

Appendix 13

GREEN MOUNTAIN EIS METHODOLOGY USED TO DETERMINE FORAGE DEMAND AND SUPPLY

An inventory of the BLM Lander Resource Area was conducted from June 1977 to October 1979, and the data collected were used to calculate the average annual forage production to be distributed among livestock, wild horses, and wildlife. The soil vegetation inventory method (SVIM) used is described in the BLM Manual, Section 4412.14D3C(1). Study data, maps, and reference from the inventory and forage designation process are available for inspection at the BLM Lander Resource Area Office.

Existing vegetation was mapped for each allotment. Within each allotment, vegetation transects were laid out to sample each vegetation type. Each transect consisted of ten to twenty weight-estimate plots. With this number of plots per transect, it was estimated that for 75 percent of the transects, the average weight of vegetation in the plots was within 25 percent of the true average weight for the vegetation type.

The data were processed by the BLM Denver Service Center. Data from weight-estimate plots were adjusted to maximum production for the season, using data from a plant phenology study conducted in 1979. Production figures were based on mature dry weights. The production figures were further adjusted to reflect the conditions of an average year for plant growth by using a climate adjustment factor based on precipitation and production data collected from 1965 to 1979, by the University of Wyoming, at study exclosures in the Green Mountain EIS area. The forage production was apportioned among livestock, wildlife, and wild horses, using a forage distribution computer model to process the weight-estimate data. For this model, the use of forage available for grazing allowable use factor (AUF) was maximized, subject to proper use factor (PUF), dietary, animal numbers, and management constraints.

An AUF for each type of grazing animal was applied to the production of each plant species to arrive at the total pounds of herbage and the percent of the plant that could be removed by grazing animals without affecting the viability of the plant. The AUFs were adjusted according to the following seasons of use: spring-March 21 through June 20, summer-June 21 through September 20, fall-September 21 through December 20, winter-December 21 through March 20.

PUFs used in the determination of forage distribution were obtained from PUF tables prepared by the BLM Lander Resource Area Office. PUFs were applied to each plant. PUFs include the amount of herbage that can be removed without damaging the plant and the preference of the grazing animal for that particular species. PUFs vary with the season of use, because plant defoliation anytime during the growing period is harmful to the plant. PUFs did not exceed 50 percent of the current year's growth.

Wildlife numbers from the Wyoming Game and Fish Department's strategic plan were used in the forage distribution process. The pounds of forage required by the following animals for one month are: cattle-780, horses-900, mule deer-103, antelope-74, sheep-150, elk-374, moose-652, and bighorn sheep-116. These figures were used to determine total forage consumed for each allotment.

The percent of suitable, potentially suitable, and unsuitable land for each vegetation type was also determined. Suitable land criteria were established only for livestock and wild horses; wildlife use was restricted to seasonal ranges, not allotment boundaries. The criteria were based on distance from water, slope, and production. Vegetation types with a production of 25 pounds per acre or less (32 acres per AUM) were considered unsuitable due to low production.

Amounts of consumptive and nonconsumptive vegetation were obtained from the forage distribution process. Forage supply as herein presented is the best currently available estimate of the present situation. Forage supply could increase or decrease, depending on management actions implemented.