South Dakota FFA Range Judging Event

I. Purpose

The purpose of the Rangeland Judging Event is to promote education on SD's most threatened natural resource – grasslands. This event provides an understanding of rangeland resources and a sense of stewardship in natural resource management.

II. Objectives

A. Integrates basic plant and soil management and the ecological principles necessary to evaluate habitat suitability.

B. Demonstrates that management by humans can influence the rangeland resource.

C. Provides a basic understanding how management affects rangeland and its resources.

D. Shows that a management practice which favors one use may not equally favor another.

E. Provides an opportunity to develop a basic understanding of rangeland ecosystems.

F. Instills a sense of rangeland stewardship.

III. Contest Setup

A. Contest setup instructions can be found in the "Judging South Dakota Rangeland for Livestock and Wildlife Values" (also known as the range judging manual). This pdf is available on the SDSU Extension website. Below is a shortened version of the guidelines.

B. Site Selection

1. Locate a site where different conditions can be found to judge.

    a. Choose a site with a variety of ecological sites within the same general area.

    b. Choose a site with a good plant diversity so at least 20 species from the Plant List in the Rangeland Judging guide can be marked.

2. Secure permission from the landowner to use the area.

3. Select 2 ecological site evaluation stations and one plant line prior to the contest.

C. Prepare the Stations

1. For Stations 1 and 2

a. Determine the ecological site for the area you will be using for evaluation. Utilize the ecological site key on page 6. This answer goes on the scorecard under Part I.

b. Mark out an area of about 50 by 50 feet that incorporates the ecological site (this area can be smaller if needed) using either wire flags or ribbon attached to posts. This plot will be used to determine similarity index and used when answering habitat inventory questions.

c. Mark a walking path through the middle of the site.

d. Dig a hole to at least 20 inches or the restrictive layer.

e. Set 3 or 4-foot posts/stakes at 50 or 100 feet to determine slope. Make sure the stakes being used are the same height.

f. Develop a management scenario and the manager's goal for Station 1 and 2.

g. Mark a selected plant for degree of use and nesting cover (can use the same plant or separate plants). Clip the plant to reflect the desired degree of use/nesting cover to be judged.

h. Mark an area within the plot that's 3-4' x 3-4' for participants to use when determining erosion factors and litter depth.

2. For station 3 – plant identification, use wire flags numbered 1 through 20 to mark individual plants. Clip around plants to make sure participants can see which plant is marked.

D. Judging Similarity Index

1. Use the Similarity Index (SI) worksheets for the local Major Land Resource Area (MLRA) as found in the back of the judging manual.

2. Determine a plant census for the area before assigning observed percentages for each plant category as shown on the SI worksheets.

3. Estimating the percent species composition by weight of individual species at peak productivity

a. Depending on time of year of judging, may need to estimate additional growth for certain species.

i. (e.g. in June Big bluestem is quite small, but will be a larger component of the plant community by weight than a similar amount of Kentucky bluegrass)

4. All observations should add up to 100 percent.

5. On the similarity index worksheet, select the lesser of the “Composition Maximums” and “Percent Observed” to place in the Percent Allowed column. (see Figure 6 on page 15 of range judging manual).

6. Add up Percent Allowed column to determine final similarity index.

7. This answer goes on the Scorecard under Part II.

E. Completing Beef Carrying Capacity (Part III)

1. Using the Management Scenario developed prior, fill out the “Part III. Beef Cattle Carrying Capacity Appraisal Form” (page 22).

    a. Note. A detailed example of this can be found in the manual starting on page 17.

2. The similarity index is used here to determine Available AUM/ac (found at the end of the Similarity Index worksheets).

3. Determine if the management scenario for the site has enough forage to meet the animal demands. This answer goes on the scorecard under Part III.

4. If the site does not have enough forage to meet the animal demands (“the Carrying Capacity is too Small”), the Management Practice, “6. Change Livestock Numbers or Duration of Grazing Period” must be checked on the scorecard. See Management Practices on page 13.

F. Completing Beef Habitat and Prairie Grouse Habitat

1. Answer the questions on the Beef Habitat Appraisal Form (starts on page 23).

2. The appraisal is split into three factors for Beef:

    a. Forage Factors

    b. Distribution Factors

    c. Rangeland Health Factors

        i. Rangeland Health Factors was previously called “Site Integrity.”

3. The lowest score for each factor is determined, then the lowest of those scores is the Overall Beef Cattle Score. This is marked on the scorecard in Part IV. The Factor with the lowest score is marked on the scorecard as well.

4. The Appraisal Forms are not graded and will not be turned in during the contest.

5. Answer the questions on the Prairie Grouse Habitat Appraisal Form (starts on page 26).

6. The appraisal is split into 5 factors for prairie grouse:

    a. Winter Components

    b. Nesting Cover

    c. Brood Food

    d. Brood Habitat

    e. Invasive Plants

7. The lowest score for each factor is determined, then the lowest of those scores is the Overall Grouse Habitat score. This is marked on the scorecard in Part V. The Factor with the lowest score is marked as well.

8. For both beef and grouse, if there is a tie for the lowest score, mark both of the tied categories on the scorecard in the respective sections.

G. Needed Management Practices (Part VI).

1. Determine if the overall Beef and Grouse scores are above or below the Manager's stated Goals (Found on the Management Scenario sheet provided).

2. If the scores are above the stated goals, no management is needed.

3. If the scores are below the stated goals, management practices will be checked for each factor that is below the stated goal. Use pages 13 through 14 to help guide management practice selection for contest setup. These management practices will need to be memorized by students.

H. Plant Identification Station Setup

1. Utilize the Plant ID Scorecard found on Page 38 to fill in the plant name and characteristics. Utilize the Plant Characteristics and Resource Rating Guide for official characteristics for the contest.

IV. Scoring the South Dakota FFA Rangeland Judging Contest

The South Dakota Rangeland Judging Contest is conducted in three stations: two Ecological Site Evaluation stations and one Range Plant Identification station. Contestants can earn a total of 118 points at each Ecological Site Evaluation station (236 points total), while 400 points can be earned at the Range Plant Identification station. The total possible individual score is 636 points. A breakdown of each scoring area is provided below.

1. **Scoring is final when finished correcting on the day of the contest.**

2. **Ecological Site Evaluation – 118 total points per station**
    a. Ecological Site 15 points
    b. Similarity Index 10 points
    c. Beef Cattle Carrying Capacity 10 points
    d. Beef Cattle Habitat Rating 10 points
    e. Beef Cattle Habitat Limiting Factors 9 points
        i. 3 factors worth 3 points each per station.
        ii. Yes/No bubble, each factor must be marked correctly to receive full points.
    f. Prairie Grouse Habitat Rating 10 points
    g. Prairie Grouse Habitat Limiting Factors 15 points
        i. 5 factors worth 3 points each per station.
        ii. Yes/No bubble, each factor must be marked correctly to receive full points.
    h. Recommended Management Practices 39 points ‘
        - 13 management practices are worth 3 points each per station
        - Yes/No bubble, each management practice must be marked correctly to receive full points.

3. **Range Plant Identification – 400 total points**
    20 plants, worth a total of 20 points each, are flagged for identification in this portion of the contest. The plant score is split into two parts: plant identification and plant characteristics. Contestants must correctly identify the flagged plant in order to receive any points for plant characteristics*.
    a. Plant Identification (Plant Number) 13 points
    b. Habitat 1 point
    c. Season 1 point
    d. Origin 1 point
    e. Traits 1 point
    f. Prairie Grouse Food 1 point
    g. Prairie Grouse Cover 1 point
    h. Cattle Food 1 point

4. **Scoring Breakdown:**

Judging Station	Points Possible
Ecological Site Evaluation – Station 1	118
Ecological Site Evaluation – Station 2	118
Range Plant Identification	400
Total Individual Score	**636**
Total Team Score (4 contestants count)	**2544**

5. **Tiebreakers:**

- *In case of a team tie, the order to break the tie will be:*
    - The top four team members Plant Identification scores.

    - The top four team members Site 1 evaluation scores.
    - The top four team members Site 2 evaluation scores.
- *In case of an individual tie, the order to break the tie will be:*
    - Individual total points Plant Identification score
    - Individual total points Site 1 evaluation score.
    - Individual total points Site 2 evaluation score.

References and Resources

- Judging South Dakota Rangeland for Livestock and Wildlife Values, Revised March 2023.
- Grassland Plants of South Dakota and the Northern Great Plains, by James R Johnson and Gary E. Larson. (available at SDSU Ag Heritage Museum – https://www.agmuseumstore.com/grassland-plants-of-south-dakota.html)