayfeather	72	scarlet globemallow		
29	Douglas fir	73	segolily mariposa		
30	dense clubmoss	74	silver sagebrush		
31	Fendler threeawn	75	skunkbush sumac		
32	foxtail barley	76	slender wheatgrass		
33	fringed sagewort	77	slimflower scurfpea		
34	green needlegrass	78	smooth brome		
35	green sagewort	79	spotted knapweed		
36	groundpium milkvetch	80	thickspike wheatgrass		
37	hairy goldenaster	81	threadleaf sedge		
38	Hood phlox	82	timothy		
39	houndstongue	83	tumble mustard		
40	Idaho fescue	84	wavyleaf thistle		
41	Indian ricegrass	85	western snowberry		
42	Japanese brome	86	western wheatgrass		
43	Kentucky bluegrass	87	western yarrow		
44	leafy spurge	88	white pointloco		

TYPE OF PLANT:

(use only the # symbol)

- 1 = Grass
- 2 = Grass-like
- 3 = Forb
- 4 = Shrub/Tree
- 5 = Cactus

SEASON:

- C = Cool Season
- W = Warm Season
- X = Inappropriate

GRAZING RESPONSE

- D = Decreaser
- I = Increaser
- V = Invader
- X = Inappropriate

POISONOUS: Mark "P"

if plant is poisonous

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)
1	70	3	B	I	C	V	
2	33	4	P	N	W	I	
3	92	3	B	I	C	V	
4	52	1	P	N	C	I	
5	72	3	P	N	C	I	
6	62	5	P	N	C	I	
7	77	3	P	N	W	I	
8	58	1	P	N	C	I	
9	74	4	P	N	W	I	
10	81	2	P	N	C	I	
11	27	3	P	I	C	V	
12	86	1	P	N	C	I	
13	34	1	P	N	C	D	
14	78	1	P	I	C	V	
15	3	3	P	N	C	D	
16	91	3	A	I	C	V	
17	54	3	P	N	C	I	
18	15	4	P	N	W	I	
19	14	1	P	N	C	D	
20	68	4	P	N	C	I	

*10 Points each correct plant name
 *1 point for each plant characteristic
300 +Points Possible

WRANGLER PLANT ANATOMY CONTEST FORM 2015

NAME: Key

SCORE: _____

CIRCLE ONE ANSWER PER MULTIPLE CHOICE QUESTION (6 POINTS PER QUESTION) & KEY 1 PLANT (30 POINTS) - TOTAL OF 160 POINTS!

1	THE LEAF SHAPE IS:	LANCEOLATE	SAGITATE	<u>LINEAR</u>	OVATE
2	THE SEEDSTALK INFLORESCENCE IS	UMBEL	RACEME	HEAD	<u>PANICLE</u>
3	THIS PLANT IS A	GRASS	GRASS-LIKE	<u>FORB</u>	SHRUB
4	THIS PLANT LEAF IS	SIMPLE LEAF	<u>COMPOUND LEAF</u>		
5	THE PLANT LIGULE IS	HAIRY	MEMBRANOUS	<u>ABSENT</u>	
6	THE PLANT FLOWER IS	HEAD	REGULAR	<u>IRREGULAR</u>	
7	THE LEAF VEINS ARE	PALMATE	<u>PARRALLEL</u>	PINNATE	
8	THE GROWTH FORM OF THIS GRASS IS	<u>BUNCHGRASS</u>	SOD-FORMER		
9	THIS PLANT HAS STIPULES	YES	<u>NO</u>		
10	THE STATURE (STYLE) OF THIS GRASS IS	LARGE	MID	<u>SMALL</u>	
11	THE LEAF MARGIN IS	CILIATE	ENTIRE	<u>SERRATED</u>	LOBED
12	THIS MODIFIED STEM IS A	<u>RHIZOME</u>	STOLON	CORM	BULB
13	THIS COMPOUND LEAF IS	PINNATE	<u>TRIFOLIATE</u>	PALMATE	
14	THE LEAF ARRANGEMENT IS	<u>ALTERNATE</u>	OPPOSITE	WHORLED	
15	THIS PLANT STEM IS FROM A	GRASS	GRASS-LIKE	FORB	<u>SHRUB</u>
16	THIS PLANT HAS AURICLES	YES	<u>NO</u>		
17	THE STEM OR LEAF MODIFICATION IS A	PRICKLE	SPINE	<u>TENDREL</u>	THORN
18	THE FLOWER OF THIS PLANT HAS	4 SEPARATE PETALS	5 UNITED PETALS	<u>NO PETALS</u>	3 PETALS
19	THE ROOTS OF THIS PLANTS ARE	<u>TAP</u>	FIBROUS		
20	THIS PLANT IS AN	ANNUAL	BIENNIAL	<u>PERENNIAL</u>	

21 KEY OUT THE PLANT AND WRITE THE LETTER IN THE BLANK

KEY PLANT #1 K
(30 points)

POINTS POSSIBLE	150
POINTS MISSED	
TOTAL POINTS	

Record points at the top of the form

MRD 2015 WRANGLER ECOLOGICAL SITE JUDGING TEST

NAME: Key

SCORE: _____

CIRCLE ONE ANSWER PER QUESTION

1	THE SOIL SURFACE TEXTURE IS?	CLAYEY	SILTY	<u>SANDY</u>
2	THE SOIL SURFACE TEXTURE IS?	CLAYEY	<u>SILTY</u>	SANDY
3	THE SOIL SURFACE TEXTURE IS?	<u>CLAYEY</u>	SILTY	SANDY
4	THE SOIL SURFACE TEXTURE IS?	<u>CLAYEY</u>	SILTY	SANDY
5	THE SOIL PROFILE IS?	<u>MODERATELY DEEP</u>	SHALLOW	VERY SHALLOW
6	THE SOIL PROFILE IS?	<u>MODERATELY DEEP</u>	SHALLOW	VERY SHALLOW
7	THE RANGE SITE IS?	<u>RUN-IN</u>	RUN-OFF	NORMAL
8	THE RANGE SITE IS?	RUN-IN	RUN-OFF	<u>NORMAL</u>

15 POINTS PER SOIL TEXTURE QUESTION

10 POINTS PER SOIL PROFILE QUESTION

10 POINTS PER ECOLOGICAL SITE QUESTION

TOTAL OF 100 POINTS

MRD 2015 Wrangler Utilization Form

Name: Key Score: _____

Fill in an X for the level of utilization of each plot (20 points per question - total 60 points)

	Slight 0-20%	Moderate 21-40%	Full 41-60%	Close 61-80%	Severe 81-100%
Plot 1	✓				
Plot 2					✓
Plot 3			✓		

MONTANA RANGE DAYS PLANT ID CONTEST FORM 2015

Name Key Chapter _____ Score _____

			Type of Plant: 1= Grass, 2=Grass-like, 3=Forb, 4=Shrub/Tree, 5=Cacti									
1-65	Plant Name	66-129	Needleleaf sedge	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	alfalfa	66	needleleaf sedge									
2	American licorice	67	nineleaf tomatium									
3	American vetch	68	Nuttall violet									
4	annual sunflower	69	prairie onion									
5	arrowleaf balsamroot	70	pensetmon									
6	aster	71	pink pincushion cactus									
7	ballhead sandwort	72	plains bahia									
8	Baltic rush	73	plains cottonwood									
9	basin wildrye	74	plains muhly	1	108	3	P	N	C	I		
10	bastard toadflax	75	plains reedgrass									
11	big sagebrush	76	ponderosa pine	2	101	3	P	N	W	I		
12	biscuitroot	77	prairie coneflower									
13	bitterroot	78	prairie junegrass	3	33	3	P	N	W	D		
14	blanketflower	79	prairie sandreed									
15	blue flax	80	prairie smoke	4	117	1	P	N	C	I		
16	blue grama	81	prairie thermopsis									
17	bluebunch wheatgrass	82	pricklypear	5	128	3	B	I	C	V		
18	broom snakeweed	83	purple prairieclover									
19	buckwheat	84	pussy toes	6	3	3	P	N	C	D		
20	burdock	85	quackgrass									
21	Canada thistle	86	red threeawn	7	90	3	B	I	C	V		
22	cheatgrass	87	rose spp.									
23	chokecherry	88	rubber rabbitbrush	8	97	4	P	N	W	I		
24	cinquefoil	89	rush skeletonweed									
25	clustered broomrape	90	salsify	9	111	2	P	N	C	I		
26	common starrily	91	Sandberg bluegrass									
27	crested wheatgrass	92	scarlet gaura	10	46	3	P	N	C	I		
28	cudweed sagewort	93	scarlet globemallow									
29	curlycup gumweed	94	segolily mariposa	11	78	1	P	N	C	I		
30	Cusick bluegrass	95	serviceberry									
31	dandelion	96	showy daisy	12	17	1	P	N	C	D		
32	dense clubmoss	97	silver sagebrush									
33	dotted gayfeather	98	sixweeks fescue	13	16	1	P	N	W	I		
34	Douglas fir	99	skunkbush sumac									
35	Drummond milkvetch	100	slender wheatgrass	14	65	1	P	N	C	I		
36	dustymaiden	101	slimflower scurfpea									
37	Fendler threeawn	102	smooth brome	15	82	5	P	N	C	I		
38	field chickweed	103	spikecat									
39	foxtail barley	104	spikesedges	16	40	4	P	N	W	I		
40	fringed sagewort	105	spiny goldenweed									
41	green needlegrass	106	spotted knapweed	17	93	3	P	N	C	I		
42	green sagewort	107	stemless hymenoxys									
43	groundplum milkvetch	108	stemless nailwort	18	51	1	A	I	C	V		
44	hairy goldenaster	109	sun sedge									
45	Hood phlox	110	thickspike wheatgrass	19	125	3	A	N	C	V		
46	Hooker sandwort	111	threadleaf sedge									
47	horsetail	112	threeleaved milkvetch	20	26	3	P	N	C	I		
48	houndstongue	113	timothy									
49	Idaho fescue	114	wavyleaf thistle	21	91	1	P	N	C	I		
50	Indian ricegrass	115	western snowberry									
51	Japanese brome	116	western wallflower	22	70	3	P	N	C	I		
52	Kentucky bluegrass	117	western wheatgrass									
53	leafy spurge	118	western yarrow	23	88	4	P	N	C	I		
54	limber pine	119	white pointloco									
55	little stoneseed	120	white prairie aster	24	126	3	A	I	C	V		
56	low larkspur	121	wild parsley									
57	lupine	122	willow spp.	25	45	3	P	N	C	I		
58	meadow deathcamas	123	winterfat									
59	milkvetch	124	woolly groundsel	26	66	2	P	N	C	I		
60	Missouri goldenrod	125	woolly plantain									
61	Missouri milkvetch	126	yellow alyssum	27	92	3	P	N	W	I		
62	Montana wheatgrass	127	yellow pincushion cactus									
63	narrowleaf cottonwood	128	yellow sweetclover	28	22	1	A	I	C	V		
64	narrowleaf poisonvetch	129	yucca									
65	needleandthread			29	89	3	P	N	W	I		
				30	98	1	A	N	C	V		

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

+5 pts. 1 white. toad

MRD 2015 YOUTH/ADULT PLANT ANATOMY CONTEST FORM

NAME: Key

SCORE: _____

CIRCLE ONE ANSWER PER MULTIPLE CHOICE QUESTION (6 POINTS PER QUESTION & 25 POINTS PER KEYED PLANT - TOTAL OF 150 POINTS)

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

KEY OUT EACH PLANT AND WRITE THE LETTER IN THE BLANK

KEY PLANT #1 Japanese brom **A**

KEY PLANT #2 Western wheatgrass **F**

POINTS POSSIBLE	150
POINTS MISSED	
TOTAL POINTS	

Record points at the top of the form

Y/A STATION 3 - CONTEST FORM 2015

NAME: Key CHAPTER: _____ SCORE: _____

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)

LO SITE #1 LOAMY(LO) (20 Points)

ON SITE #2 OVERFLOW (20 Points)

LOSTP SITE #3 LOAMY Steep (20 Points)

SCORE: _____ /100 Points

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

- 1. D
- 2. C
- 3. C
- 4. B

Quiz Questions

ENTER THE ANSWERS IN THE BOX ABOVE.

1. What is the general topography of site # 2?
 - a. steep side-slope
 - b. top of a hill
 - c. bench (fan) above a water drainage
 - d. creek (drainage) bottom
2. Water movement in a massive soil structure is?
 - a. rapid
 - b. moderate
 - c. slow
3. Caliche is defined as:
 - a. parent material
 - b. heavy clay
 - c. loosely cemented material
 - d. sand
4. Silt particles are formed when:
 - a. acids chemically react with other minerals
 - b. sand grains are mechanically broken and dissolved by chemicals
 - c. pieces of parent stone do not undergo chemical changes
 - d. parent stone is broken down by chemicals to form flat crystals

V/A STATION 4 - CONTEST FORM 2015

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)

44%

37-51%

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) d. D

2) d. D

3) d. D

4) b. B

SCORE: _____ /100 Points

Quiz Questions

ENTER THE ANSWERS IN THE BOX ABOVE.

- Why do we measure Rangeland Health?
 - to evaluate to rangeland ecosystem to see if it is healthy and sustainable
 - to be aware of warning signs that indicate the rangeland is declining in health
 - to help us see if we are meeting our goals
 - all of the above
- Native plants, generally tall, palatable, leafy plants preferred by grazing animals, and dominant in Historic Climax Plant Community, are called ____.
 - invaders
 - increasers
 - optimizers
 - decreaseers
- Which of the following terms means "to describe how similar the current plant community on a site is to the Historic Climax Plant community".
 - Species Composition
 - Historic Climax Plant Community
 - Rangeland Trend
 - Similarity Index
- Increaser plants are defined as mid-sized to short grasses, forbs and shrubs that are fairly unpalatable to livestock or have significant protection from overgrazing such as rhizomatous root systems. Which of the plants below would be considered an increaser?
 - salsify
 - rubber rabbitbrush
 - Kentucky bluegrass
 - basin wildrye

SIMILARITY INDEX WORKSHEET

Ecological Site:

shallow ecol. site

**Present Plant
Composition ^{1/}**

**Historic Climax
Plant Community ^{2/}**

Plant List (A)	(B) Percent Composition	(C) Pounds per acre	(D) Percent Composition	(E) Pounds per acre	Allowable pounds (F)
GRASSES:					
<i>kingpinch wgt</i>	17	119	50	500	119
<i>needleandthread</i>	20	140	10	100	100
<i>blue grama</i>	25	175	5	50	50
<i>prairie junegrass</i>	1	7	1	10	7
<i>sahibana bluegrass</i>	2	14	2	20	14
<i>threadleaf sedge</i>	10	70	2	20	20
FORBS:					
<i>Astragalus spp.</i>	5	35	2	20	20
<i>scarlet alder mallow</i>	5	35	2	20	20
<i>clustered broomrape</i>	T	4	2	20	4
<i>salsify</i>	T	4	non-native	—	—
SHRUBS:					
<i>prickly pear cactus</i>	5	35	5	50	35
<i>fringed sagwort</i>	10	70	5	50	50
TOTAL:	100%	700		* 1000	44%

310

44

85

439

37-51%

SIMILARITY INDEX:

(Column F total, divided by *)

^{1/} Data taken from on-site rangeland inventory.

^{2/} Data taken from the NRCS Ecological Site Description or the Guide for Determining Similarity Index.

* This is not the total of Column E

Y/A STATION 5 - CONTEST FORM 2015

NAME: Key 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) 382 AUMS
- B. (10pts) 85 pairs
- C. (10pts) 3.5 months
- D. (10pts) 282 yearlings
- E. (10pts) 969.2 AUMS
or
1184.6 AUMS

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

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

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

Plot #1	<u>Slight</u>	Moderate	Full	<u>Close</u>	Severe
Plot #2	<u>Slight</u>	Moderate	Full	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 2015
(FILL IN ANSWERS ON CONTEST FORM)

1. The Animal Unit Equivalent (AUE) is based on which of the following factors?
 - a. one 1000 lb cow with a calf less than 4 months of age
 - b. the amount of dry matter required to feed one 1000 lb cow
 - c. the stocking rate of an ecological site
 - d. the kind/class, size and maturity of the animal

2. Plants should not be grazed to this level except during the dormant season:
 - a. slight (1-20%)
 - b. moderate (21-40%)
 - c. full (41-60%)
 - d. close (61-80%)

3. All of these are traits of key species except:
 - a. They provide more than 15% of available forage
 - b. They are usually perennials
 - c. They are important to the management of the plant community
 - d. They are avoided by grazing animals

4. Plant growth points are made of meristematic tissue. An example(s) of this tissue is:
 - a. Apical
 - b. Axillary
 - c. Intercalary
 - d. All of the above

Y/A Stocking Rate Scenario 2015:

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

Jeff and Jim Smith just bought Last Chance Ranch, which consists of 2,600 acres of Native Range, 400 acres of Russian wildrye and 500 acres of Hay aftermath. Last Chance Ranch is in the sedimentary plains, and the average precipitation is 11-14 inches per year. All pastures are fenced separately. The inventory data is summarized below.

Pasture 1 has 1500 acres. 800 acres of Shallow with a similarity index of 55%. 300 acres of Overflow with a similarity index of 40%. 400 acres of Sandy with a similarity index of 60%.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	AUM's Available
Shallow	800	55	.18 .25	144 200
Overflow	300	40	.38 .75	114 225
Sandy	400	60	.31 .43	124 172
TOTALS	1500	XXXX	XXXXXXXX	382 597

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

382 AUMs

Question B. (10pts) If the range health and production improved on all three Ecological Sites to an 80% Similarity Index, how many cow-calf pairs can be run for 7 months?

$$\frac{597 \text{ AUMs}}{7 \text{ M}} = 85.2 \quad 85 \text{ cow/calf pairs}$$

Question C. (10pts) How many months can 100 cow/calf pairs, 5 bulls, and 3 horses graze Pasture 1?

30% SI

$$\frac{597 \text{ AUMs}}{110.5} = 5.4 \text{ months}$$

$$\begin{array}{r} 100 \\ 6.75 \\ 3.75 \\ \hline 110.5 \text{ AUMs} \end{array}$$

$$\frac{382 \text{ AUMs}}{110.5 \text{ AUMs}} = 3.45 \text{ months}$$

3.5 months

Pasture 2 consists of 1100 acres. 700 acres of Clayey range site with a 45% similarity index, and 400 acres of Russian wildrye.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	AUM's Available
Clayey	700	45	.14	98
wildrye	400	—	.6	240
	1100	XXXX	XXXXXXXXXX	338

Question D. (10pts) How many yearling cattle could graze Pasture 2 for two (2) months?

$$\frac{338 \text{ AUMs}}{2 \text{ M}} = \frac{169 \text{ AUs}}{.6 \text{ AUE}} = 281.666$$

282 yearlings

Pasture 3 consists of 900 acres. 400 acres of Thin Loamy Steep with a similarity index of 80%, and a slope of 35%. 500 acres of hay aftermath.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	Discount Factor %	AUM's Available
Thin Loamy Steep	400	80	$400 \times .31 = 124$.4 (60%)	49.6
hay aftermath	500	—	.4	—	200
TOTALS	900	XXXX	XXXXXXXXXX	XXX	249.6

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

$$\begin{matrix} \text{(past.3)} & 249.6 \\ \text{(past.2)} & 338 \\ \text{(past.1)} & 382 \end{matrix} = 969.2$$

$$\text{or } \begin{matrix} \text{(past.1)} & 597 \\ \text{(past.2)} & 338 \\ \text{(past.3)} & 249.6 \end{matrix} = 1184.6$$

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 to the nearest whole number because you cannot have a fraction of an animal. For example, calculation of a number of yearlings is rounded from 333.3 to 333.
3. Round AUM calculations to the nearest tenth.
4. Round months to the nearest tenth.

Y/A Stocking Rate Scenario 2015:

There are 4 questions. Use this sheet to figure out the answers, then TRANSFER THE ANSWERS TO THE CONTEST FORM.

Jeff and Jim Smith just bought Last Chance Ranch, which consists of 2,600 acres of Native Range, 400 acres of Russian wildrye and 500 acres of Hay aftermath. Last Chance Ranch is in the sedimentary plains, and the average precipitation is 11-14 inches per year. All pastures are fenced separately. The inventory data is summarized below.

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Overflow	300	40	.38 .75	114 225
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TOTALS		XXXX	XXXXXXXX	382 597

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

382 Aum's

Question B. (10pts) If the range health and production improved on all three Ecological Sites to an 80% Similarity Index, how many cow-calf pairs can be run for 7 months?

$$\frac{597 \text{ AUM's}}{7 \text{ yr}} = 85 \text{ AU's or } 85 \text{ cow/calf pairs}$$

* Assuming Question A scenario

Question C. (10pts) How many months can 100 cow/calf pairs, 5 bulls, and 3 horses graze Pasture 1?

100 AU	Pairs @ 1.0	382 AUM's
6.75 AU	Bulls @ 1.35	110.5 AU's
3.75 AU	Horses @ 1.25	
110.5 AU		= 3.5 mos.

Pasture 2 consists of 1100 acres. 700 acres of Clayey range site with a 45% similarity index, and 400 acres of Russian wildrye.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	AUM's Available
Clayey	700	45	.14	98
RWR	400	—	.6	240
	1100	XXXX	XXXXXXXX	338

Question D. (10pts) How many yearling cattle could graze Pasture 2 for 2 months?

$$\frac{338 \text{ AUM's}}{2 \text{ m's}} = \frac{169 \text{ AUM's}}{.6 \text{ AUE}} = 282 \text{ yearlings}$$

Pasture 3 consists of 900 acres. 400 acres of Thin Loamy Steep with a similarity index of 80%, and a slope of 35%. 500 acres of hay aftermath.

Ecological Site	Acres	Sim. Index %	Stocking Rate Factor (AUM's/Ac.)	Discount Factor % (60% reduction)	AUM's Available
Thin Loamy	400	80	$400 * .31 = 124$	$* .4$	$= 49.6$
Hay AM.	500	—	.4	—	200.0
TOTALS		XXXX	XXXXXXXX	XXX	249.6

Question E. (10pts) Including all three fields, how many AUMS are available on the Last Chance Ranch?

$$969.6 \text{ AUM's}$$

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.
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