

RANGELAND MANAGEMENT GUIDE SHEET

For Use in Douglas and Elbert Counties, Colorado

Dan Nosal, NRCS Rangeland Management Specialist
Telephone: 303-218-2632; Email: daniel.nosal@usda.gov

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INTRODUCTION

- This guide sheet was created to assist landowners (primarily small acreage) with education and management of their rangeland.
- Productivity of rangeland is limited by climate, soil type, topography, and vegetative species present.
- Succession is the replacement of one plant community by another until a somewhat stable community is reached. This stable community is often referred to as the climax plant community. This condition is generally assumed to have occurred on our rangelands prior to European settlement and is our reference for determining range condition.
- The traditional range condition (similarity index) classes are excellent, good, fair, and poor. Excellent range condition is defined as: 76-100% of the vegetation is a mixture of desirable plants (grasses, legumes, forbs, and shrubs) in allowable proportions similar to the climax plant community. Good is 51-75% desirable plants present. Fair is 26-50% desirable plants, with mostly undesirable forbs and shrubs present. Poor is defined as 0-25% desirable plants, with invader plants making up the major portion of the vegetation.

CARRYING CAPACITY

- Carrying capacity is defined as the number of animals that a parcel of land can support without overgrazing. It is a function of: type of animal, number of animals, range condition, range site (ecological site), production, and number of acres being grazed.
- The Natural Resources Conservation Service (NRCS) Ecological Site Descriptions (ESD's) may be used to determine average production in a normal growing season based on Animal Unit Months per acre (AUM's/AC) or acres per Animal Unit Month (AC/AUM). An AUM is the amount of forage necessary to carry one Animal Unit (AU) for one month. An AU is equivalent to a 1000-pound animal. Web Soil Survey may be used to correlate soils to ecological sites and determine average vegetative production in pounds/acre <http://websoilsurvey.nrcs.usda.gov/app/>. A range inventory may be conducted to determine range condition, average production, and stocking rates. This requires knowledge and training in estimating total production and species composition.
- A simpler method is to use average AUM/AC or AC/AUM figures for each range condition class based on the NRCS ESD's. These figures assume you have normal annual precipitation. Drought years will need to be adjusted accordingly. **The following are average AUM/AC (AC/AUM) figures for each range condition class:**

<u>Excellent</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>
.6 (1.7)	.5 (2.0)	.4 (2.5)	.3 (3.3)

- The majority of properties in this area are in fair condition with lesser amounts of good condition rangeland. **If you are unsure of your range condition class, an average figure to use would be .45 AUM/AC (2.2 AC/AUM) or less if on forested and/or rocky soils. This equates to a stocking rate of 27 acres per animal unit per year.**

ANIMAL UNIT EQUIVALENTS (AUE's)

Cow or Cow/Calf Pair = 1.0 (Assuming a 1000# cow)
Bull = 1.8 (Average 1800# bull)
Weaned Calf (500-700#) = .5 - .7
Heifer/Steer (13-18 Months or 700-900#) = .7 - .9
Heifer/Steer (19-24 Months or 900-1100#) = .9 - 1.1
Other Animals = .1 AU for Each 100# of Body Weight

Horse = 1.25 (Average 1250#)
Bison = 1.0
Sheep = .15
Goat = .1
Llama = .25
Alpaca = .1

CARRYING CAPACITY WORKSHEET

Animal Unit Months/Acre (See Reverse Side) = _____ Acres Grazed = _____

AUM's/AC X Acres Grazed = Total AUM's (Available or Useable Forage) _____

AUE's (From Table Above) _____ X Number of Animals _____ = Total AU's _____

Total AUM's of Forage _____ / Total AU's _____ = Months of Grazing Available/Year _____

Months of Grazing Available/Year X 30.4 Days/Month = Days of Grazing Available/Year _____

Days of Grazing Available/Year X 24 Hours/Day = Hours of Grazing Available/Year _____

Hours of Grazing Available/Year / 52 Weeks = Hours of Grazing Available/Week _____

ROTATION GRAZING SYSTEM

- *After* determining the carrying capacity, then a rotation grazing system should be considered. However, the total number of days/hours grazed in a rotation grazing system per year should not exceed the number of days/hours allowed by the carrying capacity (as calculated above) for the grazed area per year.
- Rotation grazing is defined as a practice in which two or more pastures are alternately rested and grazed in a planned sequence for a period of years. If rotation grazing is not practiced then range condition may not improve, *even with proper carrying capacity*. Continuous grazing allows the animals to selectively graze, so desirable plants will continue to be overused and undesirable plants will continue to flourish.
- A rotation grazing system should provide for 90+ days of recovery for each pasture following each grazing period. To determine the grazing period for each pasture: divide the recovery period desired by the number of pastures being rested. This assumes pastures of relatively equal size. If you have different sized pastures, then the grazing period will need to be adjusted accordingly. A maximum of two grazing periods should occur in each pasture during the growing season.
- Grazing periods should be as short as possible (10 days or less) and recovery periods as long as possible (90+ days). This type of grazing regime attempts to mimic how bison grazed prior to European settlement. This may require cross-fencing existing pastures to increase the number of available pastures. Ten or more pastures are recommended per herd to implement a grazing system that will improve rangeland condition. Again, this assumes that the total number of days/hours grazed does not exceed carrying capacity.
- The animals should be rotated as one herd to allow for maximum pasture recovery.
- Cross-fencing may consist of temporary or 2-strand electric power fence to reduce cost.