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Judging South Dakota Rangelands for Livestock and Wildlife Values

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for Livestock and Wildlife Values

South Dakota State University • College of Agriculture & Biological Sciences • Cooperative Extension Service

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Judging South Dakota

Rangelands

for Livestock and Wildlife Values

EC 914
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South Dakota State University • College of Agriculture & Biological Sciences • Cooperative Extension Service

Foreword

Judging South Dakota Rangelands for Livestock and Wildlife Values is a major advance in the approach to contest judging of South Dakota rangelands. For 25 years beginning in the mid 1970s, range judges identified plants and determined range site, range condition, and management practices for a given set of goals (Johnson et al., EC 731, 1979). In the mid 1990s, the need for a more contemporary judging contest was clear. Oklahoma led the way by changing the National Range Judging Contest in 1994. A year later, South Dakota followed. Several years of field tests and multiple revisions resulted in the current manual.

The contest still requires judges to identify plants, to determine ecological sites (range sites), and to calculate similarity indices (range conditions). Contestants now also assess rangeland habitat suitability for livestock and wildlife by evaluating sets of factors known to influence habitat suitability. In addition, contestants now must use basic math skills to determine whether a judging site scenario provides adequate livestock carrying capacity for a stated objective.

This publication was developed with extensive input from vocational education teachers, range specialists, wildlife specialists, and others knowledgeable about range judging. To all of them we owe many thanks:

Colleen Johannson, Brian Boomgaarden, Brandy Knutson, Kathy Reeves, Bob Hodorf, Art Carter, Les Rice, Greg Shenbeck, Stacy Smith, Bobbi Ellis, Warren Jackson, Wayne VanderVorste, Dave Schmidt, Dave Steffen, Craig Shyrock, Dave Ollila, Jerry Kobriger, Lee Manske, Kirby Keyser, Pat Johnson, Barb Berndt, and others.

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WHAT IS RANGELAND?

Rangeland in South Dakota is one of the richest and most important biological resources in the state. The native vegetation of rangeland is the economic backbone of ranching. Rangeland provides essential wildlife habitat. Rangeland is treasured for recreation and scenic beauty, and it is the lifeline of streams, ponds, and lakes.

Although grasses are the most common plants in our rangeland ecosystems, forbs, shrubs, and trees are integral components throughout most range areas. Rangeland occurs as open rolling uplands, as lowland meadows, along river drainages, in association with glacial till of the northeastern counties, and as meadows in the Black Hills. South Dakota once was more than 90% rangeland, and it still occupies more than 75% of the land area in western counties. In central and northeastern counties, 40 to 60% rangeland is common. In the southeast, rangeland occupies from less than 10% of flatter terrain up to 25% where hills have prevented conversion to cropland or towns.

Rangeland is a kind of land, not a land use. Rangeland is fragile, yet durable and resilient. Management profoundly impacts the similarity index of rangeland and its value for livestock, wildlife, and humans.

WHY JUDGE RANGELAND?

The purpose of rangeland judging is to provide an understanding of rangeland resources and a sense of stewardship in natural resource management. This manual describes a contest with components that have a strong biological basis for habitat management of both beef cattle and prairie grouse. Beef cattle have been chosen because they are the most common livestock species grazed on South Dakota rangelands. Prairie grouse represent wildlife because they are affected by management and have the potential to occur throughout the state. Prairie grouse is a collective term. Three species of grouse occur in South Dakota: sharp-tailed grouse, prairie chicken, and sage grouse.

Management can achieve many desired rangeland uses. Vegetation, livestock, and wildlife respond in a predictable manner to management practices. Rangeland judging is built on rangeland changes that are known to be possible for stated management goals. South Dakota rangeland judging uses beef cattle production (habitat evaluation and carrying capacity), and prairie grouse habitat evaluation to demonstrate important range management concepts.

Judging:

- Integrates basic plant and soil management and the ecological principles necessary to evaluate habitat suitability.
- Demonstrates that management by humans can influence the rangeland resource.
- Provides a basic understanding of how management affects rangeland and its resources.
- Shows that a management practice which favors one use may not equally favor another.
- Provides an opportunity to develop a basic understanding of rangeland ecosystems that will last for a lifetime.
- Instills a sense of rangeland stewardship.
- Is fun while instructive!

JUDGING CONTEST DETAILS

Judging contests are held after participants have had the opportunity to study and learn principles and practices that apply to beef cattle habitat suitability, beef cattle carrying capacity, and prairie grouse habitat suitability. Generally, three judging stations are set up. Two will be for ecological site evaluation and one will be range plant identification. The estimated time to judge each station

is 20 minutes. Ten minutes will be provided at the end of each judging station for participants to finish filling out the scorecard for the station.

The two ecological site evaluation stations should represent a single ecological site in a specific similarity index, both of which will be determined by the participant. Stations normally are square or rectangular, with border flags marking the area to judge (fig. 1). In the judged area, a path is marked so the site can be viewed more easily. Just outside the judged area a single plant is chosen to determine beef cattle forage utilization. The same plant or a different plant is marked for grouse nesting. Also outside the judged area, a soil pit is dug to assist in determining the ecological site.

At the plant identification station, 20 plants are numbered. These plants are to be identified by the participants.

Contest components

Stations 1 & 2	Determine the ecological site. Determine similarity index of plant succession. Determine beef cattle carrying capacity. Determine resource value rating for beef cattle. Determine resource value rating for prairie grouse. Make management recommendations based on stated objectives.
Station 3	Identify 20 plants and their key characteristics.

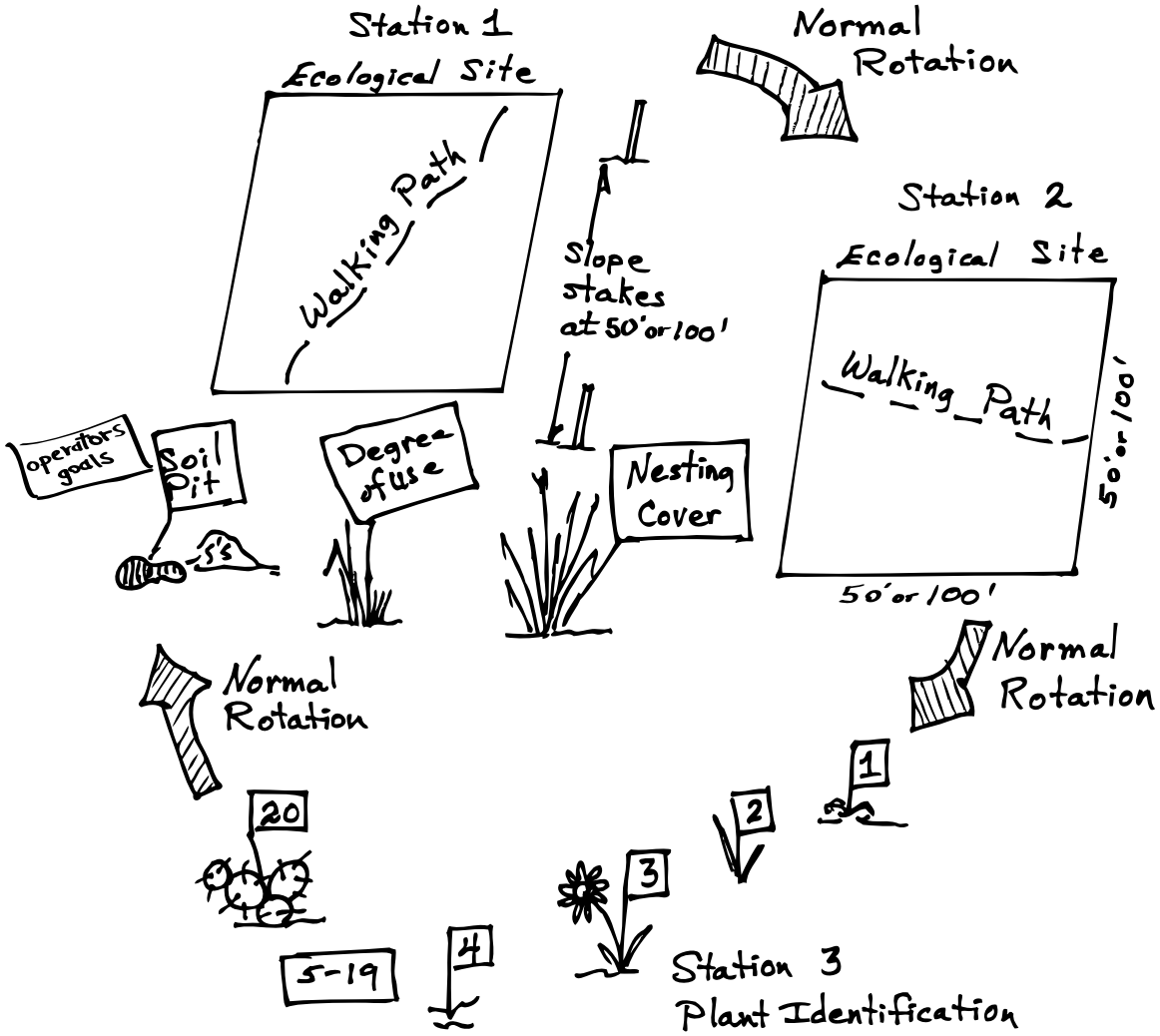


Fig 1. Typical layout of a rangeland judging contest.

Contest setup

- The contest committee must carefully evaluate each ecological site location before deciding on the management scenario and numerical habitat ratings.
- Ecological site evaluation stations normally are 100 by 100 feet but may be smaller if necessary.
- The statewide plant list consists of 122 entries. It is acceptable to create a more localized list eliminating species that do not occur in the contest area. If this is the case, the required species list might have 70–80 entries and should be widely circulated among contestants prior to the contest.

For Stations 1 and 2:

- Mark the boundary with wire flags.
- Mark a path though the middle of the site to assure that participants can fully evaluate vegetative components.
- For degree of use and nesting cover, mark a selected plant with a flag close to the site boundary. The same plant or separate plants can be marked for cattle and grouse.
- To assist in ecological site determination, dig a soil pit outside the site boundary.
- Set 3-foot stakes at 50 or 100 feet to determine slope.
- Develop management scenario and manager's goal for each station.

For Station 3 plant identification, use wire flags numbered 1 through 20.

Contest materials and conduct

Each contestant should bring a clipboard and pencil. A gallon-size plastic bag should be included if rainy weather is expected. No other student-provided aids are permitted.

Contestants will be given:

A scorecard.
A management scenario and objective for stations 1 and 2.
Local guides for calculating similarity index.
A livestock carrying capacity table.
A beef cattle carrying capacity appraisal form.
A beef cattle habitat appraisal form.
A prairie grouse habitat appraisal form.
These worksheets and scorecard will be the same as those in this judging manual.

A minimum of 20 minutes will be allowed for judging each station.

An additional 10 minutes will be allowed at each station for completing the scorecard.

Scorecards will be turned in at each station. Contest appraisal forms are not to be turned in for scoring.

Contestants normally divide into three equal groups, start at different stations, and rotate clockwise.

Other contest information

Contests are designed to evaluate habitat suitability factors for beef cattle and prairie grouse on the same ecological site, thus facilitating the learning of integrated management.

The contest committee should carefully evaluate each ecological site before the contest to decide on the management scenario and numerical management goals for both beef cattle and prairie grouse. Habitat rating values, ranging from 0 to 40, are arbitrary and must fit the site and management scenario.

If more than one limiting factor occurs on an appraisal form (two or more limiting factors with the same value), then make sure that all factors with the lowest value are marked in order to meet the objective.

Assume that if a factor is limiting (checked), then its value is automatically raised to 40.

Identify "Needed Management Practices" based on the stated objective(s) and numerical resource value rating. For contest purposes, beef cattle carrying capacity determination does not affect either the beef cattle habitat appraisal or the prairie grouse habitat appraisal.

Contests can be conducted without using all seven contest components. For example, a contest can be set up that does not include "beef cattle carrying capacity."

Scoring

A sample judging scorecard is at the back of this manual. The total possible score for each ecological site (stations 1 and 2) is 115 points (230 combined). For plant identification, 200 points are possible (10 points for each plant). Contest maximum is 430.

If judging as a team: 4-H teams will consist of three or four members, and the score from the lowest member will not be counted in the team score. FFA teams can consist of as many as 10 members; the scores of the top four (occasionally three) will be counted in the team score. The team score will be the total score of those whose scores are counted.

Tie breaks for individuals will be based on the plant identification score.

Tie breaks for teams will be based on the plant identification scores of the top three team members.

ECOLOGICAL SITES

It is not difficult to recognize that some parts of any landscape are different from other parts in kinds and amounts of vegetation. Are these changes random occurrences? Or is there a pattern that can be described?

As nature would have it, there is a relationship. In fact, in most cases, there is a close link between the specific soils on the landscape and the specific plants that grow there. To understand this variation across the landscape, we classify these different parts into units called ecological sites.

An ecological site is defined as a distinctive kind of land with specific physical characteristics. It differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. Landscapes are divided into ecological sites for the purpose of inventory, evaluation, and management. Some of the criteria used to separate ecological sites are position on the landscape, soils, and differences in kind or proportion of plant species (fig. 2).

An ecological site is the product of all the environmental factors responsible for its development. Differences in kind, proportion, and production of plants are, in large measure, the result of differences in environmental factors. In South Dakota the most important of these factors are climate and soil. The United States has been divided into broad geographic areas characterized largely by patterns of climate, soils, and vegetation. They are called Major Land Resource Areas (MLRAs, see fig. 3).

Within MLRAs, soils that have similar combinations of plant species are grouped together. These groups are called ecological sites and are given names such as Loamy or Clayey. In South Dakota there are over 40 different names given to ecological sites. Some of these ecological sites are very minor in extent or may be found in only a few places in the state.

Only 10 broad ecological site names are described in this manual. These 10 make up over 90% of the rangeland in South Dakota. Their relative positions on the landscape are shown in figure 2. Examples of these ecological sites can be found in most of the MLRAs.

The MLRA is necessary to identify the ecological site and correctly calculate similarity index of the site (fig. 3). An example of a specific ecological site name would be Loamy, MLRA 60A (or MLRA 60A Loamy). An example Similarity Index worksheet can be found later in this manual.

Basic soil textural classes

The 10 broad ecological sites that will be used in range judging in South Dakota are briefly described:

1. Subirrigated

This site occurs on level or nearly level bottomland. Soils are characterized by a beneficial water table that is within 3 to 5 feet of the surface during most of the growing season. The water table may reach the surface during the spring but only for a very short period. Soils have textures that vary from loamy sand to silty clay. These soils are not saline. They are well-enough aerated to grow big bluestem or corn and alfalfa.

Potential natural plant cover consists chiefly of big bluestem, prairie cordgrass, and other tall grasses such as Indiangrass and switchgrass. Because of the beneficial water table, tall grasses are predominant on this site even in the drier climatic areas. Other grasses that occur are little bluestem, Canada wildrye, green muhly, and Kentucky bluegrass. Prairie cordgrass may occur on inclusions that have a higher water table. Sedges occur in the understory. Forbs that often occur are Missouri goldenrod, Maximilian sunflower, American licorice, and showy milkweed.

The subirrigated site is often used as native hayland. It is noted for its high production of excellent quality bluestem hay.

2. Overflow

This site occurs on nearly level to gently sloping lands which receive stream water overflow or run-in from higher lands. Soils are deep and well aerated, and the texture in topsoil and subsoil varies from sandy loam to clay. Available water capacity is high. General fertility level and organic content are high. The water table is generally 5 feet or more below the surface.

Potential plant cover is an excellent stand of tall grasses. Big bluestem is the major dominant grass except in the driest climate areas. Western wheatgrass is more common in western and west-central areas, especially on heavy clay soils. Other grasses that occur are prairie cordgrass, green needlegrass, switchgrass, slender wheatgrass, and sideoats grama, with an understory of bluegrass and sedges in the wetter areas and blue grama and buffalograss in the drier areas. Leadplant and wild

Basic Soil Textural Classes cont. on page 10

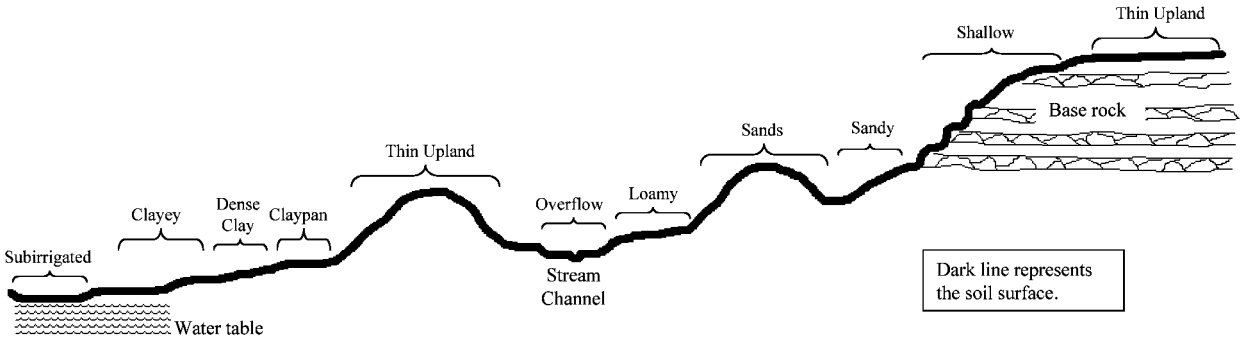


Fig 2. Ecological sites as they typically occur on the landscape.

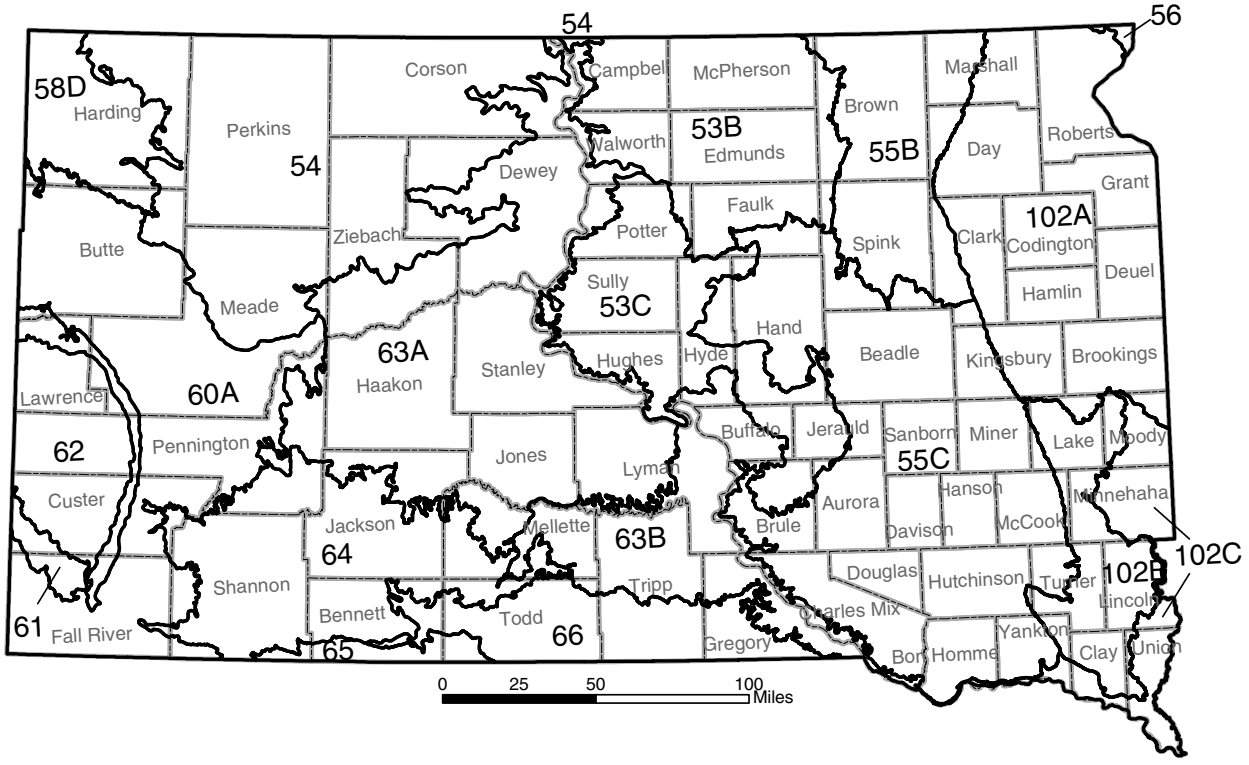


Fig 3. Major Land Resource Areas used to classify ecological sites.

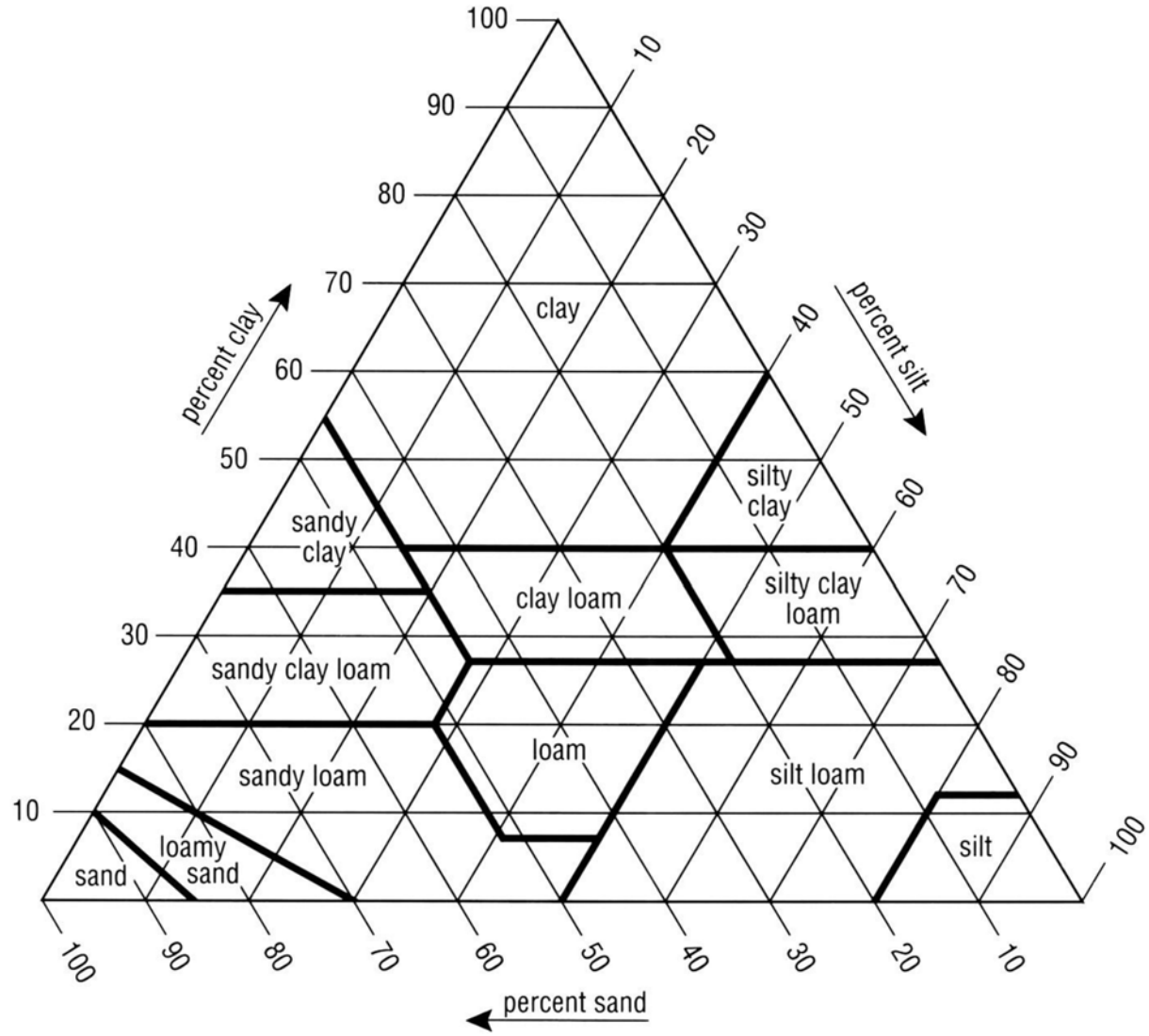
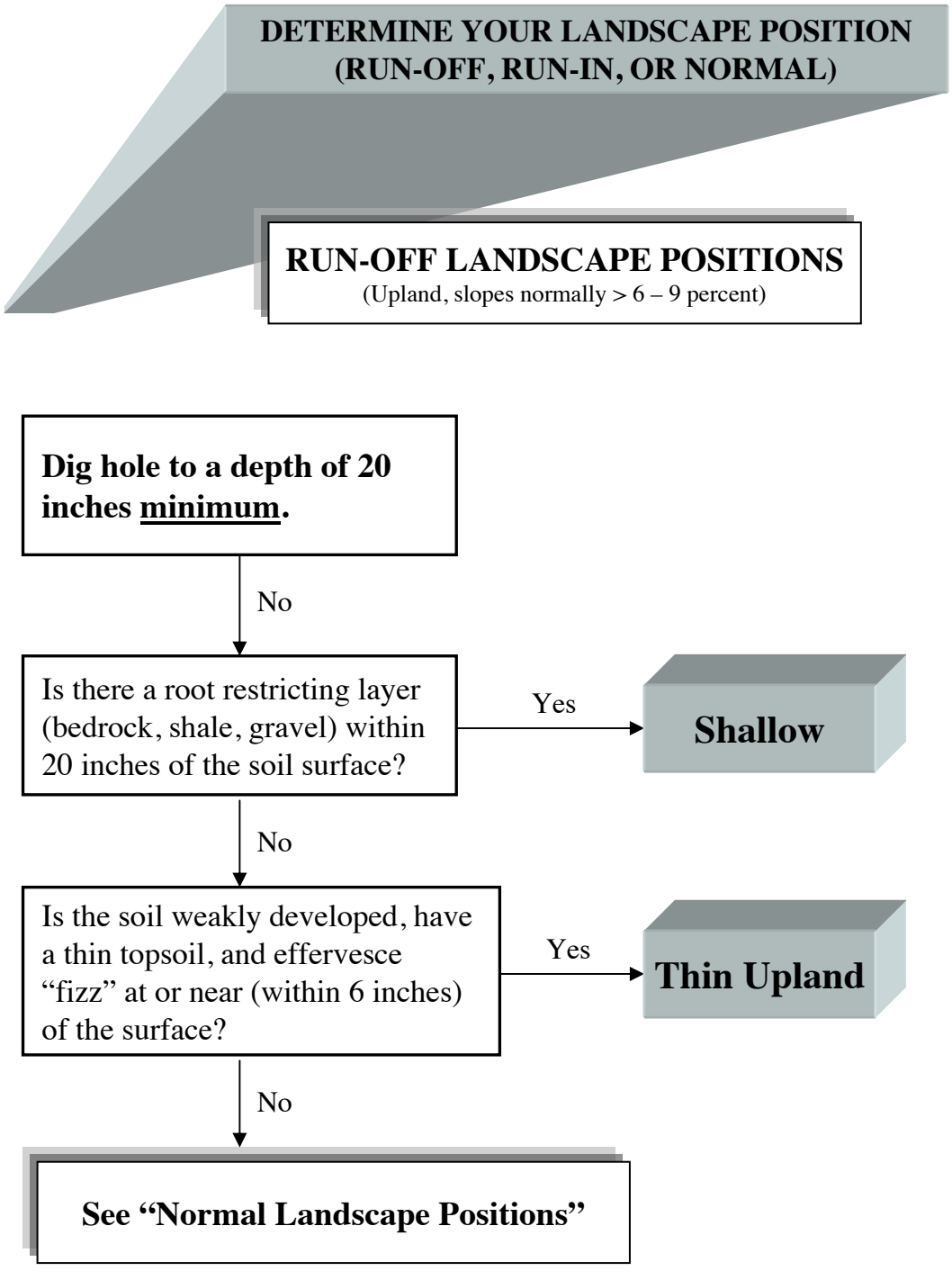
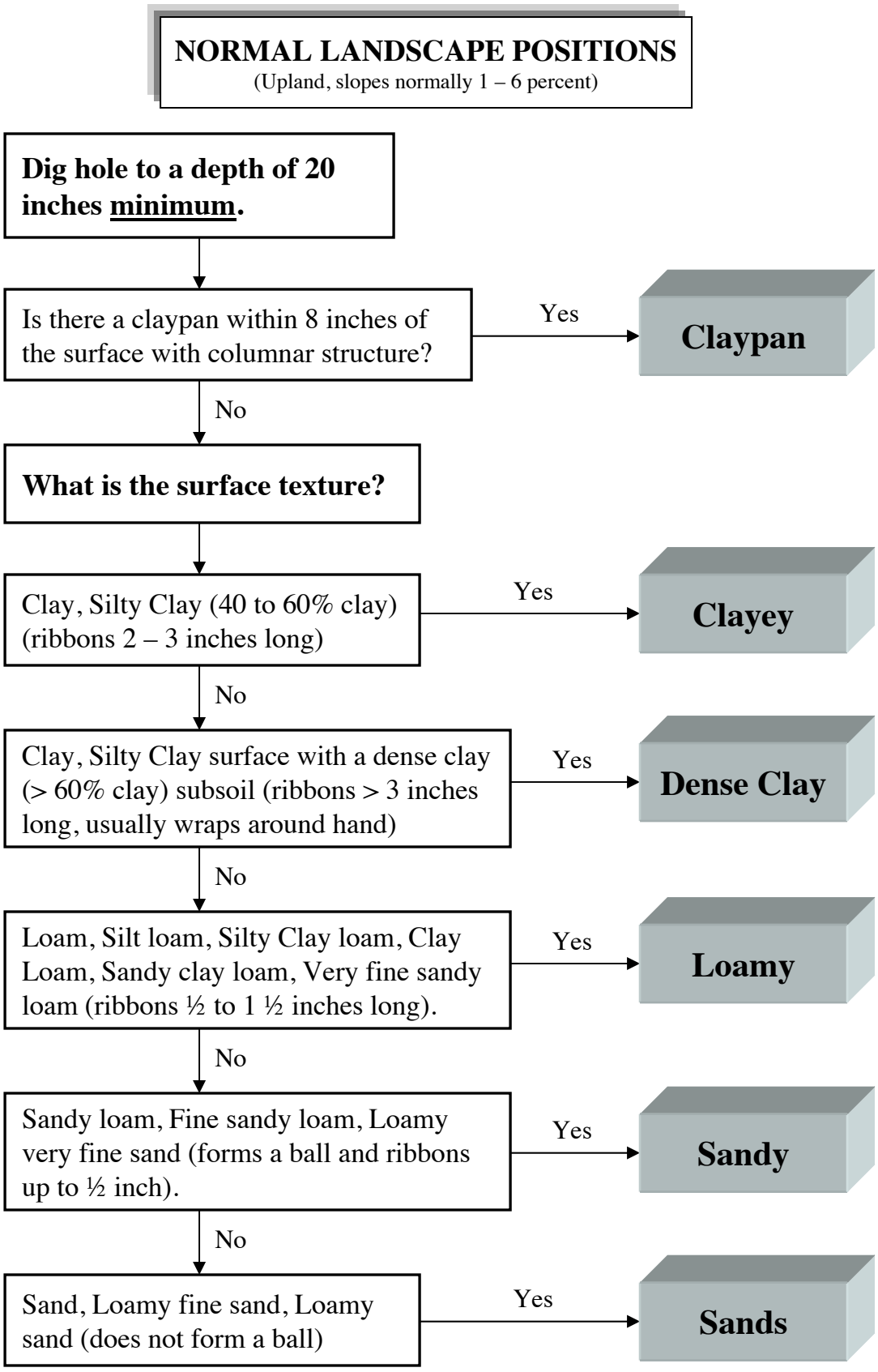


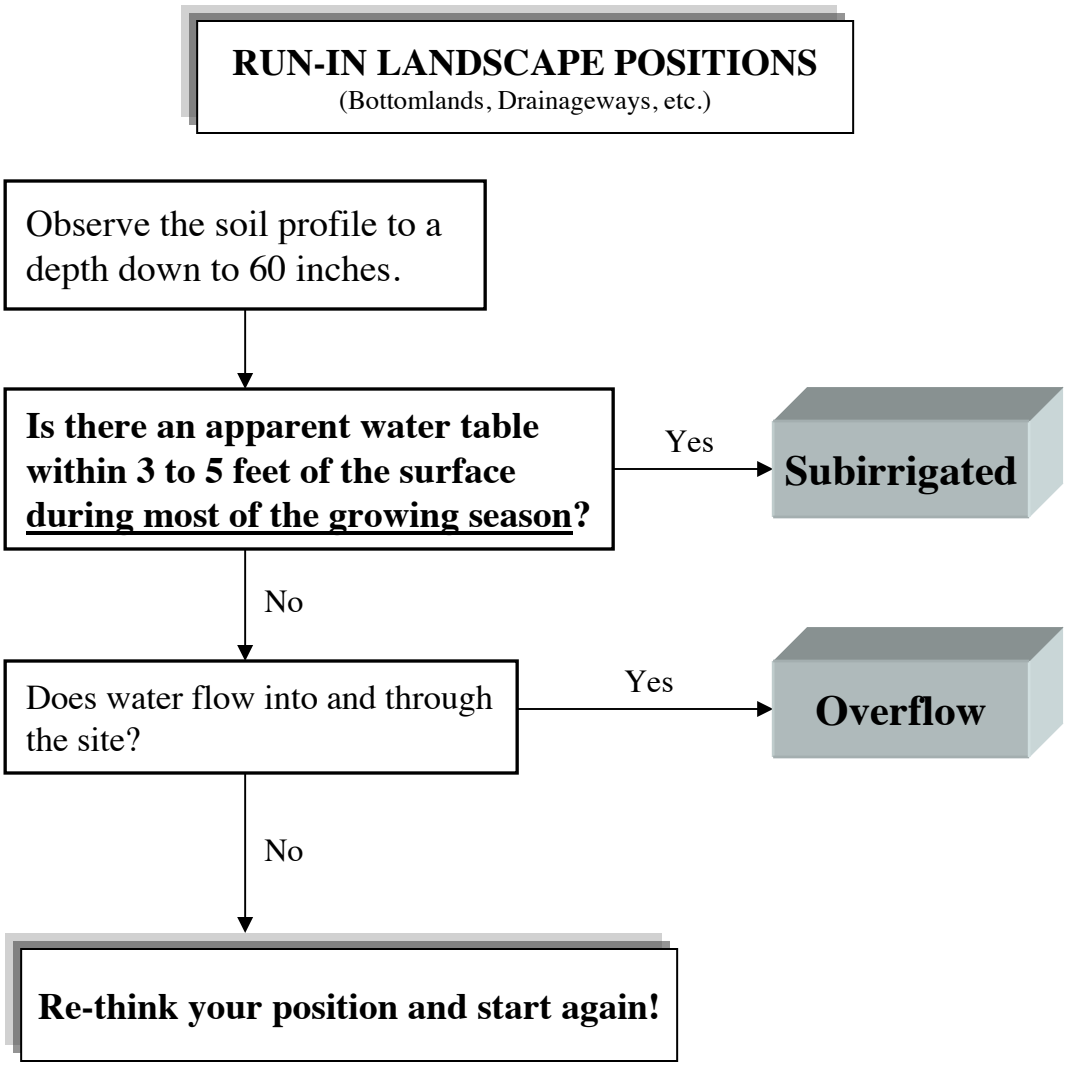
Chart showing the percentages of clay, silt, and sand in the basic textural classes.

ECOLOGICAL SITES KEY

By
Kent Cooley, Area Resource Soil Scientist, NRCS




NORMAL LANDSCAPE POSITIONS
(Upland, slopes normally 1 – 6 percent)
Dig hole to a depth of 20 inches minimum.
Is there a claypan within 8 inches of the surface with columnar structure?
Yes
Claypan
No
What is the surface texture?
Clay, Silty Clay (40 to 60% clay) (ribbons 2 – 3 inches long)
Yes
Clayey
No
Clay, Silty Clay surface with a dense clay (> 60% clay) subsoil (ribbons > 3 inches long, usually wraps around hand)
Yes
Dense Clay
No
Loam, Silt loam, Silty Clay loam, Clay Loam, Sandy clay loam, Very fine sandy loam (ribbons ½ to 1 ½ inches long).
Yes
Loamy
No
Sandy loam, Fine sandy loam, Loamy very fine sand (forms a ball and ribbons up to ½ inch).
Yes
Sandy
No
Sand, Loamy fine sand, Loamy sand (does not form a ball)
Yes
Sands


RUN-IN LANDSCAPE POSITIONS
(Bottomlands, Drainageways, etc.)
Observe the soil profile to a depth down to 60 inches.
Is there an apparent water table within 3 to 5 feet of the surface during most of the growing season?
Yes
Subirrigated
No
Does water flow into and through the site?
Yes
Overflow
No
Re-think your position and start again!

rose may occur throughout the site. Scattered stands of shrubs (such as chokecherry and buffaloberry) and trees (such as green ash and cottonwood) may occur adjacent to streams. These natural stands of trees and shrubs provide valuable but very limited cover and food for both wildlife and livestock.

3. Sands

This site occurs on nearly level to hummocky or hilly uplands. Soils are deep, loose, excessively drained loamy fine sands or sand. Precipitation does not run off except in extreme cases; this causes this site to have more tall grasses than other upland sites in the drier climatic areas. In eastern South Dakota this site and finer textured upland soils produce about equal amounts of vegetation.

The potential natural plant cover consists of sand bluestem, little bluestem, prairie sandreed, and switchgrass. Grasses such as needleandthread, sand dropseed, and blue or hairy grama occur in lesser amounts. Shrubs such as leadplant, wild rose, and sandcherry may occur throughout. Yucca is more common on the steeper, less stable inclusions.

Proper grazing use and management are essential to maintain a suitable soil cover that will prevent wind erosion and the formation of blowouts.

4. Sandy

This site occurs on nearly level to rolling upland. Soils are deep and well drained with a sandy loam or fine sandy loam surface texture that grades into sandy loam to sand in the subsoil. Water intake rate is moderate to rapid, and available water capacity is moderately high.

The potential natural plant cover consists chiefly of prairie sandreed, little bluestem, sand or big bluestem, and the cool-season grass needleandthread. Other plants are sideoats grama, blue grama, and threadleaf sedge. Common forbs are the sageworts, heath aster, and legumes such as prairieclover. Shrubs such as leadplant and wild rose may occur throughout, but sand sagebrush occurs only in the southwestern part of the state.

With continued season-long overuse the bluestems and prairie sandreed are replaced by needleandthread, sideoats grama, blue grama, and threadleaf sedge in the western areas and by Kentucky bluegrass and sedges in the east.

5. Loamy

This site occurs on nearly level to rolling upland. Soils are deep or moderately well drained with a moderate or high available water capacity and favorable soil-water-plant relationships.

The potential natural plant cover consists of tall and mid grasses characteristic of the true prairie in the eastern climatic area. This grades to fewer tall grasses and more mid and short grasses characteristic of the mixed prairie in the western climatic area. Big and little bluestem predominate in the eastern area. Western wheatgrass and green needlegrass are the predominant species in the western area; needleandthread is characteristic although not always abundant. Understory species are principally bluegrass and sedges in the eastern area and blue grama, buffalograss, and sedges in the western area. Forbs occur in small amounts but on overused ranges weedy species such as curlycup gumweed may be abundant. On rangeland in high ecological status, shrubs like leadplant and wild rose occur on this site in all climatic areas.

6. Clayey

This site occurs on nearly level to rolling upland. Soils are deep and have silt loam to clay surfaces and silty clay to clay subsoils. If dense restrictive clay horizons occur, they are at depths of more than 14 inches. Runoff is medium or slow, and permeability is moderately slow or slow.

Potential natural plant cover is a mixture of tall and mid grasses characteristic of the northern true prairie in the east and mixed prairie in the west. In the eastern area, about equal amounts of the warm-season grasses (big and little bluestem) and the cool-season grasses (porcupinegrass, green needlegrass, and western wheatgrass) occur. In the western area the principal grasses are western wheatgrass and green needlegrass. Understory plants consist of the gramas, Kentucky bluegrass, and sedges in the east and blue grama, buffalograss, and sedges in the west. Forbs and shrubs are usually not abundant.

7. Dense clay

This site occurs on nearly level to gently rolling uplands. It occurs principally in the western and west-central climatic areas. Soils are moderately deep to deep and have a nearly structureless clay surface underlain at 14 inches or less by a dense clay. Runoff is rapid. Permeability is very slow.

The potential natural plant cover is chiefly a mixture of western wheatgrass (thickspike wheatgrass may occur in the western area) and green needlegrass. This site does not have an understory of short grasses. Forbs such as American vetch, wild parsley, and wild onion are common. Woody plants are not common, but some Nuttall

saltbush and sagebrush and pricklypear may occur in the western area. This site, when it is overgrazed, is nearly bare during very dry years. The erosion hazard from wind and water is high.

8. Thin upland

This site occurs mostly on steep uplands. Soils are weakly (thinly) developed with a limey surface layer. Surface textures range from fine sandy loam to clay loam. The unweathered parent material is limey and so soft that it is easy to dig with a spade. If bedrock exists, it is deeper than 20 inches. Surface runoff is medium or rapid, and permeability is moderate or moderately rapid. This results in less vegetative production, less organic matter in the surface, and eventually a thinly developed soil.

The potential natural plant cover consists of the tall and mid grasses characteristic of the true prairie in the eastern area. This grades to a mixture of mid and short grasses in the western area. In the east, the bluestems, prairie dropseed, and porcupinegrass are the principal species. In the west, needleandthread and blue grama are major grasses. Sedges occur in the understory; and in the west the increaser threadleaf sedge becomes abundant with overuse. Forbs and shrubs make up from 5 to 10% of the vegetation.

9. Shallow

This site occurs on gently sloping to steeply sloping uplands. The soils are shallow, 10 to 20 inches deep to bedrock. Bedrock may be solid and rock-like or it may be unconsolidated as in the case of strongly compacted shale. If solid, moisture penetration is inhibited; if unconsolidated, the bedrock material greatly reduces the available water capacity. Both greatly restrict root penetration to less than 20 inches. Runoff is moderate or rapid and permeability is moderate to slow.

The potential natural plant cover is chiefly a mixture of bluestems, sideoats grama, and needleandthread with some western wheatgrass and green needlegrass. Understory plants are blue and hairy gramas, sedges, and bluegrass. Forbs such as purple coneflower and dotted gayfeather are quite typical. Shrubs such as leadplant and wild rose are common.

10. Claypan

This site occurs on nearly level to gently sloping uplands and occasionally on nearly level bottomlands. Soils may have a fine sandy loam to clay loam surface. The identifying site characteristic is that the texture changes abruptly, between depths of 4 to 8 inches, to an extremely hard clayey horizon. This hard clay has a round-topped columnar or prismatic structure. The soil scientist refers to this abrupt layer as "biscuit tops" when he uncovers it with a spade. Salt accumulations can usually be seen in the lower part of the clay layer. Runoff is slow or medium and permeability is very slow or slow.

The potential natural plant cover is chiefly a mixture of mid and short grasses. Western wheatgrass is the major dominant. Farther east, some tall decreaser grasses may occur. Blue grama and Kentucky bluegrass are the principal understory plants in the east while blue grama and buffalograss fill this niche in the west. Forbs and shrubs are not common, but some big or silver sagebrush may occur in the west.

SIMILARITY INDEX

Similarity Index (SI) is an expression of the kinds and proportions of vegetation present in relation to the native vegetation the site is capable of producing (see fig. 5 later in this manual). This plant community is known as the reference plant community and will have an SI of 100. Similarity Index is a yardstick for measuring the departure of the present plant community from the reference plant community. In South Dakota the greatest species diversity and productivity generally occur at the upper (SI closer to 100) versus the lower (SI closer to 0) levels of plant succession. The soil, water, plant, animal, and air resources on an ecological site with an SI approaching 100 will be well protected, and the ecological processes which sustain the site will be functioning at high levels (excellent rangeland health).

The desired plant community is the SI that meets the land manager's objectives or goals. It may not necessarily be an SI at or near 100. For example, the land manager may want parts of the management unit to have an SI of 30% to 40% (lower successional level) to provide winter food and cover (increased shrub component) for prairie grouse. Other parts of the management unit may need to be managed to obtain an SI of 80 to 90 (higher successional level) for prairie grouse nesting cover and forage for cattle.

Changes in SI are influenced primarily by grazing intensity and season of grazing use. Overuse by livestock or wildlife for extended periods of time results in many desirable plants losing vigor and eventually will substantially reduce or remove them from the plant community. Plants that are less productive and less desirable for the intended use may replace desirable species. Other factors that may influence SI are climatic cycles, fire, insects,

exotic plants, non-use by grazing animals, and kind of grazing animal.

SI is calculated by estimating the percent species composition by weight of individual species and comparing these estimates to the reference plant community guides for the site. SI is generally best calculated at the end of the growing season to best reflect the species composition of all species present. As judging is often done at times prior to or after the end of the growing season, contestants must be able to visualize what the plants would look like when they have reached their peak growth. The observed plant composition is the estimate of how much weight each species contributes to the total composition. The exception is woody plants. For contest purposes, the contribution of woody plants (shrubs and trees) will be evaluated as percent canopy cover and expressed as percent composition (see fig. 4). A sample calculation of SI is given in the detailed contest example (see fig. 5).

BEEF CATTLE CARRYING CAPACITY EVALUATION

Beef cattle graze or browse on many different kinds of plants (herbaceous and woody). Plant selection is dependent on animal preference and availability and palatability of the plant. Allowing beef cattle to graze in native plant communities, rangeland, or grazeable forest is compatible with natural resource stewardship provided the grazing is done in a proper manner.

Proper grazing management includes maintaining the appropriate number of cattle at or below the **carrying capacity** of the pasture. The carrying capacity of a pasture is the maximum stocking rate possible without causing permanent or long-term damage to the vegetation or related range resources. Stocking rate is the number of beef cattle utilizing a unit of land for a specific period of time.

The amount of forage available for grazing that is produced on an acre of land is expressed as **animal unit months (AUMs) per acre**. To determine AUMs per acre, first determine the ecological site and the Similarity Index of the ecological site. The carrying capacity, expressed as AUMs per acre, can be selected from the

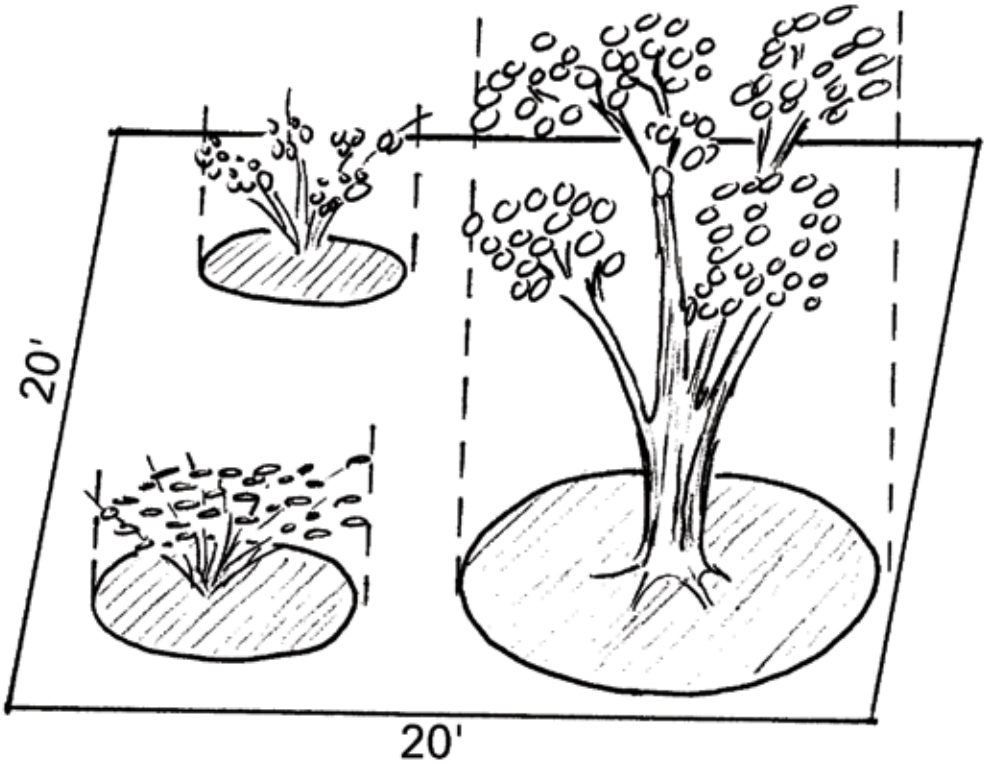


Fig 4. Visual example of tree and shrub composition estimated from canopy cover. Combined composition is estimated at 20%. NOTE: An area 10'X10' = 4% of a Station measuring 50'X50'.

appropriate livestock carrying capacity table. An **Animal Unit (AU)** is one mature cow of approximately 1000 pounds and a calf up to weaning, usually at 6 months of age.

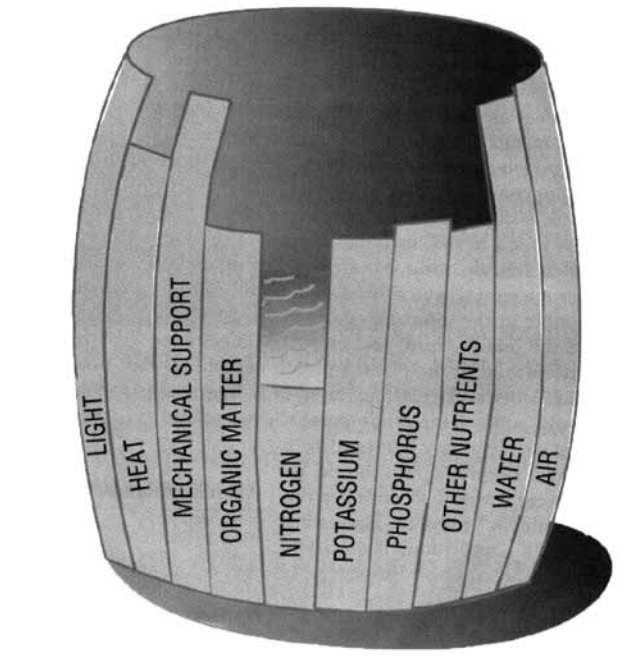
Many introduced plants (those that did not evolve with the native ecosystems) that are desirable cattle forage will count toward the beef cattle carrying capacity evaluation but not toward Similarity Index. Example species are smooth bromegrass and crested wheatgrass. These are primary species for cultivated pastures. However, in rangeland these and other introduced plant species threaten the integrity of native plant ecosystems and are not counted toward the SI.

BEEF CATTLE AND PRAIRIE GROUSE HABITAT RATINGS

All resource value components have been arbitrarily set using a scale of 0 to 40 to facilitate judging.

Success of a species such as prairie grouse within a given area (often referred to as its home range) depends on the nature of the habitat provided in that area. Habitat desirability is dependent on a number of factors, often physical, and controlled by the vegetation and how the vegetation is managed. Success of a species is primarily dependent on the most limiting factor. This principle is illustrated by Lieberg's law of the minimum which states:

Total yield or biomass of an organism will be determined by the nutrient present in the lowest (minimum) concentration in relation to the requirements of that organism. In other words, organisms and organism growth will be limited by nutrition, particularly those nutrients in short supply.



Just as a barrel can only hold as much water as allowed by the shortest stave, so any organism is only as successful as the most limiting habitat factor allows.

BEEF CATTLE HABITAT EVALUATION

This evaluation systematically judges quality of the habitat for its value to beef cattle. The evaluation guide is designed to assist in inventorying and analyzing the existing habitat conditions. It is used to determine an overall habitat value and identify the **limiting factor** of the habitat for beef cattle.

Once the most-limiting factor is identified, and if other factors are limiting (below the stated goal), the other limiting factors should be identified to ensure that needed management practices are selected to improve the habitat for beef cattle. This evaluation guide evaluates only the condition of the natural resources. Economic goals, natural resources conditions, and family goals must be evaluated in an actual situation.

Beef cattle habitat is influenced by **forage** and **distribution** factors and **site integrity**. Beef cattle restrict their home range to an area that provides their needs for food, water, and shelter. The actual size and shape is generally controlled by fencing. If not fenced, the home range would be controlled by how far the animal can travel and the quality of the various habitat elements within the home range. Actual home ranges are not marked by permanent boundaries (except for fencing), nor are they the same from season to season. Beef cattle prefer open areas that provide good air flow and thermal cover. Thermal cover can be either shade in warm weather or windbreaks during cold weather. However, the animals will use shrubs or woody or forested areas if available.

In range judging, the most limiting habitat factors are eliminated through selection of management practices, until the beef management goal is met.

The **forage factors** to evaluate are **Similarity Index, diversity,** and **utilization**:

Similarity Index: Beef cattle prefer grazing certain grasses, forbs, and woody plants. These preferred plants decline in vigor and abundance over time if they are not properly grazed.
Forage diversity: Beef cattle will graze many different

plants during the year. Grazing preferences change with seasons of the year and stages of plant growth. Having a variety of grasses, forbs, and woody plants available makes a properly balanced diet more likely.

Forage utilization: Diet quality is generally higher at the beginning of the growing season and declines later in the season. Forage quality is also related to forage utilization. As beef cattle graze a plant, they initially remove the higher quality leaves. The remaining leaves and stems are of declining quality. Thus, overutilization of forage causes a decline in quality. When plants are grazed lightly to moderately and then rested to allow regrowth, the regrowth will be of higher quality.

The **distribution factors** to evaluate are **forage accessibility, grazing restraint**, and **water**:

Forage accessibility: Beef cattle prefer to graze on level ground. As the slope increases and/or the surface of the ground becomes rough from surface rocks, grazing use declines.

Grazing restraint: Beef cattle prefer to graze in open areas that allow easy movement and comfortable environmental conditions (e.g., moderate air temperature, air movement, relatively low fly numbers). Increasing brush canopy cover tends to restrict movement and reduce air movement and increases fly populations.

Water: Beef cattle prefer to graze a short distance from water. Cattle will increase their distance from water in search of forage or for thermal protection (summer shade or winter windbreak). They will seldom travel more than two miles to meet their forage requirements.

Site integrity evaluation involves assessing the presence of invading plants and evaluating their impact on the ecological site and habitat. When either a single invasive species or a combination of invasive species make up more than 5% of the site, the site integrity is considered to be affected.

PRAIRIE GROUSE HABITAT EVALUATION

This evaluation systematically judges habitat quality for its value to prairie grouse in South Dakota. Sage grouse, sharp-tailed grouse, and prairie chickens are collectively considered prairie grouse. Historically they occupied every rangeland habitat in the state, which exceeded 90% of the total land area, but they have been displaced in much of their home range as a result of farmland and urban areas being carved out of rangeland. However, in areas where there is a mix of rangeland with alfalfa fields or cropland and shelter belts, prairie grouse can fare well. In existing rangelands, management of livestock grazing can have the greatest impact on prairie grouse habitat and numbers. Grazing can often be beneficial at light and moderate levels of use. At higher levels of use, grouse habitat eventually declines as cover decreases and food becomes scarce.

The prairie grouse appraisal evaluation component of range judging is designed to systematically inventory and evaluate habitat components that are known to be important in sustaining grouse. The contestant uses the ecological site to be judged as the conceptual home range and evaluates habitat elements required by grouse in the home range. The habitat elements to evaluate are **winter components, nesting cover, brood food, brood habitat,** and **site integrity**. Overall habitat value and limiting factors are identified by using the prairie grouse habitat appraisal form. At the discretion of the landowner, those factors that are most limiting often can be eliminated. In range judging, the most limiting habitat factors are eliminated through selection of management practices until the grouse management goal is met.

NOTE: Similarity Index is used only for beef cattle carrying capacity calculations and not for prairie grouse habitat evaluation.

The **winter component factors** to judge are **winter escape cover, winter roosting cover,** and **winter food**:

Winter escape cover: Shrubby vegetation in winter provides a dual purpose. It is important as predator protection and thermal protection. In winter, grouse hide in shrubby areas to make themselves less visible to predators. Shrub thickets also create effective wind barriers by reducing wind chill during windy conditions and blizzards, thus decreasing the energy needed by the birds during winter storms.

Winter roosting cover: Grouse have the ability to burrow in snow trapped by vegetation that is at least 8 inches tall. Coveys will fly to a leeward, grassy hillside, burrow into the snow, and become essentially covered and insulated with a blanket of snow, also remaining visually protected from predators.

Winter food: Grouse will fly several miles to find suitable winter food. Persistent fruits and dormant leaf buds of essentially all shrubs and trees are valuable. Cropland of nearly any type provides good winter food. Included are green winter wheat, alfalfa seed and leaves, and unharvested seeds of wheat, oats, corn, and milo.

The **nesting cover factors** to judge are **nesting cover quality** and **nesting cover height**:

Nesting cover quality: Mid and tall grasses on upland ecological sites are favored nesting areas for grouse. Bunch grasses often seem preferred, but sod grasses also provide satisfactory nest sites. Sites dominated by short grasses, shrubby thickets, or cropland do not provide the environment necessary for nesting.

Nesting cover height: Up to a point, taller is better for nesting cover. As a rule, grass less than 8 inches in height does not provide adequate nesting cover. As grasses reach heights above 16 inches, the quality of the site increases for nesting.

Brood food is judged as a composite of three vegetation attributes involving **broadleaf plants, canopy shading, and bare ground**:

Grouse chicks rely heavily on insects and spiders, which are associated with forbs and shrubs. To some extent, they also feed on these broadleaf plants. The protein dietary requirement for a grouse chick is high. Insect and spider populations are higher when vegetation forms a canopy several inches above the ground. The canopy shades the ground, creating a variety of microhabitats for thermal regulation of body heat, nesting, feeding, and preying. Destructive grasshopper populations are often associated with short vegetation and bare ground for grasshopper nesting sites. Such sites are not good for brood rearing because they lack protective cover for chicks, insect/spider diversity, and forbs.

Brood habitat addresses brood safety by evaluating **brood protective cover quality and mobility/accessibility**:

Brood protective cover quality: Shrubby cover is the best protection from birds of prey. When shrubby patches occur in conjunction with interspersed cover types, the best opportunity exists for having adequate brood food and protection from predators.

Mobility/accessibility: Brood chicks are small and must be able to (1) be mobile enough to escape predators, and (2) gain access to food and cover. Some bare ground is important for mobility/accessibility, as long as there is not so much bare ground that other desirable habitat components are lacking.

Site integrity evaluation involves assessing the presence of invading plants and evaluating their impact on the ecological site and habitat.

GUIDE TO NEEDED MANAGEMENT PRACTICES

Beef cattle

1. **Apply invader plant control.** Use only when site integrity (invading herbaceous or woody plants on the site) is a limiting factor. Invader plants are listed in the plant list. Invading plants may be locally exotic natives (e.g., juniper or cedar) or introduced plants (e.g., smooth bromegrass or Canada thistle). Control may be in the form of grazing, fire, herbicides, or mechanical or biological control. Some invading plants are difficult to control with existing practices.

2. **Continue present management for beef cattle.** Use if current grazing management program is meeting the stated objectives for beef cattle. NOTE: Do not check if Option 5b, 5c, or 6 is checked.

3. **Apply woody plant control for beef cattle.** Use when grazing is restricted by woody vegetation (grazing restraint) and is a limiting factor. Control may be prescribed fire, herbicide, mechanical, biological, or grazing/browsing.

4. **Develop water for beef cattle.** Use when water is the limiting factor. Properly located, clean, and dependable water sources are essential for good grazing management and livestock performance.

5. **Begin a planned grazing system.** Use if current grazing management is inadequate for the objectives stated below. Would be used
   (a) if an improvement in SI would adequately improve cattle carrying capacity to handle desired AUMs of grazing.
   (b) if nesting cover quality for prairie grouse is the factor preventing attainment of the goal for prairie grouse. See option 10. See Note on Option 2.
   (c) if nesting cover height (flagged plant) is the factor preventing attainment of the goal for prairie grouse. See option 11. See Note on Option 2.

6. **Change livestock numbers or duration of grazing period.** Use if utilization is a limiting factor for beef cattle. Use also if beef cattle carrying capacity is too small. Do not check if capacity is too large. See Note on Option 2.

7. **Change kind of grazing/browsing animal.** Use when grazing accessibility or grazing restraint is a limiting factor because of terrain or woody cover.

Prairie grouse

1. Apply invader plant control. Use only when site integrity (invading herbaceous or woody plants on the site) is a limiting factor. Invader plants are listed in the plant list. Invading plants may be locally exotic natives (e.g., juniper or cedar) or introduced plants (e.g., smooth bromegrass or Canada thistle). Control may be in the form of grazing, fire, herbicides, or mechanical or biological methods. Some invading plants are difficult to control with existing practices.

5. Begin a planned grazing system. Use if current grazing management is inadequate for the objectives stated below. Would be used

(a) if an improvement in SI would adequately improve cattle carrying capacity to handle desired AUMs of grazing.

(b) if nesting cover quality for prairie grouse is the factor preventing attainment of the goal for prairie grouse. See option 10. See note on option 2.

(c) if nesting cover height (flagged use plant) is the factor preventing attainment of the goal for prairie grouse. See option 11. See note on option 2.

8. Continue present management practices for prairie grouse. Use if current management program is meeting the stated objectives.

9. Improve winter components for prairie grouse. Use if important winter escape cover, winter roosting cover, or winter food is a limiting factor for meeting the stated objective for grouse.

10. Improve nesting cover quality for prairie grouse. Use if mid and tall grass quantities are so small that they are preventing attainment of the management goal. This may require a change in cattle stocking rates or a change in grazing management to encourage taller-growing species. Also check option 5.

11. Improve nesting cover height for prairie grouse. Use if height is limiting to the management goal for grouse. Taller grasses are necessary to screen nests and nesting birds from predators and unfavorable weather. Nesting cover height is usually influenced by grazing management. Also check option 5.

12. Improve brood food for prairie grouse chicks. Young grouse require high protein diets, obtained mostly from insects and to some extent from forbs. The most favorable sites have broadleaf plants and taller vegetation.

13. Improve brood habitat. Use if brood protective cover quality or mobility/accessibility is limiting.

DETAILED CONTEST EXAMPLE

Management scenario and objective *NOTE: At the beginning of the contest, a management scenario will be given by the station monitor or will be posted.* A rancher in Lyman County has 100 cow/calf pairs and 4 bulls that he wants to graze in this 1440-acre pasture for 8 months. Water is 3/4 mile away. Cropland is 1/2 mile away. The primary objective of the ranch is to raise cattle, with prairie grouse as a secondary objective. The manager's goal is to have a beef cattle habitat rating value of 30, and a prairie grouse habitat rating value of 25.

Part I. Ecological site

The contestant notices that the site is in an upland location, not subject to flooding. The slope is less than 5%, and the soil pit has loamy soil greater than 20 inches. The contestant determines the site is Loamy and makes the appropriate mark on the Scorecard, Station 1, Part I.

Part II. Similarity Index

The MLRA 63A SI worksheets have been pre-selected from the South Dakota Land Resource Area Map for calculating Similarity Index (SI). Lyman County is in this Resource Area (see fig. 5 example calculation for a loamy ecological site where the SI is determined to be 83% and is entered on the judging scorecard in Part II in the "76%–100% of Potential" category as well as on the beef cattle carrying capacity appraisal form (Part III.D).

The SI that occurs on an ecological site is determined by comparing the kinds and proportions of vegetation presently on the site with the native vegetation that the site is capable of producing in a relatively undisturbed condition. See example calculation: Similarity Index (fig. 5).

For range judging, it is necessary to select the SI worksheets from the back of the manual for the Land Resource Area where the contest is held. Use the Land Resource Area map (fig. 3) to determine which SI worksheets to use. In this example, use the MLRA 63A Similarity Index worksheets. The contestant will have already determined that the ecological site for Station 1 is Loamy, and uses the loamy ecological site worksheet for calculating SI.

Loamy Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	50	23	23
needlegrasses	35	38	35
sideoats grama	15	5	5
big bluestem	5	0	0
other native tall grasses	5	0	0
invader tall grasses	0	2	0
Short Height			
blue grama	10	5	5
buffalograss	5	0	0
sedges	5	0	0
other native short grasses	5	0	0
invader short grasses	0	2	0
Forbs:			
native forbs	10	12	10
invader forbs	0	0	0
Shrubs:			
native shrubs	5	13	5
invader shrubs	0	0	0
Trees:			
native trees	0	0	0
invader trees	0	0	0
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			83%

Fig 5. Similarity Index worksheet example

Resource Inventory, Present Conditions

		Station No. 1	2
Part I	**Ecological Sites**		
15 Pts.	Subirrigated		
	Overflow		
	Sands		
	Sandy		
	Loamy	X	
	Clayey		
	Dense Clay		
	Thin Upland		
	Shallow		
	Claypan		
		Station No. 1	2
Part II	**Similarity Index**		
10 Pts.	76% - 100% of Potential	X	
	51% - 75% of Potential		
	26% - 50% of Potential		
	0% - 25% of Potential		
		Station No. 1	2
Part III	**Beef Cattle Carrying Capacity**		
10 Pts.	The Capacity is Too Small		
	The Capacity is Exactly Right		
	The Capacity is Larger Than Needed	X	
		Station No. 1	2
Part IV	**Beef Cattle Habitat Inventory**		
10 Pts.	Excellent Value (31-40)	X	
	Good Value (21-30)		
	Fair Value (11-20)		
	Poor Value (< 11)		
	Limiting Factors		
3 Pts. Ea.	Forage Factor is Limiting		
	Distribution Factor is Limiting	X	
	Site Integrity		
		Station No. 1	2
Part V	**Prairie Grouse Habitat Inventory**		
10 Pts.	Excellent Value (31-40)		
	Good Value (21-30)		
	Fair Value (11-20)	X	
	Poor Value (< 11)		
3 Pts. Ea.	**Limiting Factors**		
	Winter Components Are Limiting		
	Nesting Cover Is Limiting	X	
	Brood Food Is Limiting		
	Brood Habitat Is Limiting		
	Site Integrity		

South Dakota Rangeland Judging Scorecard

Contestant Name: Peggy Sue

Contestant Number: 4-F

County or School: Mondland - 2

Team Number or Name: 15

Score: Station 1 ____

Station 2 ____

Total : ____

Instructions

Place an X in the block that corresponds with the correct site and factor or description observed. Double check your answers making sure that the X is only in one box and does not overlap into the adjacent space.

		Station No. 1	2
Part VI	**Needed Management Practices**		
3 Pts. Ea.	1) Apply Invader Plant Control for Integrity of the Site		
	2) Continue Present Mgmt. for Beef		
	3) Apply Woody Plant Control for Beef Cattle		
	4) Develop Water for Beef Cattle		
	5) Begin a Planned Grazing System	X	
	6) Change Livestock Numbers or Duration of Grazing Period		
	7) Change the Kind of Grazing/Browsing Animal		
	8) Continue Present Management for Prairie Grouse		
	9) Improve Winter Food or Cover for Prairie Grouse		
	10) Improve Nesting Cover Quality for Prairie Grouse	X	
	11) Improve Nesting Cover Height for Prairie Grouse		
	12) Improve Brood Food for Prairie Grouse Chicks		
	13) Improve Brood Habitat		

The SI is determined by calculating the composition of the species at the judging station. It is entered in the "Percent Observed" column. Composition is by weight of species when they reach their peak growths. Contestants must visualize what plants will look like when they are fully grown and not grazed. For contest purposes, the composition contribution of shrubs and trees will be evaluated as percent canopy cover and expressed as percent composition. "Total Observed Composition" must total 100%. The "Percent Allowed" is determined by comparing "Percent Observed" to "Composition Maximums." For each species, the smaller value is entered in the "Percent Allowed" column, as in this example:

	Comp. maximums	*Percent observed*	*Percent allowed toward SI*
needlegrass	30	33	30
sideoats grama	10	5	5

Part III. Beef cattle carrying capacity

Use the beef cattle carrying capacity appraisal form (next page) for your calculations.

Section A:

Step 1: The information for number and type (cow/calf, yearling, or bull) of livestock will be given to you at the judging station. The example site is in west-central climatic area, and the producer wants to graze 100 cow/calf pairs and 4 bulls. Enter the number of beef cattle for each type on the beef cattle carrying capacity appraisal form in the appropriate space (in this example Station 1).

Step 2: Multiply the number of cattle in column one by the Animal Unit Conversion Factor in the second column. Enter the answer in column three, Animal Units (AU) to Graze. You will note that a 1000-pound cow with a calf is one animal unit; therefore, the conversion factor is 1.0. Yearling beef cattle weigh less than 1000 pounds and consume less forage; therefore, the conversion factor is 0.6. A bull weighs more than the 1000-pound cow and consumes more forage, thus has a conversion factor of 1.2.

Step 3: Add the Animal Units to Graze and enter your answer (104.8) on the bottom line, labeled Total Animal Units.

Section B:

Step 1: Enter your answer for Total Animal Units from Section A.

Step 2: The producer wants to graze 8 months. This information will be given for the station. Enter the 8 under the Months to Graze.

Step 3: Multiply column one, Total Animal Units, by the second column, Months to Graze, and enter the answer in the third column, Total Required Animal Unit Months (AUM) Capacity. In this example the total required capacity is 838.4 AUMs.

Part III. Beef Cattle Carrying Capacity Appraisal Form

Carrying capacity is the amount of forage which can be removed without damage to the resource. Capacity changes with the ecological sites and with plant composition, expressed as Similarity Index.

A. Animal Units ● What is the daily forage requirement of animals adjusted to the same base?

	Number of Cattle STA 1	Number of Cattle STA 2	X	Animal Unit Conversion Factor	=	Animal Units (AU) To Graze STA 1	Animal Units (AU) To Graze STA 2
Cow/calf pairs	_____	_____	X	1.0	=	_____	_____
Yearlings	_____	_____	X	0.6	=	_____	_____
Bulls	_____	_____	X	1.2	=	_____	_____
				Total Animal Units (AU)		_____	_____

B. Animal Unit Months ● How much forage is required for a specified amount of time?

	Total Animal Units	X	Months to Graze	=	Total Required Animal Unit Months (AUM's) Capacity
STA 1	_____	X	_____	=	_____
STA 2	_____	X	_____	=	_____

C. Ecological Site ● What is the ecological site? Use the ecological site determined earlier for this station, or determine now.

STA 1 ● Ecological Site Name_____ STA 2 ● Ecological Site Name_____

D. Similarity Index (SI) ● What is the SI for this site? Use SI calculated for the site, or it may be given. Enter below.

	76-100%	51-75%	26-50%	0-25%
STA 1				
STA 2				

E. Carrying Capacity Calculation ● What is the specific beef cattle carrying capacity for this Ecological Site with its Similarity Index?

From the Carrying Capacity Table, Part III, select the correct Available AUM/Acre for the Ecological Site and it SI.

	Available AUM/Acre	X	Acres (given)	=	Total Available AUM's Capacity
STA 1	_____	X	_____	=	_____AUM's
STA 2	_____	X	_____	=	_____AUM's

F. Forage Balance ● Does the unit have enough forage tomeet the livestock demand?

	STA 1	STA 2
Enter Total Required AUM Capacity (B)	_____	_____
Enter Total Available AUM Capacity (E)	_____	_____

	Check One STA 1	Check One STA 2
If (B) is larger, the capacity is too small	_____	_____
If (B) = (E), the capacity is exactly right	_____	_____
If (E) is larger, the capacity is larger than needed	_____	_____

Enter the correct responses from above on the scorecard

Section C:

Enter the Ecological Site name.

Section D:

Check **"76–100% Similarity Index.** You previously calculated the SI at 83%.

Section E: This section is used to calculate the carrying capacity for the range judging station.

Step 1: Select the correct **Available AUMs/Acre** for the **Ecological Site** from the **Carrying Capacity** table. The carrying capacity tables are specific for each Land Resource Area in South Dakota. For contests, the correct carrying capacity table will be provided with the SI worksheets.

Step 2: To use the Carrying Capacity table below, select the Loamy ecological site in the left hand column. Select the correct Similarity Index. In this example select 76-100%. Read the figure in the box below 76-100% and to the right of the Loamy Ecological Site. The Available Animal Months Per Acre (AUMs/Acre) would be 0.6 AUMs/Acre.

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR ROLLING SOFT SHALE PLAIN, MLRA 54, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's**			
Subirrigated	1.1	0.9	0.7	0.5
Overflow	0.9	0.75	0.6	0.4
Loamy, Clayey, Sandy, Sands	0.6	0.5	0.4	0.3
Thin Upland, Shallow, Claypan	0.42	0.37	0.27	0.19

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

NOTE: Use a higher AUM/Acre value when the site contains large quantities of any (alone or in combination) of these invader plants that are desirable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, alfalfa, and/or sweetclover.

Composition of listed plants	*AUM/Acre change*
21% – 40%	next higher rate
41% – 60%	2nd higher rate
61% or greater	3rd higher rate

Step 3: In this example, invader plants exist on the site, but they are less than 21%, so enter the 0.6 AUM/Acre and the acres given for the pasture size, 1440 acres. Multiply the AUMs/Acre times the Acres and enter your answer (864.0 AUMs) under Total Available AUMs Capacity. This is the total forage available for livestock grazing in the example.

Section F: In this section you will calculate whether there is enough forage in the pasture.

Step 1: Enter the **Total Required AUM Capacity from Section B**. Enter **838.4 AUMs required** in the space provided.

Step 2: Enter the **Total Available AUM Capacity, 864.0 AUMs available**, from Section E in the space provided.

Step 3: The **AUMs available** is greater than the **AUMs required**. Check on the Appraisal form that the capacity is larger than needed.

Step 4: Also enter this response on your **Rangeland Judging Scorecard, Part III,** by checking the box following **The Capacity is Larger Than Needed**.

REMEMBER: You are only scored on the responses you record on the Rangeland Judging Scorecard. The Beef Cattle Carrying Capacity Appraisal Form is only used to arrive at the correct answer and is not turned in for scoring.

Part IV. Beef cattle habitat

The contestant uses the beef cattle habitat appraisal form to evaluate the scenario and objectives in this contest example.

A. Forage factors
   1. Earlier in this example, a Similarity Index of 83% was determined. Enter "40" from the Appraisal Form. 40

   2. Forage diversity. Three plant growth forms are seen at the judging station (grasses, forbs, shrubs). 40

   3. Forage utilization of the flagged plant at the judging station is 30%. 40

   NOTE: There are no limiting forage factors; all are 40

B. Distribution factors
   1. Forage accessibility. Slope at the station is determined to be less than 5%. 40

   2. Grazing restraint. The station's shrub canopy cover is less than 20%. 40

   3. Water. Water is known to be 3/4 mile away. 35

C. Site integrity
   1. Invasive plants are less than 5%. 40

   Identify limiting factor(s), if any:

   The overall beef cattle habitat rating for existing conditions is 35 (an excellent value), which is higher than the manager's goal of 30. One factor, B.3, water, is the most limiting. Check "Distribution Factor is limiting" on the scorecard.

Part V. Prairie grouse habitat

The contestant determines the value described in the scenario for prairie grouse by using the prairie grouse habitat appraisal form, making these determinations:

	Habitat Value
A. Winter Components	
1. Winter Escape Cover: Shrubby cover at the judging station is about 10%.	30
2.Winter Roosting Cover: Grasses 8 inches or taller cover 70% of the area.	40
3.Winter Food: Woody vegetation occupies 15% of the area; cropland is within 1 mile.	40
B. Nesting Cover	
1. Quality mid and tall grasses predominate on 65% of the site.	40
2. Height: The flagged use plant at the station is 6" tall.	5
C. Brood Food	
5% of the vegetation is broadleaf plants; and bare ground is 15%.	25
D. Brood Habitat	
1. Protective Cover: More than 10% of site is shrub covered.	30
E. Site Integrity	
1. Invasive plants constitute less than 5%	40

The overall prairie grouse habitat rating for existing conditions is 5 (a poor value), which is less than the manager's goal of 25. One factor, B.2, nesting cover height, is the most limiting. For limiting factors, check only nesting cover as the limiting factor. If two are tied and both are below the stated goal, then both would be checked as limiting factors. Check "Improve Nesting Cover Height for Prairie Grouse" on the score card. Increase its value to the maximum (40) and identify the next most limiting factor.

Part VI. Needed management practices

To determine the needed management practice(s), increase all limiting factors (scores less than the management goal) to meet the management goal, and check the corresponding management practice(s). Application of a management practice assumes that the score is raised to the maximum of 40.

Practices to check in this example:

5. Begin a Planned Grazing System … because utilization at the site is too severe for prairie grouse nesting cover.

10. Improve Nesting Cover Height for Prairie Grouse … because this is a most limiting factor.

    Note: Although invader tall grasses are present, they are less than 5% of total estimated production.

Part III. Beef Cattle Carrying Capacity Appraisal Form

Carrying capacity is the amount of forage which can be removed without damage to the resource. Capacity changes with the ecological sites and with plant composition, expressed as Similarity Index.

A. Animal Units ● What is the daily forage requirement of animals adjusted to the same base?

	Number of Cattle		X	Animal Unit Conversion Factor	=	Animal Units (AU) To Graze	
	STA 1	STA 2				STA 1	STA 2
Cow/calf pairs	_____	_____	X	1.0	=	_____	_____
Yearlings	_____	_____	X	0.6	=	_____	_____
Bulls	_____	_____	X	1.2	=	_____	_____
				Total Animal Units (AU)		_____	_____

B. Animal Unit Months ● How much forage is required for a specified amount of time?

	Total Animal Units	X	Months to Graze	=	Total Required Animal Unit Months (AUM's) Capacity
STA 1	_____	X	_____	=	_____
STA 2	_____	X	_____	=	_____

C. Ecological Site ● What is the ecological site? Use the ecological site determined earlier for this station, or determine now.

STA 1 ● Ecological Site Name_____ STA 2 ● Ecological Site Name_____

D. Similarity Index (SI) ● What is the SI for this site? Use SI calculated for the site, or it may be given. Enter below.

	76-100%	51-75%	26-50%	0-25%
STA 1	☐	☐	☐	☐
STA 2	☐	☐	☐	☐

E. Carrying Capacity Calculation ● What is the specific beef cattle carrying capacity for this Ecological Site with its Similarity Index?

From the Carrying Capacity Table, Part III, select the correct Available AUM/Acre for the Ecological Site and it SI.

	Available AUM/Acre	X	Acres (given)	=	Total Available AUM's Capacity
STA 1	_____	X	_____	=	_____AUM's
STA 2	_____	X	_____	=	_____AUM's

F. Forage Balance ● Does the unit have enough forage tomeet the livestock demand?

	STA 1	STA 2
Enter Total Required AUM Capacity (B)	_____	_____
Enter Total Available AUM Capacity (E)	_____	_____

	Check One	Check One
If (B) is larger, the capacity is too small	_____	_____
If (B) = (E), the capacity is exactly right	_____	_____
If (E) is larger, the capacity is larger than needed	_____	_____

Enter the correct responses from above on the scorecard

Part IV. Beef Cattle Habitat Appraisal Form

(Refer to SI worksheet and flagged plant.)

A. Forage Factors • Characteristics of forage which influence quality.

1. Forage Conditions • How abundant are the preferred food-producing plants based on Similarity Index?

The Similarity Index for the site reflects the site value for cattle grazing.

The Similarity Index for the site reflects the site value for cattle grazing.

NOTE: Use your calculated Similarity Index to enter correct value.

	Circle Correct Value STA 1	STA 2
76-100%	40	40
51-75%	30	30
26-50%	5	5
0-25%	0	0

2. Forage Diversity • How diverse is the desirable food-producing plant community (growth forms = grasses/grasslikes, forbs, shrubs)? Growth forms represented on the site include:

	STA 1	STA 2
all 3	40	40
2 of 3	30	30
1 of 3	20	20

3. Forage Utilization • How much weight has been removed from key (marked) plants?

		STA 1	STA 2
Slight	1-20%	40	40
Moderate	21-40%	40	40
Full	41-60%	30	30
Close	61-80%	20	20
Severe	81% or greater	10	10

Enter lowest score of Forage Factors, 1, 2, and 3 above = Limiting Factor ❑ ❑

B. Distribution Factors • Physical resource factors that limit the grazing animal.

1. Forage Accessibility • How available are the factors that limit the grazing animal?

	Circle Correct Value STA 1	STA 2
Slope less than 5%	40	40
Slope 5-10% and smooth	35	35
Slope 5-10% and rough (exposed surface rock*)	25	25
Slope 11-15% and smooth	30	30
Slope 11-15% and rough (exposed surface rock*)	15	15
Slope greater than 15% and smooth	15	15
Slope greater than 15% and rough (exposed surface rock*)	10	10

* Exposed surface rock = Rocks greater than 4" across occupy more than 5% of judging area

2. Grazing Restraint ● How much shrubby canopy cover is there?

	Circle Correct Value	
Shrub canopy cover less than 20%	40	40
Shrub canopy cover 21-40%	35	35
Shrub canopy cover 41-60%	30	30
Shrub canopy cover greater than 60%	25	25

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

Distance less than ½ mile	40	40
Distance from ½ - 1 mile	35	35
Distance from 1 – 1 ¼ miles	30	30
Distance from 1 ¼ - 1 ½ miles	20	20
Distance from 1 ½ - 1 ¾ miles	15	15
Distance from 1 ¾ - 2 miles	10	10
Distance greater than 2 miles	0	0

Enter lowest of Distribution Factors, 1, 2, and 3 above = Limiting Factor ❑ ❑

C. Site Integrity ● Presence of invasive plants.

1. Are Invasive Plants present?

	Circle Correct Value	
	STA 1	STA 2
No – does not exceed 5%	40	40
Yes – resource value rating desirable	20	20
Yes – resource value rating undesirable	10	10

Enter Site Integrity value ❑ ❑

If any resource value is undesirable, the overall rating is undesirable.

Overall Beef Cattle Habitat Evaluation • Identify most limiting factor.

• STA 1:

(A) Forage Factors	(B) Distribution Factors	(C) Site Integrity		
☐	☐	☐	☐	Overall Habitat Rating Value for Existing Conditions. Enter on Score Card

• STA 2:

(A) Forage Factors	(B) Distribution Factors	(C) Site Integrity		
☐	☐	☐	☐	Overall Habitat Rating Value for Existing Conditions. Enter on Score Card

Part V. Prairie Grouse Habitat Appraisal Form

(Refer to SI worksheet and flagged plant.)

A. Winter Components • Characteristics which influence winter survival.

1. Winter Escape Cover • How much of the area is occupied by shrubby (woody) vegetation no taller than 15 feet.

	Circle Correct Value STA 1	STA 2
Patches of shrubby cover are greater than 51%	30	30
Patches of shrubby cover are 26-50%	40	40
Patches of shrubby cover are 6-25%	30	30
Patches of shrubby cover are 0-5%	20	20

2. Winter Roosting Cover • How much of the area is occupied by grass 8 inches or taller? Taller grasses are important for winter roosting. Judge live or standing dead grasses as though this is the end of the growing season.

Grasses 8 inches or taller cover more than 51%	40	40
Grasses 8 inches or taller cover 26-50%	30	30
Grasses 8 inches or taller cover 0-25%	20	20

3. Winter food • How much of area has desirable winter food potential? Many shrubs and trees, and all cropland have winter food potential. Use plant composition to estimate quantities of woody vegetation.

Woody vegetation occupies 10% or more of area, and with cropland within1 mile	40	40
Woody vegetation occupies 10% or more of area, but no cropland within 1 mile	30	30
Woody vegetation occupies 4-9% or more of area, and with cropland within 1 mile	20	20
Woody vegetation occupies 4-9% or more of area, but no cropland within 1 mile	15	15
Woody vegetation occupies 1-3% of area, and with cropland within 1 mile	10	10
Woody vegetation occupies 1-3% of area, but no cropland within 1 mile	5	5
No woody vegetation in area, and with cropland within 1 mile	5	5
No woody vegetation in area, and no cropland within 1 mile	0	0

Enter lowest score of Winter Components from 1, 2, & 3 above = Limiting Factor ❑ ❑

.B. Nesting Cover • Judge the vegetation as though this is the beginning of the nesting season.

1. Nesting Cover Quality • How much nesting cover is there?
Tall- and mid-grass composition is

- more than 60% of area	40	40
- 41-60% of area	30	30
- 21-40% of area	20	20
- 0-20% of area	10	10

2. Nesting Cover Height • How tall is the grouse nesting cover? Use flagged utilization plant.

Grass is taller than 16 inches	40	40
Grass is 12-16 inches tall	30	30
Grass is 8-11 inches tall	20	20
Grass is 4-7inches tall	5	5
Grass is less than 4 inches tall	0	0

Enter the lower value for Nesting Cover, 1 and 2 above = Limiting Factor ❑ ❑

C. Brood Food • Vegetation and soil characteristics which influence insect and spider abundance necessary for brood food. Grouse chicks rely heavily on insects and spider, and to some extent on broadleaf plants, during this critical phase of their life cycle. Insect and spider abundance are influenced directly by vegetation canopy shading and bare ground.

Vegetation is 10% or more broadleaf plants, and with >20% bare ground	40	40
Vegetation is <10% broadleaf plants, and with >20% bare ground	35	35
Vegetation is 10% or more broadleaf plants, and with 11-20% bare ground	30	30
Vegetation is <10% broadleaf plants, and with 11-20% bare ground	25	25
Vegetation is 10% or more broadleaf plants, and 0-10% bare ground	20	20
Vegetation is <10% broadleaf plants, and 0-10% bare ground	15	15

Enter value for Brood Food factor from above. ❑ ❑

D. Brood Habitat • Vegetative Characteristics which influence protective cover and the ability of grouse to use the site.

1. Brood Protective Cover Quality • How much shrub (woody) cover is present?
   Shrub canopy cover occupies:

More than 10% of the area	30	30
From 6-10% of the area	40	40
From 1-5% of the area	25	25
No shrubs are present in area	15	15

2. Mobility/Accessibility • Exposed ground (not covered by live or dead plant material).

Exposed ground greater than 50%	5	5
Exposed ground 31-50%	20	20
Exposed ground 11-30%	40	40
Exposed ground 10% or less	20	20

Enter the value for Brood Habitat ❑ ❑

E. Site Integrity • Presence of invasive plants.

1. Are Invasive Plants present?

	Circle Correct Value	
	STA 1	STA 2
No – does not exceed 5%	40	40
Yes – resource value rating desirable	20	20
Yes – resource value rating undesirable	10	10

Enter Site Integrity value ❑ ❑

If any resource value is undesirable, the overall rating is undesirable.

Overall Grouse Habitat Evaluation • Identify most limiting factor.

• STA 1

(A) Winter Components	(B) Nesting Cover	(C) Brood Food	(D) Brood Habitat	(E) Site Integrity		
☐	☐	☐	☐	☐	☐	Overall Habitat Rating Value for Existing Condition. Enter on Scorecard

• STA 2

(A) Winter Components	(B) Nesting Cover	(C) Brood Food	(D) Brood Habitat	(E) Site Integrity		
☐	☐	☐	☐	☐	☐	Overall Habitat Rating Value for Existing Condition. Enter on Scorecard

Plant Characteristics & Resource Rating Guide									Ecological and Resource Rating					
P = Perennial **A** = Annual **B** = Biennial **C** = Cool Season **W** = Warm Season **N** = Native **IN** = Introduced **IV** = Invader **De** = Desirable **Un** =Undesirable	Plant Characteristics								Prairie Grouse				Cattle	
									Food		Cover		Food	
	P	B	A	C	W	N	IN	IV	De	Un	De	Un	De	Un
GRASSES AND GRASSLIKE (MID & TALL)														
1) big or sand bluestem *Andropogon* spp.	X				X	X				X	X		X	
2) Canada wildrye *Elymus canadensis*	X			X		X				X	X		X	
3) crested wheatgrass *Agropyron cristatum*	X			X			X	X		X	X		X	
4) green needlegrass *Stipa viridula*	X			X		X			X		X		X	
5) Indian ricegrass *Oryzopsis hymenoides*	X				X	X			X		X		X	
6) Indiangrass *Sorgastrum nutans*	X				X	X				X	X		X	
7) junegrass *Koeleria macrantha*	X			X		X				X	X		X	
8) little bluestem *Schizachyrium scoparium*	X				X	X				X	X		X	
9) needleandthread *Stipa comata*	X			X		X			X		X		X	
10) plains muhly *Muhlenbergia cuspidata*	X				X	X				X	X		X	
11) porcupinegrass *Stipa spartea*	X			X		X			X		X		X	
12) prairie cordgrass *Spartina pectinata*	X				X	X				X	X		X	
13) prairie dropseed *Sporobolus heterolepis*	X				X	X			X		X		X	
14) prairie sandreed *Calamovilfa longifolia*	X				X	X				X	X		X	
15) quackgrass *Elytrigia repens*	X			X			X	X		X	X		X	
16) red threeawn *Aristida purpurea*	X				X	X		X		X	X			X
17) reed canarygrass *Phalaris arundinacea*	X			X		X				X	X		X	
18) sand dropseed *Sporobolus cryptandrus*	X				X	X				X	X			X
19) sideoats grama *Bouteloua curtipendula*	X				X	X			X		X		X	
20) slender wheatgrass *Elymus trachycaulus*	X			X		X				X	X		X	
21) smooth bromegrass *Bromus inermis*	X			X			X	X		X	X		X	
22) switchgrass *Panicum virgatum*	X				X	X			X		X		X	
23) tall dropseed *Sporobolus asper*	X				X	X				X	X			X
24) western wheatgrass *Pascopyrum smithii*	X			X		X				X	X		X	
GRASSES & GRASSLIKE (SHORT)														
25) annual brome *Bromus* spp.			X	X			X	X		X		X	X	
26) blue grama *Bouteloua gracilis*	X				X	X			X			X	X	
27) bluegrass *Poa* spp.	X			X			X	X		X		X	X	
28) buffalograss *Buchloe dactyloides*	X				X	X				X		X	X	
29) foxtail barley *Hordeum jubatum*	X			X		X				X		X		X
30) hairy grama *Bouteloua hirsuta*	X				X	X			X			X	X	
31) inland saltgrass *Distichlis spicata*	X				X	X				X		X		X
32) Scribner panicgrass *Dicanthelium oligosanthes*	X				X	X				X		X	X	
33) sedge *Carex* spp.	X			X		X			X		X	X	X	
34) sixweeks fescue *Vulpia octoflora*			X	X		X				X		X		X
35) tumblegrass *Schedonnardus paniculatus*	X				X	X				X		X		X
36) witchgrass *Panicum capillare*			X		X	X			X			X		X
FORBS														
37) absinthe wormwood *Artemisia absinthium*	X				X		X	X		X	X			X
38) alfalfa *Medicago sativa*	X			X			X	X	X		X		X	
39) American licorice *Glycyrrhiza lepidota*	X				X	X			X		X		X	
40) American vetch *Vicia americana*	X			X		X			X			X	X	
41) annual sunflower *Helianthus annus*			X		X	X			X		X		X	
42) breadroot scurfpea *Psoralea esculenta*	X			X		X			X			X		X
43) Canada thistle *Circium arvense*	X				X		X	X		X	X			X
44) clover *Trifolium* spp.	X			X			X	X	X			X	X	
45) cocklebur *Xanthium strumarium*			X		X	X		X		X	X			X
46) common mullein *Verbascum thapsus*		X			X		X	X		X	X			X
47) common yarrow *Achillea millefolium*	X			X		X			X			X		X
48) crazyweed *Oxytropis* spp.	X			X		X			X			X		X

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									Food		Cover		Food	
	P	**B**	**A**	**C**	**W**	**N**	**IN**	**IV**	**De**	**Un**	**De**	**Un**	**De**	**Un**
49) curlycup gumweed *Grindelia squarrosa*		X			X	X		X		X	X			X
50) daisy fleabane *Erigeron strigosus*		X		X		X			X		X			X
51) dame's rocket *Hesperis matronalis*		X		X			X	X	X		X		X	
52) deathcamus *Zigadenus* spp.	X			X		X				X		X		X
53) false boneset *Kuhnia eupatorioides*	X				X	X			X		X		X	
54) false gromwell *Onosmodium molle*	X				X	X			X		X			X
55) field bindweed *Convolvulus arvensis*	X				X		X	X	X			X	X	
56) field pennycress *Thlaspi arvense*			X	X			X	X		X	X			X
57) gayfeather *Liatris* spp.	X				X	X			X		X		X	
58) golden pea *Thermopsis rhombifolia*	X			X		X			X			X		X
59) goldenrod *Solidago* spp.	X				X	X			X		X			X
60) groundplum milkvetch *Astragalus crassicarpus*	X			X		X			X			X	X	
61) hairy goldaster *Chrysopsis villosa*	X				X	X			X			X		X
62) heath aster *Aster ericoides*	X				X	X			X		X			X
63) horseweed *Conzya canadensis*			X		X	X				X		X		X
64) hounds tongue *Cynoglossum officinale*		X		X			X	X		X		X		X
65) leafy spurge *Euphorbia esula*	X				X		X	X	X		X			X
66) Maximillian sunflower *Helianthus maximiliani*	X				X	X			X		X		X	
67) milkweed *Asclepias* spp.	X				X	X				X		X		X
68) parsley *Musineon & Lomatium* spp.	X			X		X			X			X		X
69) pasqueflower *Anemone patens*	X			X		X			X			X		X
70) penstemon *Penstemon* spp.	X				X	X			X			X	X	
71) phlox *Phlox* spp.	X			X		X				X		X		X
72) poison hemlock *Conium maculatum*	X				X		X	X		X	X			X
73) prairie clover *Dalea* spp.	X				X	X			X		X		X	
74) prairie coneflower *Ratibida columnifera*	X				X	X			X		X		X	
75) prairiesmoke *Geum triflorum*	X			X		X			X			X		X
76) pricklypear *Opuntia* spp.	X				X	X		X		X		X		X
77) purple coneflower *Echinacea angustifolia*	X				X	X			X		X		X	
78) ragwort *Senecio* spp.	X			X		X				X		X		X
79) rush skeletonplant *Lygodesmia juncea*	X				X	X				X		X		X
80) sagewort *Artemisia* spp.	X				X	X			X		X			X
81) salsify *Tragopogon dubius*		X			X		X	X		X		X	X	
82) scarlet gaura *Gaura coccinea*	X				X	X				X		X		X
83) scarlet globemallow *Sphaeralcea coccinea*	X				X	X			X			X		X
84) scurfpea *Psoralea* spp.	X				X	X			X		X			X
85) sensitive briar *Schrankia nuttallii*	X				X	X			X		X		X	
86) spanishclover deervetch *Lotus purshianus*			X		X	X			X			X		X
87) spiderwort *Tradescantia* spp.	X			X		X			X			X	X	
88) stiff sunflower *Helianthus pauciflorus*	X				X	X			X			X	X	
89) sweetclover *Melilotus* spp.		X		X			X	X	X		X		X	
90) wavyleaf thistle *Circium undulatum*	X				X	X				X		X		X
91) western ragweed *Ambrosia psilostachya*	X				X	X			X		X			X
92) western wallflower *Erysimum asperum*		X		X		X				X		X		X
93) wild onion *Allium* spp.	X			X		X			X			X	X	
94) woolly verbena *Verbena stricta*	X				X	X		X	X		X			X

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									Food		Cover		Food	
	P	**B**	**A**	**C**	**W**	**N**	**IN**	**IV**	**De**	**Un**	**De**	**Un**	**De**	**Un**
SHRUBS														
95) broom snakeweed *Gutierrezia sarothrae*	X				X	X				X	X			X
96) chokecherry *Prunus virginiana*	X				X	X			X		X			X
97) currant or gooseberry *Ribes* spp.	X			X		X			X		X			X
98) greasewood *Sarcobatus vermiculatus*	X				X	X				X	X			X
99) juniper *Juniperus* spp.	X				X	X			X		X			X
100) leadplant *Amorphia canescens*	X				X	X			X		X		X	
101) poison ivy *Toxicodendron radicaus*	X				X	X				X	X		X	
102) rubber rabbitbrush *Chrysothamnus nauseosus*	X				X	X				X	X			X
103) sagebrush *Artemisia* spp.	X				X	X			X		X			X
104) saltbush *Atriplex* spp.	X				X	X			X		X		X	
105) sand cherry *Prunus pumila*	X				X	X			X		X			X
106) sandbar willow *Salix exigua*	X				X	X			X		X		X	
107) serviceberry *Amelanchier* spp.	X				X	X			X		X		X	
108) silver buffaloberry *Shepherdia argentea*	X				X	X			X		X			X
109) skunkbrush *Rhus aromatica*	X				X	X			X		X			X
110) smooth sumac *Rhus glabra*	X				X	X			X		X		X	
111) western snowberry *Symphoricarpos occidentalis*	X				X	X			X		X			X
112) wild plum *Prunus americana*	X				X	X			X		X			X
113) wild rose *Rosa* spp.	X				X	X			X		X		X	
114) yucca *Yucca glauca*	X			X		X				X	X		X	
TREES														
115) American elm *Ulmus americana*	X				X	X			X		X		X	
116) boxelder *Acer negundo*	X				X	X			X		X			X
117) bur oak *Quercus macrocarpa*	X				X	X			X		X		X	
118) green ash *Fraxinus pennsylvanica*	X				X	X			X		X			X
119) juniper or cedar *Juniperus* spp.	X				X	X		X	X		X			X
120) plains cottonwood *Populus deltodies*	X				X	X			X		X			X
121) ponderosa pine *Pinus ponderosa*	X				X	X		X	X		X			X
122) Russian olive *Elaeagnus angustifolia*	X				X		X	X	X		X			X

Part I & II MLRA 53B - CENTRAL DARK BROWN GLACIATED PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	45		
switchgrass	20		
Indiangrass	15		
little bluestem	10		
needlegrasses	10		
western/slender wheatgrass	10		
prairie cordgrass	5		
other native grasses/sedges	5		
invader tall grasses	0		
Short Height			
sedges	5		
rushes & other grass-likes	5		
other native short grasses	0		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	30		
needlegrasses	15		
western wheatgrass	10		
switchgrass	10		
sideoats grama	5		
Indiangrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Rev. 5/30/2008

Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	20		
needlegrasses	20		
big or sand bluestem	10		
western wheatgrass	10		
little bluestem	5		
sideoats grama	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	7		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	30		
western/slender wheatgrass	20		
big bluestem	10		
sideoats grama	10		
little bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 53B - CENTRAL DARK BROWN GLACIATED PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
needlegrasses	25		
sideoats grama	5		
big bluestem	5		
plains muhly	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	5		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	20		
sideoats grama	15		
little bluestem	15		
big bluestem	15		
prairie sandreed	10		
western wheatgrass	10		
plains muhly	8		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	30		
needlegrasses	20		
sideoats grama	10		
plains muhly	10		
western wheatgrass	5		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
needlegrasses	18		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	15		
buffalograss	5		
native grasses/sedges	15		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 53B - CENTRAL DARK BROWN GLACIATED PLAINS (Page 3)

Sands Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
prairie sandreed	30		
sand bluestem	15		
needlegrasses	15		
little bluestem	10		
western wheatgrass	5		
switchgrass	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	5		
native grasses/sedge	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	8		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR CENTRAL DARK BROWN GLACIATED PLAINS, MLRA 53B, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.4	1.2	0.9	0.7
Overflow	1.0	0.8	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.65	0.5	0.4	0.3
Thin Upland, Shallow, Claypan	0.5	0.4	0.3	0.2

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 53C - SOUTHERN DARK BROWN GLACIATED PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	45		
switchgrass	20		
Indiangrass	15		
needlegrasses	10		
little bluestem	10		
western/slender wheatgrass	10		
prairie cordgrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
rushes & other grass-likes	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
green needlegrass	25		
western wheatgrass	15		
little bluestem	15		
porcupine grass	10		
switchgrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	10		
rushes and other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	30		
prairie sandreed	25		
little bluestem	25		
needlegrasses	20		
western wheatgrass	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	40		
western wheatgrass	20		
big bluestem	15		
little bluestem	15		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 53C - SOUTHERN DARK BROWN GLACIATED PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	40		
needlegrasses	25		
sideoats grama	10		
big bluestem	10		
little bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sand or big bluestem	35		
prairie sandreed	25		
little bluestem	20		
needlegrasses	15		
switchgrass	10		
sand dropseed	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	30		
needlegrasses	25		
sideoats grama	20		
big bluestem	10		
western wheatgrass	10		
other native tall grasses	20		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	65		
green needlegrass	35		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
buffalograss	5		
blue grama	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 53C - SOUTHERN DARK BROWN GLACIATED PLAINS (Page 3)

Claypan Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
green needlegrass	30		
needleandthread	10		
prairie sandreed	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	20		
buffalograss	5		
sedges	10		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR SOUTHERN DARK BROWN GLACIATED PLAINS, MLRA 53C, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.4	1.2	0.9	0.7
Overflow	1.0	0.8	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.65	0.5	0.4	0.3
Dense Clay, Thin Upland, Claypan	0.5	0.4	0.3	0.2

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 54 - ROLLING SOFT SHALE PLAIN (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	45		
switchgrass	15		
needlegrasses	10		
prairie cordgrass	5		
little bluestem	5		
Indiangrass	5		
western wheatgrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	10		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	30		
needlegrasses	25		
western wheatgrass	15		
switchgrass	10		
sideoats grama	5		
Canada wildrye	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	25		
big or sand bluestem	20		
needlegrasses	10		
little bluestem	5		
western wheatgrass	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
needlegrasses	30		
sideoats grama	5		
big bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
sedges	5		
other native short grasses	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 54 - ROLLING SOFT SHALE PLAIN (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	40		
needlegrasses	35		
sideoats grama	5		
big bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	5		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	25		
sideoats grama	15		
western wheatgrass	15		
little bluestem	10		
plains muhly	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	20		
little bluestem	20		
western wheatgrass	15		
plains muhly	15		
sideoats grama	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	7		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
needleandthread	15		
green needlegrass	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	15		
buffalograss	5		
native grasses/sedges	15		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Part I & II MLRA 54 - ROLLING SOFT SHALE PLAIN (Page 3)

Sands Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
big or sand bluestem	20		
prairie sandreed	20		
needlegrasses	15		
little bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR ROLLING SOFT SHALE PLAIN, MLRA 54, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.1	0.9	0.7	0.5
Overflow	0.9	0.75	0.6	0.4
Loamy, Clayey, Sandy, Sands	0.6	0.5	0.4	0.3
Thin Upland, Shallow, Claypan	0.42	0.37	0.27	0.19

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 55B - CENTRAL BLACK GLACIATED PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
switchgrass	20		
Indiangrass	10		
slender wheatgrass	10		
northern reedgrass	10		
prairie cordgrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	0		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	30		
needlegrasses	20		
switchgrass	10		
Indiangrass	10		
western/slender wheatgrass	10		
little bluestem	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	20		
needlegrasses	20		
big or sand bluestem	15		
little bluestem	10		
sideoats grama	10		
western/slender wheatgrass	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	30		
western/slender wheatgrass	20		
big bluestem	20		
sideoats grama	5		
little bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 55B - CENTRAL BLACK GLACIATED PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	40		
western wheatgrass	20		
slender wheatgrass	10		
big bluestem	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
buffalograss	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	20		
sideoats grama	15		
little bluestem	15		
big bluestem	15		
prairie sandreed	10		
western wheatgrass	10		
plains muhly	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	25		
needlegrasses	25		
big bluestem	10		
sideoats grama	10		
western wheatgrass	5		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
needlegrasses	20		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	15		
buffalograss	5		
native grasses/sedges	15		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 55B - CENTRAL BLACK GLACIATED PLAINS (Page 3)

Sands Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
needlegrasses	30		
prairie sandreed	25		
big or sand bluestem	15		
little bluestem	5		
western wheatgrass	5		
switchgrass	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
native grasses/sedge	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR CENTRAL BLACK GLACIATED PLAINS, MLRA 55B, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.4	1.2	0.9	0.7
Overflow	1.0	0.8	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.65	0.5	0.4	0.3
Thin Upland, Shallow, Claypan	0.5	0.4	0.3	0.2

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 55C - SOUTHERN BLACK GLACIATED PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
switchgrass	20		
Indiangrass	10		
slender wheatgrass	10		
northern reedgrass	10		
prairie cordgrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	0		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	30		
needlegrasses	20		
switchgrass	10		
Indiangrass	10		
western/slender wheatgrass	10		
little bluestem	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	20		
needlegrasses	20		
big or sand bluestem	15		
little bluestem	10		
sideoats grama	10		
western/slender wheatgrass	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	30		
western/slender wheatgrass	20		
big bluestem	20		
sideoats grama	5		
little bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 55C - SOUTHERN BLACK GLACIATED PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	40		
western wheatgrass	20		
slender wheatgrass	10		
big bluestem	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
buffalograss	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sand or big bluestem	35		
prairie sandreed	25		
little bluestem	20		
needlegrasses	15		
switchgrass	10		
sand dropseed	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	25		
needlegrasses	25		
big bluestem	10		
sideoats grama	10		
western wheatgrass	5		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	65		
green needlegrass	35		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
buffalograss	5		
blue grama	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 55C - SOUTHERN BLACK GLACIATED PLAINS (Page 3)

Claypan Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
green needlegrass	30		
needleandthread	10		
prairie sandreed	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	20		
buffalograss	5		
sedges	10		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR SOUTHERN BLACK GLACIATED PLAINS, MLRA 55C, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.4	1.2	0.9	0.7
Overflow	1.0	0.8	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.65	0.5	0.4	0.3
Dense Clay, Thin Upland, Claypan	0.5	0.4	0.3	0.2

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 58D - NORTHERN ROLLING HIGH PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem & switchgrass	55		
prairie cordgrass	20		
western wheatgrass	10		
slender wheatgrass	10		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	25		
needlegrasses	25		
big bluestem or sand bluestem	10		
little bluestem	15		
western wheatgrass	8		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	15		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	35		
western wheatgrass	30		
needlegrasses	25		
switchgrass	5		
prairie sandreed	5		
slender wheatgrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
blue grama	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	12		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
green needlegrass	25		
needleandthread	15		
big bluestem	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Part I & II MLRA 58D - NORTHERN ROLLING HIGH PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	45		
green needlegrass	25		
sideoats grama	10		
big bluestem	10		
plains muhly	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama and buffalograss	10		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	25		
western wheatgrass	20		
little bluestem	15		
sideoats grama	10		
big bluestem	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	25		
needlegrasses	20		
little bluestem	15		
plains muhly	8		
big bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
sedges	15		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	15		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	35		
needleandthread	25		
sand bluestem	15		
little bluestem	8		
western wheatgrass	3		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Part I & II MLRA 58D - NORTHERN ROLLING HIGH PLAINS (Page 3)

Claypan Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
needlegrasses	15		
sand dropseed	5		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue grama	15		
buffalograss	10		
sedges	10		
other native short grasses	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	15		
invader shrubs	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR NORTHERN ROLLING HIGH PLAINS, MLRA 58D, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.2	0.9	0.7	0.35
Overflow	0.8	0.5	0.4	0.3
Loamy, Clayey, Sandy, Sands	0.52	0.4	0.25	0.17
Thin Upland, Shallow, Claypan	0.4	0.25	0.17	0.13

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 60A - PIERRE SHALE PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem & switchgrass	55		
prairie cordgrass	20		
western wheatgrass	10		
slender wheatgrass	10		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	35		
big or sand bluestem	15		
little bluestem	15		
needleandthread	20		
western wheatgrass	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	15		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
western wheatgrass	30		
switchgrass	20		
green needlegrass	10		
slender wheatgrass	10		
Canada wildrye	8		
other native grasses/sedges	20		
invader tall grasses	0		
Short Height			
blue grama	5		
buffalograss	5		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
needleandthread	20		
green needlegrass	15		
sideoats grama	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Part I & II MLRA 60A - PIERRE SHALE PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	50		
green needlegrass	40		
sideoats grama	15		
big bluestem	10		
needleandthread	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	20		
sideoats grama	20		
needlegrasses	20		
western wheatgrass	15		
big bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	15		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	35		
sideoats grama	20		
western wheatgrass	15		
needlegrasses	15		
big bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	20		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	60		
green needlegrass	30		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
buffalograss	10		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 60A - PIERRE SHALE PLAINS (Page 3)

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	40		
green needlegrass	15		
needleandthread	15		
sideoats grama	5		
prairie sandreed	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	20		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sand bluestem	40		
prairie sandreed	30		
little bluestem	20		
needlegrasses	10		
western wheatgrass	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR PIERRE SHALE PLAINS, MLRA 60A, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.2	0.9	0.7	0.35
Overflow	0.8	0.5	0.4	0.3
Loamy, Clayey, Sandy, Sands	0.52	0.4	0.25	0.17
Dense Clay, Thin Upland, Shallow, Claypan	0.4	0.25	0.17	0.13

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 61 - BLACK HILLS FOOT SLOPES (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem, switchgrass, & Indiangrass	75		
prairie cordgrass	15		
sideoats grama	15		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem, switchgrass, & Indiangrass	45		
Canada wildrye	10		
green needlegrass	10		
little bluestem	15		
western wheatgrass	20		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem, switchgrass, & Indiangrass	30		
little bluestem	25		
prairie sandreed	40		
sideoats grama	25		
western wheatgrass	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	25		
western wheatgrass	25		
big bluestem	15		
sideoats grama	10		
little bluestem	10		
other native tall grasses	20		
invader tall grasses	0		
Short Height			
blue grama	10		
sedges	10		
other native short grasses	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 61 - BLACK HILLS FOOT SLOPES (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	25		
little bluestem	35		
needlegrasses	30		
sideoats grama	10		
western wheatgrass	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	35		
needleandthread	10		
big bluestem	50		
sideoats grama	35		
western wheatgrass	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
other native short grasses	15		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	30		
needlegrasses	25		
sideoats grama	30		
western wheatgrass	10		
other native tall grasses	25		
invader tall grasses	0		
Short Height			
blue or hairy grama	15		
buffalograss	5		
sedges	20		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
green needlegrass	40		
western wheatgrass	80		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 61 - BLACK HILLS FOOT SLOPES (Page 3)

Claypan Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
needlegrasses	25		
prairie sandreed	10		
western wheatgrass	50		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	30		
buffalograss	15		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	5		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR FOOTHILLS OF THE BLACK HILLS, MLRA 61, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.4	1	0.7	0.4
Overflow	0.9	0.65	0.45	0.25
Sandy, Loamy, Clayey	0.6	0.45	0.3	0.15
Dense Clay, Thin Upland, Shallow, Claypan	0.45	0.3	0.2	0.1

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NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 63A - NORTHERN ROLLING PIERRE SHALE PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	45		
switchgrass	15		
Indiangrass	15		
western wheatgrass	15		
little bluestem	10		
prairie cordgrass	8		
slender wheatgrass	8		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
western wheatgrass	20		
needlegrasses	20		
switchgrass	10		
slender wheatgrass	10		
Canada wildrye	5		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	8		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	30		
prairie sandreed	25		
needleandthread	20		
little bluestem	15		
switchgrass	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	8		
sedges	7		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	50		
needlegrasses	35		
sideoats grama	15		
big bluestem	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 63A - NORTHERN ROLLING PIERRE SHALE PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	50		
needlegrasses	30		
sideoats grama	15		
big bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sideoats grama	25		
western wheatgrass	20		
little bluestem	15		
needlegrasses	15		
big bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	15		
buffalograss	10		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
sideoats grama	20		
needlegrasses	20		
big bluestem	15		
little bluestem	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
buffalograss	10		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	80		
green needlegrass	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
buffalograss	10		
blue grama	10		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 63A - NORTHERN ROLLING PIERRE SHALE PLAINS (Page 3)

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
green needlegrass	25		
needleandthread	10		
prairie sandreed	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	15		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	15		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sand or big bluestem	35		
prairie sandreed	25		
little bluestem	15		
needleandthread	15		
sand dropseed	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR NORTHERN ROLLING PIERRE SHALE PLAINS, MLRA 63A, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.3	1.0	0.8	0.6
Overflow	0.9	0.7	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.65	0.5	0.4	0.3
Dense Clay, Thin Upland, Shallow, Claypan	0.47	0.4	0.3	0.2

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 63B - SOUTHERN ROLLING PIERRE SHALE PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
Indiangrass	20		
little bluestem	20		
switchgrass	15		
little bluestem	10		
prairie cordgrass	10		
sideoats grama	10		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
sedges	5		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
western wheatgrass	20		
needlegrasses	15		
switchgrass	10		
sideoats grama	10		
Indiangrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
rushes and other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	7		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	35		
prairie sandreed	25		
little bluestem	25		
switchgrass	20		
needlegrasses	15		
Indiangrass	15		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	35		
western wheatgrass	20		
big bluestem	15		
little bluestem	15		
sideoats grama	10		
other native tall grasses	20		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 63B - SOUTHERN ROLLING PIERRE SHALE PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	45		
needlegrasses	25		
sideoats grama	10		
big bluestem	10		
little bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	20		
sideoats grama	20		
little bluestem	20		
western wheatgrass	15		
needlegrasses	10		
prairie sandreed	10		
plains muhly	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	25		
western wheatgrass	25		
sideoats grama	20		
big bluestem	20		
needlegrasses	15		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	15		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	65		
green needlegrass	35		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
buffalograss	5		
blue grama	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 63B - SOUTHERN ROLLING PIERRE SHALE PLAINS (Page 3)

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
green needlegrass	25		
needleandthread	10		
prairie sandreed	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	15		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	15		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sand or big bluestem	40		
prairie sandreed	30		
little bluestem	25		
switchgrass	20		
Indiangrass	15		
needlegrasses	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR SOUTHERN ROLLING PIERRE SHALE PLAINS, MLRA 63B, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.3	1.0	0.8	0.6
Overflow	0.9	0.7	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.75	0.6	0.45	0.3
Dense Clay, Thin Upland, Shallow, Claypan	0.5	0.4	0.3	0.2

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 64 - TABLELANDS, BADLANDS, AND PINE RIDGE (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	25		
prairie cordgrass	15		
Indiangrass	15		
switchgrass	15		
little bluestem	15		
western wheatgrass	10		
slender wheatgrass	10		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	30		
prairie sandreed	30		
little bluestem	10		
needleandthread	20		
switchgrass	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	15		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
western wheatgrass	30		
switchgrass	15		
needlegrasses	10		
slender wheatgrass	5		
Canada wildrye	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
blue grama	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	30		
needlegrasses	25		
sideoats grama	10		
big bluestem	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Part I & II MLRA 64 - TABLELANDS, BADLANDS, AND PINE RIDGE (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	50		
needlegrasses	35		
sideoats grama	15		
big bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sideoats grama	20		
needlegrasses	20		
little bluestem	15		
western wheatgrass	15		
big bluestem	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	15		
buffalograss	5		
sedges	15		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	30		
sideoats grama	20		
western wheatgrass	15		
needlegrasses	15		
big bluestem	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	20		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Dense Clay Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	60		
green needlegrass	40		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
buffalograss	10		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 64 - TABLELANDS, BADLANDS, AND PINE RIDGE (Page 3)

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	40		
green needlegrass	25		
needleandthread	15		
porcupine grass	10		
prairie sandreed	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	15		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
prairie sandreed	40		
sand bluestem	25		
little bluestem	15		
needleandthread	10		
sand dropseed	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	10		
native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR TABLELANDS, BADLANDS, AND PINE RIDGE, MLRA 64, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.2	0.9	0.7	0.4
Overflow	0.8	0.6	0.4	0.3
Loamy, Clayey, Sandy, Sands	0.54	0.43	0.34	0.25
Dense Clay, Thin Upland, Shallow, Claypan	0.44	0.35	0.27	0.2

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 65 - NEBRASKA-SOUTH DAKOTA SAND HILLS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	50		
Indiangrass	30		
little bluestem	25		
switchgrass	15		
prairie cordgrass	15		
needlegrasses	15		
western wheatgrass	10		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
sedges	10		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	25		
sideoats grama	25		
needlegrasses	20		
big or sand bluestem	20		
prairie sandreed	10		
western wheatgrass	10		
other native tall grasses	20		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	8		
other native short grasses	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	30		
prairie sandreed	30		
needleandthread	20		
little bluestem	20		
switchgrass	10		
sideoats grama	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	15		
sedges	5		
other native short grasses	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	30		
western wheatgrass	20		
big bluestem	15		
little bluestem	15		
other native tall grasses	20		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 65 - NEBRASKA-SOUTH DAKOTA SAND HILLS (Page 2)

Sands Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
sand bluestem	40		
prairie sandreed	35		
little bluestem	25		
switchgrass	10		
Indiangrass	5		
sand lovegrass	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	5		
other native short grasses	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR NEBRASKA-SOUTH DAKOTA SAND HILLS, MLRA 65, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.3	1.1	0.9	0.7
Loamy	0.7	0.6	0.5	0.35
Sandy, Sands	0.65	0.5	0.4	0.3
Shallow	0.47	0.35	0.27	0.18

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 66 - DAKOTA-NEBRASKA ERODED TABLELAND (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
Indiangrass	20		
little bluestem	20		
switchgrass	15		
little bluestem	10		
prairie cordgrass	10		
sideoats grama	10		
other native grasses/sedges	15		
invader tall grasses	0		
Short Height			
sedges	5		
rushes & other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	40		
western wheatgrass	20		
needlegrasses	15		
switchgrass	10		
sideoats grama	10		
Indiangrass	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
rushes and other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	7		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	33		
prairie sandreed	28		
little bluestem	23		
needlegrasses	18		
switchgrass	15		
Indiangrass	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	10		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
needlegrasses	30		
western wheatgrass	20		
big bluestem	15		
little bluestem	15		
sideoats grama	10		
other native tall grasses	20		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 66 - DAKOTA-NEBRASKA ERODED TABLELAND (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	45		
needlegrasses	25		
sideoats grama	10		
big bluestem	10		
little bluestem	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue grama	10		
buffalograss	5		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	25		
sideoats grama	25		
big or sand bluestem	20		
needlegrasses	20		
western wheatgrass	10		
prairie sandreed	10		
plains muhly	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
blue or hairy grama	15		
sedges	8		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

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Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	30		
sideoats grama	20		
needlegrasses	15		
big bluestem	15		
western wheatgrass	15		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	20		
buffalograss	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	35		
green needlegrass	35		
needleandthread	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	20		
buffalograss	10		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 66 - DAKOTA-NEBRASKA ERODED TABLELAND (Page 3)

Sands Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
sand bluestem	40		
prairie sandreed	33		
little bluestem	25		
switchgrass	15		
needlegrasses	15		
Indiangrass	10		
sand lovegrass	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	10		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR DAKOTA-NEBRASKA ERODED TABLELAND, MLRA 66, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.3	1.0	0.8	0.6
Overflow	0.9	0.7	0.6	0.45
Loamy, Clayey, Sandy, Sands	0.75	0.6	0.45	0.3
Thin Upland, Shallow, Claypan	0.55	0.45	0.3	0.2

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 102A - ROLLING TILL PRAIRIE (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem or Indiangrass	40		
switchgrass	25		
prairie cordgrass	10		
little bluestem	10		
porcupine grass	8		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges and other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	60		
porcupine grass	10		
switchgrass	10		
Canada wildrye	10		
little bluestem	10		
sideoats grama	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Rev. 5/30/2008

Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	40		
little bluestem	30		
prairie sandreed	25		
needlegrasses	15		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem or Indiangrass	25		
little bluestem or sideoats grama	25		
needlegrasses	25		
slender/western wheatgrass	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 102A - ROLLING TILL PRAIRIE (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	35		
needlegrasses	30		
big bluestem	25		
slender/western wheatgrass	10		
sideoats grama	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Shallow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	25		
sideoats grama	15		
little bluestem	15		
needlegrasses	15		
prairie sandreed	10		
slender/western wheatgrass	5		
plains muhly	5		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Rev. 5/30/2008

Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	45		
needlegrasses	30		
big bluestem	20		
prairie dropseed	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	45		
green needlegrass	25		
big bluestem	15		
switchgrass	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	15		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 102A - ROLLING TILL PRAIRIE (Page 3)

Sands Ecological Site			
Dominant Plants	**Composition Maximums**	**Percent Observed**	**Percent Allowed**
Grasses and Grasslike:			
Tall and Mid Height			
sand bluestem	35		
prairie sandreed	30		
little bluestem	25		
needlegrasses	15		
switchgrass	10		
slender/western wheatgrass	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
native grasses/sedge	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR ROLLING TILL PRAIRIE, MLRA 102A, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.5	1.3	1	0.75
Overflow	1.25	0.9	0.7	0.5
Loamy, Clayey, Sandy, Sands	0.9	0.7	0.5	0.35
Thin Upland, Shallow, Claypan	0.75	0.6	0.4	0.25

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

Part I & II MLRA 102B - TILL PLAINS (Page 1)

Subirrigated Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem or Indiangrass	40		
switchgrass	25		
prairie cordgrass	10		
little bluestem	10		
porcupine grass	8		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges and other grass-likes	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	15		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Overflow Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem	60		
porcupine grass	10		
switchgrass	10		
Canada wildrye	10		
little bluestem	10		
sideoats grama	5		
other native grasses/sedges	10		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	5		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Rev. 5/30/2008

Sandy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big or sand bluestem	40		
little bluestem	30		
prairie sandreed	25		
needlegrasses	15		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	10		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Loamy Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
big bluestem or Indiangrass	25		
little bluestem or sideoats grama	25		
needlegrasses	25		
slender/western wheatgrass	10		
other native tall grasses	15		
invader tall grasses	0		
Short Height			
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 102B - TILL PLAINS (Page 2)

Clayey Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	35		
needlegrasses	30		
big bluestem	25		
slender/western wheatgrass	10		
sideoats grama	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	5		
native grasses/sedges	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Sands Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
sand bluestem	35		
prairie sandreed	30		
little bluestem	25		
needlegrasses	15		
switchgrass	10		
slender/western wheatgrass	5		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
native grasses/sedge	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Rev. 5/30/2008

Thin Upland Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
little bluestem	45		
needlegrasses	30		
big bluestem	20		
prairie dropseed	10		
sideoats grama	10		
other native tall grasses	10		
invader tall grasses	0		
Short Height			
blue or hairy grama	5		
sedges	5		
other native short grasses	5		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	10		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Claypan Ecological Site

Dominant Plants	Composition Maximums	Percent Observed	Percent Allowed
Grasses & Grasslike:			
Tall and Mid Height			
western wheatgrass	45		
green needlegrass	25		
big bluestem	15		
switchgrass	10		
other native tall grasses	5		
invader tall grasses	0		
Short Height			
blue grama	15		
native grasses/sedges	10		
invader short grasses	0		
Forbs:			
native forbs	10		
invader forbs	0		
Shrubs:			
native shrubs	5		
invader shrubs	0		
Trees:			
native trees	0		
invader trees	0		
TOTAL OBSERVED COMPOSITION		**100%**	
TOTAL ALLOWED FOR SIMILARITY INDEX			

Part I & II MLRA 102B - TILL PLAINS (Page 3)

Part III
LIVESTOCK CARRYING CAPACITY TABLE
FOR TILL PLAINS, MLRA 102B, SOUTH DAKOTA

	SIMILARITY INDEX (%)			
	76-100	51-75	26-50	0-25
Ecological Site:	**Carrying Capacity Expressed As Animal Unit Months Per Acre (AUM's/Ac):**			
Subirrigated	1.5	1.3	1	0.75
Overflow	1.25	0.9	0.7	0.5
Loamy, Clayey, Sandy, Sands	0.9	0.7	0.5	0.35
Thin Upland, Shallow, Claypan	0.75	0.6	0.4	0.25

Rev. 5/30/2008

NOTE: Use higher AUM/Ac value when site contains large quantities of any (alone or in combination) of these invader plants that are desireable forage: crested wheatgrass, intermediate wheatgrass, quackgrass, smooth bromegrass, bluegrass, alfalfa, and/or sweetclover.

Composition of Listed Plants	AUM/Ac Change
21% - 40%	next higher rate
41% - 60%	2nd higher rate
61% or greater	3rd higher rate

GRASSES AND GRASS-LIKE (MID & TALL)

1) big or sand bluestem
2) Canada wildrye
3) crested wheatgrass
4) green needlegrass
5) Indian ricegrass
6) Indiangrass
7) junegrass
8) little bluestem
9) needleandthread
10) plains muhly
11) porcupinegrass
12) prairie cordgrass
13) prairie dropseed
14) prairie sandreed
15) quackgrass
16) red threeawn
17) reed canarygrass
18) sand dropseed
19) sideoats grama
20) slender wheatgrass
21) smooth bromegrass
22) switchgrass
23) tall dropseed
24) western wheatgrass

GRASSES & GRASSLIKE (SHORT)

25) annual brome
26) blue grama
27) bluegrass
28) buffalograss
29) foxtail barley
30) hairy grama
31) inland saltgrass
32) Scribner panicgrass
33) sedge
34) sixweeks fescue
35) tumblegrass
36) witchgrass

FORBS

37) absinthe wormwood
38) alfalfa
39) American licorice
40) American vetch
41) annual sunflower
42) breadroot scurfpea
43) Canada thistle
44) clover
45) cocklebur
46) common mullein
47) common yarrow
48) crazyweed
49) curlycup gumweed
50) daisy fleabane
51) dame's rocket
52) deathcamus
53) false boneset
54) false gromwell
55) field bindweed
56) field pennycress
57) gayfeather
58) golden pea
59) goldenrod
60) groundplum milkvetch
61) hairy goldaster
62) heath aster
63) horseweed
64) hounds tongue
65) leafy spurge
66) Maximillian sunflower
67) milkweed
68) parsley
69) pasqueflower
70) penstemon
71) phlox
72) poison hemlock
73) prairie clover
74) prairie coneflower
75) prairiesmoke
76) pricklypear
77) purple coneflower
78) ragwort
79) rush skeletonplant
80) sagewort
81) salsify
82) scarlet gaura
83) scarlet globemallow
84) scurfpea
85) sensitive briar
86) spanishclover deervetch
87) spiderwort
88) stiff sunflower
89) sweetclover
90) wavyleaf thistle
91) western ragweed
92) western wallflower
93) wild onion
94) wooly verbena

SHRUBS

95) broom snakeweed
96) chokecherry
97) currant or gooseberry
98) greasewood
99) juniper
100) leadplant
101) poison ivy
102) rubber rabbitbrush
103) sagebrush
104) saltbush
105) sand cherry
106) sandbar willow
107) serviceberry
108) silver buffaloberry
109) skunkbrush
110) smooth sumac
111) western snowberry
112) wild plum
113) wild rose
114) yucca

TREES

115) American elm
116) boxelder
117) bur oak
118) green ash
119) juniper or cedar
120) plains cottonwood
121) ponderosa pine
122) Russian olive

		ECOLOGICAL & RESOURCE RATING													
		Desirable = De Undesirable = Un													
		PLANT CHARACTERISTICS								Prairie Grouse				Cattle	
										Food		Cover		Food	
Flag #	Plant #	Per-ennial	Biennial	Annual	Cool Season	Warm Season	Native	Intro-duced	Invader	De	Un	De	Un	De	Un
1		○	○	○	○	○	○	○	○	○	○	○	○	○	○
2		○	○	○	○	○	○	○	○	○	○	○	○	○	○
3		○	○	○	○	○	○	○	○	○	○	○	○	○	○
4		○	○	○	○	○	○	○	○	○	○	○	○	○	○
5		○	○	○	○	○	○	○	○	○	○	○	○	○	○
6		○	○	○	○	○	○	○	○	○	○	○	○	○	○
7		○	○	○	○	○	○	○	○	○	○	○	○	○	○
8		○	○	○	○	○	○	○	○	○	○	○	○	○	○
9		○	○	○	○	○	○	○	○	○	○	○	○	○	○
10		○	○	○	○	○	○	○	○	○	○	○	○	○	○
11		○	○	○	○	○	○	○	○	○	○	○	○	○	○
12		○	○	○	○	○	○	○	○	○	○	○	○	○	○
13		○	○	○	○	○	○	○	○	○	○	○	○	○	○
14		○	○	○	○	○	○	○	○	○	○	○	○	○	○
15		○	○	○	○	○	○	○	○	○	○	○	○	○	○
16		○	○	○	○	○	○	○	○	○	○	○	○	○	○
17		○	○	○	○	○	○	○	○	○	○	○	○	○	○
18		○	○	○	○	○	○	○	○	○	○	○	○	○	○
19		○	○	○	○	○	○	○	○	○	○	○	○	○	○
20		○	○	○	○	○	○	○	○	○	○	○	○	○	○

Resource Inventory, Present Conditions

		Station No.	
Part I	**Ecological Sites**	1	2
15 Pts.	Subirrigated		
	Overflow		
	Sands		
	Sandy		
	Loamy		
	Clayey		
	Dense Clay		
	Thin Upland		
	Shallow		
	Claypan		
		Station No.	
Part II	**Similarity Index**	1	2
10 Pts.	76% - 100% of Potential		
	51% - 75% of Potential		
	26% - 50% of Potential		
	0% - 25% of Potential		
		Station No.	
Part III	**Beef Cattle Carrying Capacity**	1	2
10 Pts.	The Capacity is Too Small		
	The Capacity is Exactly Right		
	The Capacity is Larger Than Needed		
		Station No.	
Part IV	**Beef Cattle Habitat Inventory**	1	2
10 Pts.	Excellent Value (31-40)		
	Good Value (21-30)		
	Fair Value (11-20)		
	Poor Value (< 11)		
3 Pts. Ea.	**Limiting Factors**		
	Forage Factor is Limiting		
	Distribution Factor is Limiting		
	Site Integrity		
		Station No.	
Part V	**Prairie Grouse Habitat Inventory**	1	2
10 Pts.	Excellent Value (31-40)		
	Good Value (21-30)		
	Fair Value (11-20)		
	Poor Value (< 11)		
3 Pts. Ea.	**Limiting Factors**		
	Winter Components Are Limiting		
	Nesting Cover Is Limiting		
	Brood Food Is Limiting		
	Brood Habitat Is Limiting		
	Site Integrity		

South Dakota Rangeland Judging Scorecard

Contestant Name _____

Contestant Number _____

County or School _____

Team Number or Name _____

Score: Station 1 _____

Station 2 _____

Total : _____

Instructions

Place an X in the block that corresponds with the correct site and factor or description observed. Double check your answers making sure that the X is only in one box and does not overlap into the adjacent space.

		Station No.	
Part VI	**Needed Management Practices**	1	2
3 Pts. Ea.	1) Apply Invader Plant Control for Integrity of the Site		
	2) Continue Present Mgmt. for Beef		
	3) Apply Woody Plant Control for Beef Cattle		
	4) Develop Water for Beef Cattle		
	5) Begin a Planned Grazing System		
	6) Change Livestock Numbers or Duration of Grazing Period		
	7) Change the Kind of Grazing/Browsing Animal		
	8) Continue Present Management for Prairie Grouse		
	9) Improve Winter Food or Cover for Prairie Grouse		
	10) Improve Nesting Cover Quality for Prairie Grouse		
	11) Improve Nesting Cover Height for Prairie Grouse		
	12) Improve Brood Food for Prairie Grouse Chicks		
	13) Improve Brood Habitat		