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South Dakota Rangeland and Pasture Grazing Records

South Dakota Cooperative Extension Service

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SOUTH DAKOTA RANGELAND AND PASTURE GRAZING RECORDS

SOUTH DAKOTA STATE UNIVERSITY
College of Agriculture and Biological Sciences
South Dakota Cooperative Extension Service

INDEX

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SOUTH DAKOTA RANGELAND AND PASTURE GRAZING RECORDS

The *South Dakota Rangeland and Pasture Grazing Records* book is designed to help ranchers and grassland managers keep accurate records of grazing use and range and pasture conditions. Monitoring and recording range and pasture condition response to grazing will allow you to evaluate the short-term and long-term effect of management on the forage resource and enable you to make management adjustments if conditions warrant.

Figure 1. Carrying Capacity of Ranges and Pastures in South Dakota.

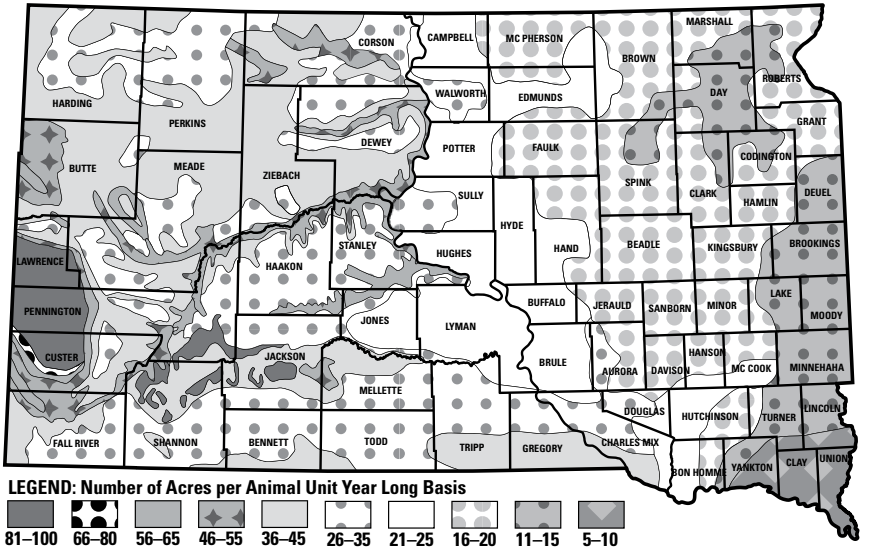

Table 1. Animal unit equivalents (AUE).

Species/classes of animals		Animal unit equivalent (AUE)	Forage consumed in pounds (air dry) day	month
Cattle	1,000 lb cow, dry	1.00	26	780
	1,000 lb cow with calf <4 months old	1.15	30	900
	1,000 lb cow with calf >4 months old (.3)	1.30	34	1020
	1,200 lb cow, dry	1.20	31	930
	1,200 lb cow, with calf <4 months old	1.35	35	1050
	1,200 lb cow, with calf >4 months old	1.50	39	1170
	750 lb yearling steer	.75	19.5	585
	1,750 lb bull, mature	1.75	45.5	1365
Sheep	Ewe, mature	.20	5	150
	Lamb (weanling to yearling)	.12	3	90
	Lamb (yearling)	.15	4	120
	Ram	.25	6.5	195
Bison	Bison cow, mature	.85	22	660
	Bison bull, mature	1.50	39	1170
Horses	Yearlings	.75	19.5	585
	Two-year old horses	1.00	26	780
	Mature light horses	1.25	32	960

Table 2. Approximate stubble heights of different forage species following grazing to achieve 50% utilization (by weight).

Species	Stubble height (inches)
Tall cool-season grasses (introduced) smooth bromegrass, intermediate wheatgrass, reed canarygrass, orchardgrass	**4 – 6**
Short cool-season grasses (introduced) Kentucky bluegrass, crested wheatgrass	**2 – 3**
Tall cool-season grasses (native) western wheatgrass, green needlegrass, needleandthread	**4**
Short cool-season grasses (native) prairie junegrass	**2 – 3**
Tall warm-season grasses (native) big bluestem, indiangrass, little bluestem, tall dropseed, switchgrass	**4 – 6**
Short warm-season grasses (native) hairy grama, blue grama, buffalograss	**2**

Monitoring 50% utilization by measuring stubble heights of key forage species.

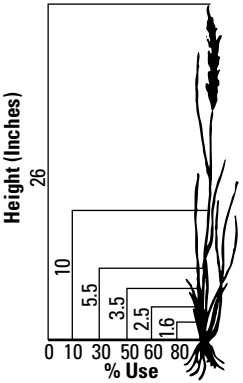

Figure 2. Percent utilization of green needlegrass at different stubble heights.

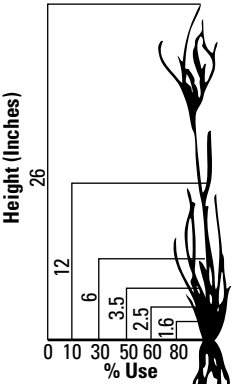

Figure 3. Percent utilization of needle – and – thread at different stubble heights.

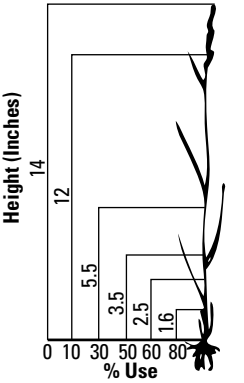

Figure 4. Percent utilization of western wheatgrass at different stubble heights.

Taylor and Lacey, 1987

Precipitation Record Sheet (for Pasture Use Index)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TOTAL												

MONITORING PASTURE RESPONSE

The Pasture Use Index (use with Tables 3 & 4)

Grazing date

Record the index value that corresponds with the month the pasture was grazed. If grazing covers more than one month, add the index values of those months together.

Pasture stubble height

Record the index value that corresponds with the stubble height of key forage species after the final grazing period.

Moisture

Record the index value that corresponds with the precipitation levels that occurred through the calendar year.

Calculating the Index Score

Add up the index values from each of the 4 categories to get a pasture score. Pasture scores can range from -9 to +10.

Management Adjustments

The objective is to avoid management practices that result in negative pasture scores.

(-) If pasture score is negative, the time that the pasture is grazed next year should be changed. If pasture score is negative two years in a row, the time that the pasture is grazed next year should be changed and stocking rate should be reduced to aid in recovery.

(0) If pasture score is zero, the time that the pasture is grazed next year should be changed, but no stocking rate adjustments will likely be necessary.

(+) If pasture score is positive, the time that the pasture is grazed next year should be changed, but overall, management practices are sufficient to sustain long-term forage production and animal performance.

Table 3. Pasture use index for smooth bromegrass dominated pastures (Modified from Reece et al., 2003 by A.J. Smart and E.M. Mousel).

Grazing Date	Index
April: spring greenup	0
May: early rapid growth phase	-3
June: late rapid growth phase	-2
July: seed set	1
August: summer dormancy	2
Continuous grazing May – October	-3
Fall: September – October (new tiller initiation for next year)	-2
Precipitation	**Index**
Well above average (grater than 25% above normal)	2
Near normal	0
Drought (Less than 75% of normal	-2
Stubble Height (of key forage species)	**Index**
Excellent: Greater than 8 inches of stubble	2
Adequate: 4 to 8 inches of stubble	0
Poor: Less than 4 inches of stubble	-2
Fertilization	**Index**
Fertilized	2
Not fertilized	0

Table 4. Pasture use index for western wheatgrass-green needlegrass dominated rangeland (Modified from Reece et al., 2003 by A.J. Smart and E.M. Mousel).

Grazing Date	Index
April: spring green-up	0
May: early rapid growth	-1
June: late rapid growth	-3
July: seed set	0
August: summer dormancy	1
Fall: September – October (new tiller initiation)	-1
Winter: November – March (true dormancy)	+3
Precipitation (April – June)	**Index**
Well above average (greater than 25% above normal)	2
Near normal	0
Drought (less than 75% of normal)	-2
Stubble Height (of key forage species)	**Index**
Excellent: 4 to 8 inches of stubble	+2
Adequate: 2 to 4 inches of stubble	0
Poor: Less than 2 inches of stubble	-2

Pasture		Livestock				
A	**B**	**C**	**D**	**E**	**F**	**G**
Pasture	Acres	Animal Units			Pasture	
		AU Value	# Animals	Total AU	Date In	Date Out
		Table 1		**E** x **F**		
North	1000	1.3	340	442	6/15/07	8/1/07

Grazing Records					
H	**I**	**J**	**K**	**L**	**M**
AU Days Grazing	Grazing Date Score	Precipitation Score	Stubble Height Score	Fertilization Score	Pasture Score
E x (G - F)	**Table 3 or 4**	**Table 3 or 4**	**Table 3 or 4**	**Table 4**	**I + J + K + L**
19,890	-1	-2	0	2	-1

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Ranch name . . . . . .

Address . . . . . .

Phone . . . . . .

Year . . . . . .

SDSU Animal and Range Science Web Site: **http://ars.sdstate.edu**