

Texas FFA Range Evaluation and Management CDE Rules



Tenth Revision 8/2020

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HOW THE CONTEST IS CONDUCTED

Judging rangeland is combined into a four-part program. Contestants are asked to:

1. Determine the ecological site and similarity index.
2. Determine the value of the ecological site for beef cattle.
3. Make management recommendations based on the resource value ratings stated in the objectives.
4. Identify plants and give their value for beef cattle.

OTHER CONTEST INFORMATION

- Spend 20 minutes at each location.
- Use 10 minutes at the end of the contest to make sure the score sheet is properly filled out.
- The contest is divided into three phases;
 - (1) Resource Inventory
 - (2) Resource Management.
 - (3) Plant Identification
- Start by making the resource inventory of present or bench mark conditions which involves determining what kind of ecological site is being evaluated and the similarity index of the site. The limiting factors revealed during this process are those to be marked. Then move to the management decisions for cattle. Do not return to marked items on resource inventory.
- If more than one limiting factor occurs (two or more limiting factors with the same value), then make sure that all factors with the lowest value are marked.
- The contest committee should carefully evaluate each location before deciding on the management scenario and numerical objective(s).
- Assume that if a management practice is checked to correct a limiting factor for a criteria, then the value for the component is raised to 40. However, if the component has more than one criteria, use the lowest number. Keep raising limiting factors by checking management practices until the lowest number meets or exceeds the stated objective.

CONTEST SET-UP

Select Four Locations – Ecological sites should be no smaller than 10' x 10' and can be larger if deemed necessary by contest officials. Ecological sites should also be either square or rectangular in shape.

Location 1 - Determine the ecological site.
Determine the similarity index for the site.
Determine the resource value rating of the site for beef cattle.
Make management recommendations based on the stated objective(s).

Location 2 - Determine the ecological site.
Determine the similarity index for the site.
Determine the resource value rating of the site for beef cattle.
Make management recommendations based on the stated objective(s).

Location 3 - Identify the plants and give their characteristics.
Location 4 - Identify the plants and give their characteristics.
Location 5 – Identify the plants and give their characteristics

For ecological sites 1 and 2:

- mark the site boundaries
- mark a selected plant with a flag close to the edge of the site boundary for judging utilization by beef cattle
- place the soil judging pit outside the site boundary

For Plant Identification Site 3, flag 10 plants.

For Plant Identification Site 4, flag 10 plants.

For Plant Identification Site 5, flag 10 plants.

The contestant is given the following:

1. The management scenarios and objectives for each ecological site
2. Appropriate Ecological Site Guides
3. One Beef Cattle Habitat Evaluation Form
4. Texas FFA Range Plant List (names only)

Note – It is strongly suggested to contest officials to remain 5% away from the dividing lines between similarity indexes for those requiring judgment calls on the percentages of plant weights in the site. For example, calling a similarity index 51% when there is a judgment call on the weight of a plant or group of plants within the site that could change the similarity index by several percentage points.

TEXAS FFA RANGE PLANT LIST WITH CHARACTERISTICS

No.	Name	ST	LH	SG	OR	IN	Food
Grasses							
1	Annual Threeawn (<i>Aristida</i> sp.)	S	A	W	N		U
2	Annual Brome (<i>Bromus</i> sp.)	S	A	C	In	Iv	U
3	Bermudagrass (<i>Cynodon dactylon</i>)	S	P	W	In	Iv	D
4	Big Bluestem (<i>Andropogon gerardii</i>)	T	P	W	N		D
5	Blue Grama (<i>Bouteloua gracilis</i>)	S	P	W	N		D
6	Broomsedge Bluestem (<i>Andropogon virginicus</i>)	T	P	W	N		U
7	Buffalograss (<i>Buchloe dactyloides</i>)	S	P	W	N		D
8	Curly Mesquite (<i>Hilaria berlanderi</i>)	S	P	W	N		D
9	Eastern Gamagrass (<i>Tripsacum dactyloides</i>)	T	P	W	N		D
10	Fall Witchgrass (<i>Leptoloma cognatum</i>)	S	P	W	N		D
11	Hairy Grama (<i>Bouteloua hirsute</i>)	S	P	W	N		D
12	Hairy Tridens (<i>Erioneuron pilosum</i>)	S	P	W	N		U
13	Indiangrass (<i>Sorghastrum nutans</i>)	T	P	W	N		D
14	Johnsongrass (<i>Sorghum halapense</i>)	T	P	W	In	Iv	D
15	Little Barley (<i>Hordeum pusillum</i>)	S	A	C	In	Iv	U
16	Little Bluestem (<i>Schizachyrium scorparium</i>)	T	P	W	N		D
17	Old World Bluestem (<i>Bothriochloa ischaemum</i>)	M	P	W	I	IV	D
18	Perennial Dropseed (<i>Sporobolus</i> sp.)	T	P	W	N		D
19	Perennial Threeawn (<i>Aristida</i> sp.)	M	P	W	N		U
20	Purpletop (<i>Tridens flavus</i>)	T	P	W	N		U
21	Red Grama (<i>Bouteloua trifida</i>)	S	P	W	N		U
22	Sand Dropseed (<i>Sporobolus crytandrus</i>)	M	P	W	N		D
23	Sand Lovegrass (<i>Eragrostis trichodes</i>)	M	P	W	N		D
24	Scribner Panicum (<i>Panicum oligoanthes</i>)	S	P	C	N		D
25	Sedge (<i>Carex</i> sp.)	S	P	C	N		D
26	Sideoats Grama (<i>Bouteloua curtipendula</i>)	M	P	W	N		D
27	Silver Bluestem (<i>Bothriochloa saccharoides</i>)	M	P	W	N		U
28	Splitbeard Bluestem (<i>Andropogon ternaries</i>)	M	P	W	N		U
29	Switchgrass (<i>Panicum virgatum</i>)	T	P	W	N		D
30	Texas Bluegrass (<i>Poa arachnifera</i>)	M	P	C	N		D
31	Texas Grama (<i>Bouteloua rigidiseti</i>)	S	P	W	N		U
32	Texas Wintergrass (<i>Nasella leucotricha</i>)	S	P	C	N		D
33	Tumblegrass (<i>Schedonnardus paniculatus</i>)	S	P	W	N		U
34	Vine Mesquite (<i>Panicum obtusum</i>)	M	P	W	N		D
35	Weeping Lovegrass (<i>Eragrotis curvula</i>)	M	P	W	In		D
36	Western Wheatgrass (<i>Pascopyrum smithii</i>)	M	P	C	N		D
37	Wildrye (<i>Elymus</i> sp.)	M	P	C	N		D
38	Windmillgrass (<i>Chloris</i> sp.)	S	P	W	N		U
Legumes							
39	Catclaw Sensitivebriar (<i>Mimosa quadrivalis</i>)		P	W	N		D
40	Bundleflower (<i>Desmanthus</i> sp.)		P	W	N		D
41	Prairie Clover (<i>Dalea</i> sp.)		P	W	N		D
42	Scurfpea (<i>Psoralidium</i> sp.)		P	C	N		U
43	Slender Dalea (<i>Dalea enneandra</i>)		P	W	N		D
44	Vetch (<i>Vica</i> sp.)		A	C	In		D
45	Yellow Neptune (<i>Neptunia lutea</i>)		P	W	N		D

Forbs

46	Annual Sunflower (<i>Helianthus annuus</i>)	A	W	N		D
47	Antelopehorn Milkweed (<i>Asclepias viridis</i>)	P	C	N		U
48	Beebalm (<i>Monarda citriodora</i>)	A	W	N		U
49	Blackeyed Susan (<i>Rudbeckia hirta</i>)	A	W	M		U
50	Common Broomweed (<i>Gutierrezia dracunculoides</i>)	A	W	N		U
51	Compass Plant (<i>Silphium laciniatum</i>)	P	W	N		D
52	Croton (<i>Croton sp.</i>)	A	W	N		U
53	Curlycup Gumweed (<i>Grindelia squarrosa</i>)	P	W	N		U
54	Daisy Fleabane (<i>Erigeron strigosus</i>)	A	C	N		U
55	Dotted Gayfeather (<i>Liatris punctata</i>)	P	W	N		U
56	Engelmann Daisy (<i>Engelmannia peristenia</i>)	P	C	N		D
57	Giant Ragweed (<i>Ambrosia trifida</i>)	A	W	N		U
58	Halfshrub Sundrop (<i>Calyophus serrulatus</i>)	P	W	N		U
59	Heath Aster (<i>Aster ericoides</i>)	P	W	N		U
60	Horseweed (<i>Conyza canadensis</i>)	A	W	N		U
61	Maximilian Sunflower (<i>Helianthus maximiliani</i>)	P	W	N		D
62	Pepperweed (<i>Lepidium virginicum</i>)	A	C	N		D
63	Prairie Coneflower/Mexican Hat (<i>Ratibida columnifera</i>)	P	W	N		U
64	Plains Yucca (<i>Yucca glauca</i>)	P	C	N		U
65	Prickly Pear Cactus (<i>Opuntia macrorhiza</i>)	P	W	N	Iv	U
66	Sagewort (<i>Artemisia ludoviciana</i>)	P	W	N		U
67	Silverleaf Nightshade (<i>Solanum elaeagnifolium</i>)	P	W	N		U
68	Snow-on-the-Mountain (<i>Euphorbia marginata</i>)	A	W	N		U
69	Wax Goldenweed (<i>Haplopappus ciliatus</i>)	A	W	N		U
70	Western Ironweed (<i>Vernonia baldwinii</i>)	P	W	N		U
71	Western Ragweed (<i>Ambrosia psilostachya</i>)	P	W	N		U
72	Wood Sorrell (<i>Oxalis sp.</i>)	A	C	N		U
73	Yarrow (<i>Achillea lanulosa</i> or <i>millefolium</i>)	P	C	N		U

Woodies

74	Blackberry/Dewberry (<i>Rubus sp.</i>)	P	W	N	Iv	U
75	Blackjack Oak (<i>Quercus marilandica</i>)	P	W	N		U
76	Cedar (<i>Juniperus Sp.</i>)	P	C	N	Iv	U
77	Buttonbush (<i>Symphoricarpos orbiculatus</i>)	P	W	N		U
78	Chittamwood (<i>Bumelia lanuginose</i>)	P	W	N		D
79	Eastern Cottonwood (<i>Populus deltoids</i>)	P	W	N		D
80	Elm (<i>Ulmus sp.</i>)	P	W	N		D
81	Fragrant Sumac/Skunkbush (<i>Rhus aromatic</i>)	P	W	N		U
82	Greenbriar (<i>Smilax bona-nox</i>)	P	W	N		D
83	Hackberry (<i>Celtis sp.</i>)	P	W	N		D
84	Sumac (<i>Rhus sp.</i>)	P	W	N		U
85	Live Oak (<i>Quercus virginiana</i>)	P	W	N		U
86	Mesquite (<i>Prosopis glandulosa</i>)	P	W	N	Iv	U
87	Post Oak (<i>Quercus stellata</i>)	P	W	N		U
88	Plum (<i>Prunus sp.</i>)	P	W	N		U
89	Redbud (<i>Cercis canadensis</i>)	P	W	N		D
90	Soapberry (<i>Sapinudus drummondii</i>)	P	W	N		U

Copy of Scantron to be developed by Clay Ewell

HOW THE CONTEST IS SCORED

Ecological Site - 25 points (17%)
Similarity Index - 40 points (27%)
Habitat Rating - 20 points (13%)
Limiting Factors - 15 (3 at 5 pts. each, 10%)
Beef Cattle Management Practices - 50 (10 at 5 pts. each, 33%)
Total for each ecological site of 150 points

Plant ID and Characteristics

10 points for each correct plant

1 point for each characteristic (5 pts. total)

No points given if plant is incorrect

Total Plant ID Score of 450 points

Contest total

- Ecological Site 1 - 150 points (20%)
- Ecological Site 2 - 150 points (20%)
- Plant ID - 450 points (60%)
- Total Score - 750 points per individual, 2,250 team

ECOLOGICAL SITES

The following pages have a description of each of the different ecological sites used in the Texas FFA Range Evaluation and Management Career Development Event. **For contest purposes, plants not listed on the Texas Range Plant List will be considered other natives, non-invasive, and undesirable unless identified as such by contest officials, and will be used in determining the Similarity Index of a site.**

Bottomland
Deep Prairie
Shallow Prairie
Deep Savanna
Shallow Savanna
Steep

Bottomland

Alluvial soils that are subject to flooding and include riparian zones and overflow areas. The site is composed of deep productive soils subject to frequent or occasional overflow.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	20%	_____	_____	_____	_____
Big Bluestem	40%	_____	_____	_____	_____
Switchgrass					
Indiangrass					
Eastern Gamagrass					
Sideoats Grama	10%	_____	_____	_____	_____
Silver Bluestem					
Wildrye					
Texas Wintergrass					
Annual Threeawn	5%	_____	_____	_____	_____
Perennial Threeawn					
Buffalograss					
Hairy Grama					
Fall Witchgrass					
Vine Mesquite					
Texas Bluegrass					
Perennial Dropseed					
Other Natives					
Forbs and Legumes					
Broomweed	5%	_____	_____	_____	_____
Western Ragweed					
Sagewort					
Croton					
Prairie Clover					
Engelmann Daisy					
Snow-on-the-Mountain					
Maximilian Sunflower					
Dotted Gayfeather					
Beebalm					
Compass Plant					
Heath Aster					
Other Natives					
Woody					
Eastern Cottonwood	20%	_____	_____	_____	_____
Fragrant Sumac					
Flameleaf Sumac					
Greenbriar					
Buttonbush					
Hackberry					
Plum					
Live Oak					
Western Soapberry					
Elm					
Other Natives					
Invasives					
	0%	_____	_____	_____	_____
Total Percentage					
		_____	_____	_____	_____

Deep Prairie

Upland soils more than 20 inches in depth with slopes of less than a 15%.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	34%	_____	_____	_____	_____
Big Bluestem	23%	_____	_____	_____	_____
Switchgrass					
Indiangrass					
Eastern Gamagrass					
Sideoats Grama	6%	_____	_____	_____	_____
Silver Bluestem	6%	_____	_____	_____	_____
Wildrye	6%	_____	_____	_____	_____
Texas Wintergrass					
Annual Threeawn	6%	_____	_____	_____	_____
Perennial Threeawn					
Buffalograss					
Hairy Grama					
Fall Witchgrass					
Vine Mesquite					
Texas Bluegrass					
Perennial Dropseed					
Other Natives					
Forbs and Legumes					
Western Ragweed	10%	_____	_____	_____	_____
Sagewort					
Halfshrub Sundrop					
Croton					
Prairie Clover					
Engelmann Daisy					
Snow-on-the-Mountain					
Maximilian Sunflower					
Dotted Gayfeather					
Yellow Neptune					
Heath Aster					
Other Natives					
Woody					
Fragrant Sumac	9%	_____	_____	_____	_____
Flameleaf Sumac					
Hackberry					
Plum					
Other Natives					
Invasives					
	0%	_____	_____	_____	_____
Total Percentage					
		_____	_____	_____	_____

Shallow Prairie

Upland soils less than 20 inches in depth with slopes of less than 15%.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	48%	_____	_____	_____	_____
Big Bluetem } Switchgrass } Indiangrass }	18%	_____	_____	_____	_____
Sideoats Grama	10%	_____	_____	_____	_____
Annual Threeawn } Perennial Threeawn } Buffalograss } Hairy Grama } Silver Bluestem } Fall Witchgrass } Wildrye } Texas Wintergrass } Vine Mesquite } Perennial Dropseed } Other Natives }	9%	_____	_____	_____	_____
Forbs and Legumes	9%	_____	_____	_____	_____
Western Ragweed					
Sagewort					
Halfshrub Sundrop					
Croton					
Prairie Clover					
Engelmann Daisy					
Snow-on-the-Mountain					
Maximilian Sunflower					
Dotted Gayfeather					
Yellow Neptune					
Compass Plant					
Heath Aster					
Other Natives					
Woody	6%	_____	_____	_____	_____
Fragrant Sumac					
Flameleaf Sumac					
Hackberry					
Plum					
Other Natives					
Invasives	0%	_____	_____	_____	_____
Total Percentage		_____	_____	_____	_____

Deep Savanna

Upland soils more than 20 inches in depth, slopes of less than a 15%, with scattered post oaks, blackjack oaks, live oaks, or other non-invasive woody vegetation with greater than 10% cover more than 6 feet tall.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	26%	_____	_____	_____	_____
Big Bluestem } Switchgrass } Indiangrass }	15%	_____	_____	_____	_____
Buffalograss	7%	_____	_____	_____	_____
Sideoats Grama } Hairy Grama } Silver Bluestem } Scribner Panicum } Wildrye } Sand Lovegrass } Texas Wintergrass } Vine Mesquite } Perennial Dropseed } Purpletop } Other Natives }	10%	_____	_____	_____	_____
Forbs and Legumes	15%	_____	_____	_____	_____
Prairie Clover					
Bundleflower					
Engelmann Daisy					
Snow-on-the-Mountain					
Dotted Gayfeather					
Catclaw Sensitivebriar					
Scurfpea					
Plains Yucca					
Other Natives					
Woody	15%	_____	_____	_____	_____
Hackberry					
Plum					
Blackjack Oak					
Post Oak					
Live Oak					
Flameleaf Sumac					
Fragrant Sumac					
Greenbriar					
Elm					
Other Natives					
Invasives	0%	_____	_____	_____	_____
Total Percentage		_____	_____	_____	_____

Shallow Savanna

Upland soils less than 20 inches in depth, slopes of less than a 15%, with scattered post oaks, blackjack oaks, live oaks, or other non-invasive woody vegetation with greater than 10% cover more than 6 feet tall.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	35%	_____	_____	_____	_____
Big Bluestem } Switchgrass } Indiangrass }	15%	_____	_____	_____	_____
Sideoats Grama } Silver Bluestem } Texas Wintergrass } Perennial Dropseed } Perennial Threawn }	20%	_____	_____	_____	_____
Buffalograss } Sedges } Fall Witchgrass } Wildrye } Curly Mesquite } Other Natives }	10%	_____	_____	_____	_____
Forbs and Legumes	5%	_____	_____	_____	_____
Western Ragweed					
Sagewort					
Halfshrub Sundrop					
Prairie Clover					
Bundleflower					
Engelmann Daisy					
Dotted Gayfeather					
Catclaw Sensitivebriar					
Scurfpea					
Prairie Coneflower					
Heath Aster					
Other Natives					
Woody	15%	_____	_____	_____	_____
Redbud					
Hackberry					
Blackjack Oak					
Post Oak					
Live Oak					
Flameleaf Sumac					
Fragrant Sumac					
Greenbriar					
Elm					
Other Natives					
Invasives	0%	_____	_____	_____	_____
Total Percentage		_____	_____	_____	_____

Steep

Upland soils with slopes of greater than 15%.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	30%	_____	_____	_____	_____
Big Bluestem } Indiangrass }	20%	_____	_____	_____	_____
Sideoats Grama	15%	_____	_____	_____	_____
Perennial Threeawn } Hairy Grama } Silver Bluestem } Sedges } Fall Witchgrass } Texas Wintergrass } Perennial Dropseed } Other Natives }	10%	_____	_____	_____	_____
Forbs and Legumes	10%	_____	_____	_____	_____
Western Ragweed					
Sagewort					
Prairie Clover					
Bundleflower					
Engelmann Daisy					
Maximilian Sunflower					
Dotted Gayfeather					
Catclaw Sensitivebriar					
Scurfpea					
Vetch					
Plains Yucca					
Other Natives					
Woody	15%	_____	_____	_____	_____
Redbud					
Hackberry					
Plum					
Elm					
Other Natives					
Invasives	0%	_____	_____	_____	_____
Total Percentage		_____	_____	_____	_____

SIMILARITY INDEX

For contest purposes, the SI will be determined by comparing the present vegetation (species composition by weight at the end of the growing season in an ungrazed condition) to the presumed original dominant plants on that site historically. The contestant will be provided with Ecological Site Guides that will have the presumed original dominant plants, along with their allowable percentages, for that site.

When determining the percentage contribution of Woody Plants (shrubs and trees), Plains Yucca, and Prickly Pear Cactus in an ecological site, percentage of canopy cover in the ecological site will be used. For example, if a post oak was in the site and the canopy covered 25% of the site, then the percentage contribution for the post oak would be 25%.

The SI is expressed as a percentage from 0 to 100%. Plants native to the site count in percent composition toward the SIMILARITY INDEX (SI). Plants native to the site but not specifically listed in categories are counted as “other natives.” The percentage of invasive plants do not count in the SI index rating.

The Similarity Index is expressed as a percent of how close or similar the plant community on the present site is as compared to the original plant composition prior to European settlement. The Similarity Indexes are:

- 76% - 100%
- 51% - 75%
- 26% - 50%
- 0% - 25%

GUIDE TO MANAGEMENT PRACTICES FOR BEEF CATTLE

Each management practice stands alone. One does not affect the other. For example, a site may be 50% cedar. Depending upon the management goal, the site could require two management practices; Practice 4 – Apply Woody Plant Control and Practice 9 – Apply Invasive Plant Control.

- 1. CONTINUE PRESENT MANAGEMENT** — Use when the current management objective is met by the present condition of the site.
- 2. BEGIN A PLANNED GRAZING SYSTEM** — Use when forage production and/or forage diversity is the limiting factor.
- 3. APPLY FORB OR GRASS CONTROL** — Use when forage production and/or forage diversity is the limiting factor because of undesirable forbs or grasses when they exceed 50% (by weight) of the plant community.

4. APPLY WOODY PLANT CONTROL — Use when forage production, forage diversity, or grazing restraint is the limiting factor because of woody plants when they exceed 30% canopy cover. **Woody plants found on the site but not included on the Texas Range Plant List will be considered for grazing restraint.**

5. DECREASE STOCKING RATE FOR BEEF CATTLE— Use when forage utilization is the limiting factor because of overuse.

6. INCREASE STOCKING RATE FOR BEEF CATTLE— Use when forage utilization is the limiting factor because of lack of use.

Note – When evaluating utilization, use current season’s growth for cool season plants. Prior to May 15, use the previous season’s growth for warm season plants. The May 15 deadline for utilization applies only to utilization and is not applicable to the ecological sites or any other part of the contest.

7. CHANGE THE KIND OF GRAZING/BROWSING ANIMAL — Use when grazing accessibility or grazing restraint is the limiting factor because of terrain or woody cover.

8. DEVELOP WATER FOR BEEF CATTLE — Use when water is the limiting factor because of distance to water.

Note: Distance to water will be given.

9. APPLY INVASIVE PLANT CONTROL — Use when invasive plants are the limiting factor because of their presence on the site. Use to maintain the integrity of the ecological site when any invasive herbaceous or woody plant occurs. Control may be in the form of prescribed fire, herbicide, biological, mechanical, or grazing/browsing. Often, combinations of the above treatments are required. Some invasive plants are difficult to control with existing technology. If more than one invasive plant occurs on the site, choose the plant with the lowest resource value rating.

10. PLANT ADAPTED FORAGE SPECIES— Use when forage production is the limiting factor and the Similarity Index is 10% or less. This usually occurs on land that has been farmed and not reseeded. Defer grazing until the Desired Plant Community is established. Control competitive plants and invasive species with fire, grazing, or herbicide.

Management Goal

The contestant will be given a management goal for each ecological site to be evaluated. This management goal will be range from 0 to 40. The contestant will use the Beef Cattle Habitat Evaluation Form to rate each criteria and give it the appropriate rating. Each criteria below the management goal would require a management practice to correct or improve it.

BEEF CATTLE HABITAT EVALUATION FORM

Habitat Requirements: Essential habitat components needed for survival and propagation of the species.

For beef cattle, evaluate (A) forage, (B) distribution factors, and (C) site integrity.

A. Forage Components: Forage of annual and perennial grass, forbs, legumes, and woody plants.

				Circle Correct Value	
				Site	
				1	2
1. Forage Production - How abundant (composition by weight) are the desirable food producing plants?					
Site has 76-100% by weight of desirable forage plants for beef cattle				<u>40</u>	<u>40</u>
Site has 51-75% by weight of desirable forage plants for beef cattle				<u>30</u>	<u>30</u>
Site has 26-50% by weight of desirable forage plants for beef cattle				<u>20</u>	<u>20</u>
Site has 0-25% by weight of desirable forage plants for beef cattle				<u>10</u>	<u>10</u>
2. Forage Diversity - How diverse is the desirable food producing plant community? (plant types = grasses, forbs, legumes, and woodies.)					
Food plants represented by 4 of the 4 major plant types				<u>40</u>	<u>40</u>
Food plants represented by 3 of the 4 major plant types				<u>30</u>	<u>30</u>
Food plants represented by 2 of the 4 major plant types				<u>20</u>	<u>20</u>
Food plants represented by 1 of the 4 major plant types				<u>10</u>	<u>10</u>
3. Forage Utilization - How long are the leaves of key (marked) utilization plants?					
	Tallgrass	Midgrass	Shortgrass		
Light Use	(>8")	(>5")	(>4")	<u>30</u>	<u>30</u>
Moderate Use	(>5-8")	(4-5")	(3-4")	<u>40</u>	<u>40</u>
Heavy Use	(4-5")	(2-3")	(1-2")	<u>20</u>	<u>20</u>
Severe Use	(<4")	(<2")	(<1")	<u>10</u>	<u>10</u>
Lowest score of 3 rated criteria = Limiting Factor for Forage Factors				<input type="text"/>	<input type="text"/>

B. Distribution Components - Physical factors that limit the grazing animal

				Circle Correct Value	
				Site	
				1	2
1. Grazing Accessibility - How accessible are the forage plants to grazing animals?					
Slope less than 5%				<u>40</u>	<u>40</u>
Slope 5-10% and smooth				<u>35</u>	<u>35</u>
Slope 5-10% and rough (exposed surface rock)				<u>25</u>	<u>25</u>
Slope 11-15% and smooth				<u>30</u>	<u>30</u>
Slope 11-15% and rough (exposed surface rock)				<u>20</u>	<u>20</u>
Slope greater than 15% and smooth				<u>15</u>	<u>15</u>
Slope greater than 15% and rough (exposed surface rock)				<u>10</u>	<u>10</u>

2. Grazing Restraint - How much woody cover is there below 6 feet?

Brush canopy cover less than 30%	<u>40</u> <u>40</u>
Brush canopy cover 31-50%	<u>30</u> <u>30</u>
Brush canopy cover 51-80%	<u>20</u> <u>20</u>
Brush canopy cover greater than 80%	<u>10</u> <u>10</u>

3. Water - How far is water from the grazing site? (Given)

Distance less than or equal to 1/2 mile	<u>40</u> <u>40</u>
Distance greater than 1/2 up to 1 mile	<u>30</u> <u>30</u>
Distance greater than 1 up to 1 1/2 miles	<u>20</u> <u>20</u>
Distance greater than 1 1/2 up to 2 miles	<u>10</u> <u>10</u>
Distance greater than 2 miles or not available in the grazing unit	<u>0</u> <u>0</u>

Lowest score of 3 rated criteria for Distribution Factors

--	--

C. Site Integrity - Invasive plants.

1. Are invasive plants present?

No – or does not exceed 5%	<u>40</u> <u>40</u>
Yes – resource value rating desirable	<u>20</u> <u>20</u>
Yes – resource value rating undesirable	<u>10</u> <u>10</u>

Lowest score of 1 rated criteria = Limiting Factor for Site Integrity

--	--

Record your observations for each site

Site 1. Summary	(A) Forage Components	(B) Distribution Components	(C) Site Integrity
	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>

Habitat Rating Based on the Limiting Factor (lowest value)

Excellent_____ Good_____ Fair_____ Poor_____

(31 to 40) (21 to 30) (11 to 20) (<11)

Site 2. Summary	(A) Forage Components	(B) Distribution Components	(C) Site Integrity
	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>	<input style="width: 40px; height: 25px;" type="text"/>

Habitat Rating Based on the Limiting Factor (lowest value)

Excellent_____ Good_____ Fair_____ Poor_____

(31 to 40) (21 to 30) (11 to 20) (<11)

Beef Cattle Habitat Limiting Factors and Habitat Rating

Each ecological site will be given an overall habitat rating. This rating will be determined by the lowest factor or factors as rated on the Beef Cattle Habitat Evaluation Form.

Excellent – all rating factors are between 31 and 40

Good - no rating factors are below 21

Fair – no rating factors are below 11

Poor – at least one rating factor is below 11

The rating factors are divided into three categories: Forage Factors, Distribution Factors, and Site Integrity. The rating for each category will be the lowest rated criteria within that category. For example, Forage Factors has three criteria; Forage Production, Forage Diversity, and Forage Utilization. After evaluating the site, a contestant rated Forage Production a 40, Distribution Factors a 40, and Forage Utilization a 10. The Forage category would be given an overall rating of 10. This would be repeated for the two other categories.

Once the limiting factors are determined, the contestant will mark the most limiting factor on the scorecard in Beef Cattle Habitat Limiting Factors. If two categories have the same numerical rating, then both would be marked on the scorecard. It is possible that one, two, or all three limiting factors could be marked. Always mark the most limiting factor, even if it is higher than the management goal.

An Ecological site can be rated no higher than the most limiting factor. The most limiting factor would be the criteria that would have the category with the lowest rating from the Beef Cattle Habitat Evaluation Form. For example if an ecological site had the following ratings; Forage Factors is a 30, Distribution Factors is a 20, and Site Integrity is a 40. The overall habitat rating would be fair because of Distribution Factors. Once this is determined, the contestant would mark the appropriate Beef Cattle Habitat Rating on the scorecard in the area titled Beef Cattle Habitat Rating.

PLANT IDENTIFICATION

There will be 30 plants flagged for identification in three different sites. The contestant will have 20 minutes to identify and mark the characteristics for each site of 10 plants. The contestants will move through the plants at their own pace. The group leader will let the contestants know when there are 5 minutes left in the 20 minute time period. The contestants may not physically touch any of the flagged plants. The contestant may use their pencil to steady the plant in order to observe it more closely unless otherwise directed by the group leader. The plants selected will be from the Texas Range Plant List.

For each plant the contestant will:

Identify the plant and mark it on the scorecard by marking the number of the plant on the Texas Range plant list

Mark the characteristics of the plant in the appropriate section of the scorecard. The characteristics for each plant are identified on Texas Range Plant List.

The characteristics to be marked are:

- Life history (annual or perennial)
- Season of Growth (cool or warm)
- Origin (native or introduced)
- Invasive (mark those plants identified as invasive)
- Food Value for Beef Cattle (desirable or undesirable)

Examples of Evaluating Ecological Sites

Example 1

The contestant will be given the following information.

The management goal is 30
Distance to water is $\frac{3}{4}$ of a mile.

The contestant must then evaluate the site:

1. Kind of Site

The contestant observes that the pit or hole exposing the soil depth is 28 inches deep, the slope is 3%, and the site is less than 10% canopy at 6 feet.

This site would be a Deep Prairie. The contestant would mark Deep Prairie on the scantron. There is a description of each of the sites at the top of the site guide for each kind of site.

2. Similarity Index

The contestant would then choose the appropriate site guide to determine the Similarity Index, which in this case is a Deep Prairie. The contestant examines the site and identifies what plants are in the site and their percentage contribution to the forage weight of the site.

The contestant observes in the site:

Little Bluestem 48%	Western Ragweed – 3%
Switchgrass 14%	Dotted Gayfeather 2%
Sideoats Grama 4%	Other Native Forbs 5%
Texas Wintergrass 10%	Hackberry 5%
Perennial Dropseed 2%	Mesquite 3%
Other Native Grasses – 4%	

The contestant would complete the site guide as follows:
Deep Prairie

Upland soils more than 20 inches in depth with slopes of less than a 15%.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	34%	48		34	
Big Bluestem	23%	14		14	
Switchgrass					
Indiangrass					
Eastern Gamagrass					
Sideoats Grama	6%	4		4	
Silver Bluestem	6%	0		0	
Wildrye	6%	10		6	
Texas Wintergrass					
Annual Threeawn	6%	6		6	
Perennial Threeawn					
Buffalograss					
Hairy Grama					
Fall Witchgrass					
Vine Mesquite					
Texas Bluegrass					
Perennial Dropseed					
Other Natives					
Forbs and Legumes	10%	10		10	
Western Ragweed					
Sagewort					
Halfshrub Sundrop					
Croton					
Prairie Clover					
Engelmann Daisy					
Snow-on-the-Mountain					
Maximilian Sunflower					
Dotted Gayfeather					
Yellow Neptune					
Heath Aster					
Other Natives					
Woody	9%	5		5	
Fragrant Sumac					
Flameleaf Sumac					
Hackberry					
Plum					
Other Natives					
Invasives	0%	3		0	
Total Percentage		100		79	

Notice that the observed percentages should add up to 100%. The allowable percentage only adds up to 79%. When calculating similarity index the contestant can use up to the allowable percentage but not more than it. In this case the observed percentage of Little Bluestem was 48%. For calculating the similarity index though, only 34% of the Little Bluestem may be used. If the observed percentage of the plant is below or at the allowable percentage, then all may be used. For example, the allowable percentage of Sideoats Grama was 6%. The observed percentage was 4%. 4% was then used in calculating the similarity index. The percentage of invasive plants should be calculated in the observed percentage but has a zero in allowable percentage.

Since the similarity index of this site was 79, the contestant would mark 76 – 100% on the scantron in the area for Similarity Index.

3. Beef Cattle Habitat Evaluation Form

The contestant would now complete the Beef Cattle Habitat Evaluation Form since the remaining judgements on the score card; beef cattle limiting factors, beef cattle habitat rating, and recommended management practices for beef cattle; are determined after completion of this form.

Each criteria in the Beef Cattle Habitat Evaluation Form is rated and the appropriate rating is selected. The similarity index site guide completed earlier will supply much of the information needed to complete the Beef Cattle Habitat Evaluation Form.

For example, a contestant evaluates the criteria and finds the following:

Forage Factors

- A1. Forage Production – from the plants found in the similarity index above we find that the composition by weight of desirable plants was 83%. This would be rated a 40.
- A2. Forage Diversity – from the plants found above in the similarity index, we have a desirable grass and a desirable woody. This is 2 out of the four plant types. This would be rated 20.
- A3. Forage Utilization – this will be determined by evaluating the marked plant along the edge of the ecological site. For this example a little bluestem plant was marked. The contestant found the leaves to be 6 inches in length. Since little bluestem is of tall stature, this would be rated moderate use and receive a 40.

Distribution Factors

- B1. Grazing Accessibility – the ecological site had a slope of 3%. The rating would then be a 40.
- B2. Grazing Restraint – the ecological site only had 5% woody cover. This factor is only rated for the cover below 6 feet. Any cover above 6 feet does not count towards grazing restraint. It is possible that a site could have more than 30% canopy but if all was above 6 feet, it would not be counted for grazing restraint. This site would receive a 40.
- B3. Water – The contestant will be supplied this information. In this example, water is $\frac{3}{4}$ of a mile away. This would be rated a 30.

Site Integrity

- C1. Are Invasive Plants Present – the invasive plant total for the ecological site was 3%. This is less than 5% so this site would be rated a 40. In the case there are desirable invasive plants and undesirable invasive plants in the site, always choose the undesirable invasive plant to rate the site.

The final ratings for each category above are then as follows.
Remember the rating can only be as good as the lowest number.

- A. Forage Production – 20, because of forage diversity
- B. Distribution Factors – 30, because of distance to water
- C. Site Integrity – 40

4. Beef Cattle Habitat Limiting Factors

The contestant can now determine the Beef Cattle Habitat Limiting Factors. The lowest rating was Forage Production with a 20. The contestant would then mark Y (yes) for the most limiting factor, in this case Forage Production, on the scantron in area for Beef Cattle Limiting Factors. The other factors would be marked N (no). If there are two or more factors with the same rating, then each would be marked. The contestant must always mark a limiting factor, even if it is above the management goal.

5. Beef Cattle Habitat Rating

The contestant can now determine the Beef Cattle Habitat Rating. Again, the rating can only be as good as the most limiting factor. Since our lowest rating was a 20, this site would receive a rating of Fair. The contestant would mark Fair in the area of the scantron for Beef Cattle Habitat Rating.

6. Recommended Management Practices for Beef Cattle

The goal of this section is to recommend management practices to correct any criteria that were rated below the management goal. In the example above, the management goal was a 30 and only 1 criteria was below the goal; Forage Diversity with a 20. Only one management practice would be needed to correct this. That practice is Begin a Planned Grazing System. In the area of the scantron titled

Recommended Practices for Beef Cattle, the contestant would mark Y (yes) for this practice. All other practices would be marked N (no).

Following is an example of how the scantron would be marked for Example 1.

Texas Range Form #602TX-6

Incorrect Marks: Correct Mark:

Team Name / Additional Info: Example 1

Team #	Last Name	First Name
0		
1	A	A
2	B	B
3	C	C
4	D	D
5	E	E
6	F	F
7	G	G
8	H	H
9	I	I
	J	J
	K	K
	L	L
	M	M
	N	N
	O	O
	P	P
	Q	Q
	R	R
	S	S
	T	T
	U	U
	V	V
	W	W
	X	X
	Y	Y
	Z	Z

Code: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Resource Inventory - Present Conditions

Ecological Sites (one answer per site, 25 points): 1 Site 2
 Bottomland (1) (2)
 Deep Prairie (1) (2)
 Shallow Prairie (1) (2)
 Deep Savanna (1) (2)
 Shallow Savanna (1) (2)
 Steep (1) (2)

Similarity Index (one answer per site, 40 points): 1 Site 2
 76% - 100% (1) (2)
 51% - 75% (1) (2)
 26% - 50% (1) (2)
 0% - 25% (1) (2)

Beef Cattle Habitat Rating (one answer per site, 20 points): 1 Site 2
 Excellent (31-40) (1) (2)
 Good (21-30) (1) (2)
 Fair (11-20) (1) (2)
 Poor (<11) (1) (2)

Beef Cattle Habitat Limiting Factors (5 points per factor): 1 Site 2
 A - Forage Factors (Y) (N) (Y) (N)
 B - Distribution Factors (Y) (N) (Y) (N)
 C - Site Integrity (Y) (N) (Y) (N)

Recommended Management Practices

Recommended Management Practices for Beef Cattle (5 points per practice): 1 Site 2

Continue Present Management	(Y) (N)	(Y) (N)
Begin a Planned Grazing System	(Y) (N)	(Y) (N)
Apply Forb or Grass Control	(Y) (N)	(Y) (N)
Apply Woody Plant Control	(Y) (N)	(Y) (N)
Decrease Stocking Rate for Beef Cattle	(Y) (N)	(Y) (N)
Increase Stocking Rate for Beef Cattle	(Y) (N)	(Y) (N)
Change the Kind of Grazing/Browsing Animal	(Y) (N)	(Y) (N)
Develop Water for Beef Cattle	(Y) (N)	(Y) (N)
Apply Invasive Plant Control	(Y) (N)	(Y) (N)
Plant Adapted Forage Species	(Y) (N)	(Y) (N)

Example 2

The contestant will be given the following information.

The management goal is 35

Distance to water is 1.75 miles

The contestant must then evaluate the site:

1. Kind of Site

The contestant observes that the pit or hole exposing the soil depth is 15 inches deep and the slope is 7% and smooth. The site is more than 10% canopy at 6 feet. The contestant also observes that the canopy below 6 feet is 38%.

This site would be a Shallow Savanna. The contestant would mark Shallow Savanna on the scantron. There is description of each of the sites at the top of the site guide for each kind of site.

2. Similarity Index

The contestant would then choose the appropriate site guide to determine the Similarity Index, which in this case is a Shallow Savanna. The contestant examines the site and identifies what plants are in the site and their percentage contribution to the forage weight of the site.

The contestant observes in the site:

Little Bluestem 10%

Indiangrass 22%

Silver Bluestem 3%

Perennial Threeawn 2%

Other Native Grasses 4%

Western Ragweed 4%

Engelmann Daisy 2%

Catclaw Sensitivebriar 2%

Prairie Coneflower 6%

Other Native Forbs 4%

Post Oak 30%

Greenbriar 4%

Cedar 7%

The contestant would complete the site guide as follows;

Shallow Savanna

Upland soils less than 20 inches in depth, slopes of less than a 15%, and with scattered post oaks, blackjack oaks, live oaks and other non-invasive woody vegetation with greater than 10% cover more than 6 feet tall.

	Site Composition Maximum	Observed Composition		Percent Counted Toward SI	
		Site 1	Site 2	Site 1	Site 2
Grasses					
Little Bluestem	35%	__10__	_____	__10__	_____
Big Bluestem	15%	__22__	_____	__15__	_____
Switchgrass					
Indiangrass					
Sideoats Grama	20%	__5__	_____	__5__	_____
Silver Bluestem					
Texas Wintergrass					
Perennial Dropseed					
Perennial Threawn					
Buffalograss	10%	__4__	_____	__4__	_____
Sedges					
Fall Witchgrass					
Wildrye					
Curly Mesquite					
Other Natives					
Forbs and Legumes					
Western Ragweed	5%	__18__	_____	__5__	_____
Sagewort					
Halfshrub Sundrop					
Prairie Clover					
Bundleflower					
Engelmann Daisy					
Dotted Gayfeather					
Catchlaw Sensitivebriar					
Scurfpea					
Prairie Coneflower					
Heath Aster					
Other Natives					
Woody					
Redbud	15%	__34__	_____	__15__	_____
Hackberry					
Blackjack Oak					
Post Oak					
Live Oak					
Flameleaf Sumac					
Fragrant Sumac					
Greenbriar					
Elm					
Other Natives					
Invasives					
	0%	__7__	_____	__0__	_____
Total Percentage					
		__100__	_____	__59__	_____

Notice that the observed percentages should add up to 100%. The allowable percentage only adds up to 59%. When calculating similarity index the contestant can use up to the allowable percentage but not more than it. In this case the observed percentage of Indiangrass was 22%. For calculating the similarity index though, only 15% of the Indiangrass may be used. If the observed percentage of the plant is below or at the allowable percentage, then all may be used. For example, the allowable percentage of Little Bluestem was 35%. The observed percentage was 10%. 10% was then used in calculating the similarity index. The percentage of invasive plants should be calculated in the observed percentage but has a zero in allowable percentage.

Since the similarity index of this site was 59, the contestant would mark 51 - 75% on the scantron in the area for Similarity Index.

3. Beef Cattle Habitat Evaluation Form

The contestant would now complete the Beef Cattle Habitat Evaluation Form since the remaining judgements on the score card; beef cattle limiting factors, beef cattle habitat rating, and recommended management practices for beef cattle; are determined after completion of this form.

Each criteria in the Beef Cattle Habitat Evaluation Form is rated and the appropriate rating is selected. The similarity index site guide completed earlier will supply much of the information needed to complete the Beef Cattle Habitat Evaluation Form.

For example, a contestant evaluates the criteria and finds the following:

Forage Factors

- A1. Forage Production – from the plants found in the similarity index above we find that the composition by weight of desirable plants was 40%. This would be rated a 20.
- A2. Forage Diversity – from the plants found above in the similarity index, we have a desirable grass, a desirable forb, a desirable legume, and a desirable woody. This is four out of the four plant types. This would be rated 40.
- A3. Forage Utilization – this will be determined by evaluating the marked plant along the edge of the ecological site. For this example an Indiangrass plant was marked. The contestant found the leaves to be 4 inches in length. Since Indiangrass is of tall stature, this would be rated heavy use and receive a 20.

Distribution Factors

- B1. Grazing Accessibility – the ecological site had a slope of 7% and smooth. The rating would then be a 35.
- B2. Grazing Restraint – the ecological site had 38% woody cover below 6 feet. Any cover above 6 feet does not count towards grazing restraint. It is possible that a site could have more than 30% canopy but if all was above 6 feet, it would not be counted for grazing restraint. This site would receive a 30.
- B3. Water – The contestant will be supplied this information. In this example, water is 1.75 miles away. This would be rated a 10.

Site Integrity

- C1. Are Invasive Plants Present – the invasive plant total for the ecological site was 7% cedar which is an undesirable invasive plant. This is more than 5% so this site would be rated a 10. In the case there are desirable invasive plants and undesirable invasive plants in the site, always choose the undesirable invasive plant to rate the site.

The final ratings for each category above are then as follows.
Remember the rating can only be as good as the lowest number.

- A. Forage Production – 20, because of forage production and utilization
- B. Distribution Factors – 10, because of distance to water
- C. Site Integrity – 10, because of more than 5% undesirable invasive Plants.

4. Beef Cattle Habitat Limiting Factors

The contestant can now determine the Beef Cattle Habitat Limiting Factors. There were two ratings that were 10; Distribution Factors and Site Integrity. The contestant would then mark Y (yes) for both of these limiting factors, in this case Distribution Factors and Site Integrity, on the scantron in the area for Beef Cattle Limiting Factors. The other factor would be marked N (no). If there are two or more factors with the same rating, then each would be marked. The contestant must always mark a limiting factor, even if it is above the management goal.

5. Beef Cattle Habitat Rating

The contestant can now determine the Beef Cattle Habitat Rating. Again, the rating can only be as good as the most limiting factor. Since our lowest rating was a 10, this site would receive a rating of Poor. The contestant would mark Poor in the area of the scantron for Beef Cattle Habitat Rating.

6. Recommended Management Practices for Beef Cattle

The goal of this section is recommend management practices to correct any criteria that were rated below the management goal. In the example above, the management goal was a 35 and 5 criteria were below the management goal; Forage Production with a 20, Utilization with a 10, Grazing Restraint with a 30, Water with a 10, and Site Integrity with a 10.

Six management practices would be needed to correct this. These practices are;

- Begin a Planned Grazing System
- Apply Woody Plant Control
- Decrease the Stocking Rate
- Change the Kind of Grazing/Browsing Animal
- Develop Water for Beef Cattle
- Apply Invasive Plant Control

The contest would mark Y (yes) for each of these in the area of the scantron titled Recommended Management Practices for Beef Cattle and would mark N (no) for the remaining practices.

Following is an example of how the scantron would be marked for Example 1.

Texas Range
Form #602TX-6

Incorrect Marks Correct Mark

Team Name / Additional Info
Example d

Team #

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Code

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

Last Name	First Name
A A A A A A A A A A A A A A A A	A A A A A A A A A A
B B B B B B B B B B B B B B B B	B B B B B B B B B B
C C C C C C C C C C C C C C C C	C C C C C C C C C C
D D D D D D D D D D D D D D D D	D D D D D D D D D D
E E E E E E E E E E E E E E E E	E E E E E E E E E E
F F F F F F F F F F F F F F F F	F F F F F F F F F F
G G G G G G G G G G G G G G G G	G G G G G G G G G G
H H H H H H H H H H H H H H H H	H H H H H H H H H H
I I I I I I I I I I I I I I I I	I I I I I I I I I I
J J J J J J J J J J J J J J J J	J J J J J J J J J J
K K K K K K K K K K K K K K K K	K K K K K K K K K K
L L L L L L L L L L L L L L L L	L L L L L L L L L L
M M M M M M M M M M M M M M M M	M M M M M M M M M M
N N N N N N N N N N N N N N N N	N N N N N N N N N N
O O O O O O O O O O O O O O O O	O O O O O O O O O O
P P P P P P P P P P P P P P P P	P P P P P P P P P P
Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	Q Q Q Q Q Q Q Q Q Q
R R R R R R R R R R R R R R R R	R R R R R R R R R R
S S S S S S S S S S S S S S S S	S S S S S S S S S S
T T T T T T T T T T T T T T T T	T T T T T T T T T T
U U U U U U U U U U U U U U U U	U U U U U U U U U U
V V V V V V V V V V V V V V V V	V V V V V V V V V V
W W W W W W W W W W W W W W W W	W W W W W W W W W W
X X X X X X X X X X X X X X X X	X X X X X X X X X X
Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y Y Y Y Y Y Y Y Y Y
Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Z Z Z Z Z Z Z Z Z Z

Resource Inventory - Present Conditions

Ecological Sites one answer per site 25 points

1 Site 2

Bottomland	1	2
Deep Prairie	1	2
Shallow Prairie	<input checked="" type="radio"/>	2
Deep Savanna	1	2
Shallow Savanna	1	2
Steep	1	2

Similarity Index one answer per site 40 points

1 Site 2

76% - 100%	1	2
51% - 75%	<input checked="" type="radio"/>	2
26% - 50%	1	2
0% - 25%	1	2

Beef Cattle Habitat Rating one answer per site 20 points

1 Site 2

Excellent (31-40)	1	2
Good (21-30)	1	2
Fair (11-20)	1	2
Poor (<11)	<input checked="" type="radio"/>	2

Beef Cattle Habitat Limiting Factors 5 points per factor

1 Site 2

A - Forage Factors	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
B - Distribution Factors	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
C - Site Integrity	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

Recommended Management Practices

Recommended Management Practices for Beef Cattle 5 points per practice

1 Site 2

Continue Present Management	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Begin a Planned Grazing System	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Apply Forb or Grass Control	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Apply Woody Plant Control	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Decrease Stocking Rate for Beef Cattle	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Increase Stocking Rate for Beef Cattle	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Change the Kind of Grazing/Browsing Animal	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Develop Water for Beef Cattle	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Apply Invasive Plant Control	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Plant Adapted Forage Species	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

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