

Applying Grazing Management Strategies to Mitigate Elk Impacts on Agricultural Land

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SUMMARY

Elk and deer use of agricultural land in the north Grande Ronde Valley has been monitored since 1993. In 1994 fertilization, salting, water development, and forage seedings, treatments were applied to seasonal rangeland on the perimeter of the valley floor. Additional treatments will be applied in 1995. Elk and deer use will be monitored through 1997 to determine if forage enhancement will change elk use of agricultural land.

INTRODUCTION

The perimeter of the Grande Ronde Valley in northeastern Oregon is a mosaic of forested land, seasonal rangeland, and agricultural land that provides favorable habitat for wintering Rocky Mountain Elk (*Cervus elaphus nelsonii*). Elk use of privately owned land, particularly agricultural land during the cropping season from late spring to early fall, has created the situation whereby landowners regard the presence of elk in the area as being incompatible with agriculture. Increasing the complexity of the issue is the urbanization of former timber/rangeland areas into small landholdings. Landowners express a diversity of opinions concerning elk use of the valley floor.

A major factor influencing the conflict over elk use of agricultural land is the incomplete habitat for elk on the valley floor that influences elk to use agricultural land as a habitat substitute. Conversion of land to agriculture, logging of forest lands, grazing by domestic livestock, and urbanization has altered elk habitat and elk behavior. The total area of traditional elk winter habitat has been reduced, or significantly altered, while creating habitat attractive to elk during other seasons.

The primary goal of the study is to develop grazing management strategies that minimize the impact of elk on agricultural land on the valley floor. A secondary goal of the project is to foster cooperation among landowners, wildlife management agencies, and private supporters of elk. Support for the project, in addition to Eastern Oregon Agricultural Research Center and the Oregon Department of Fish and Wildlife, has been provided by private and public organizations, including the Rocky Mountain Elk Foundation and the USDA-Forest Service.

MATERIALS AND METHODS

The project that was initiated in January, 1993, is being implemented over a 5-year period. Pre-treatment monitoring of elk use of the valley floor occurred between 1993 and 1995. Grazing management treatments were applied in the fall of 1994. Other applications are scheduled for spring and fall of 1995. Elk use of the valley floor will be monitored from

1995 to 1997 to determine treatment effect on elk behavior. Monitoring of elk use was accomplished by establishing vehicle observation routes around the perimeter of the valley. The routes are traveled three times a week.

Grazing management treatments implemented in the fall of 1994 included: 1) fertilization of 600 acres of public and private seasonal rangeland along the edge of the valley floor, 2) placement of salt licks at strategic locations on uplands surrounding the valley floor, and 3) the development of elk foraging areas away from the agricultural land. Treatments anticipated for the spring and fall of 1995 include: 1) establishment of five water sources on the largest and most secluded forested land area adjoining the valley floor, 2) establishment of salt licks, 3) additional fertilization of upland seasonal rangeland on the western and eastern perimeters of the valley floor, and 4) creation of additional elk foraging areas away from agricultural land.

RESULTS AND DISCUSSION

Since inception of the elk monitoring routes throughout the north Grand Ronde Valley, 1,600 observations of elk and deer use of valley floor land have been obtained. These observations constitute pre-treatment monitoring of elk and deer use of mostly agricultural land. Monitoring in 1995 will constitute monitoring of elk and deer use during the treatment phase of the project. Monitoring of elk and deer use in 1996 and 1997 will constitute post-treatment monitoring of elk and deer use. Treatment success will be determined by comparing pre- and post-treatment elk and deer use of agricultural land and the treatment area. Two years of post treatment monitoring will not only provide information on relative success of the treatments in mitigating elk and deer use of agricultural land, but will also provide information on the longevity of the treatment impact.

Pre-treatment observations of elk and deer use are currently being entered into a geographic information system (GIS). Observations of elk and deer also provide information on land type used, weather conditions, and timing of use, all of which can be spatially defined. Post-treatment observations and treatment areas will be entered as the information is obtained. Spatial analysis capabilities of the GIS will be used to determine if treatments caused significant changes in elk use of agricultural land, and to formulate guidelines for applying future treatments to mitigate conflict over elk use of the valley floor.