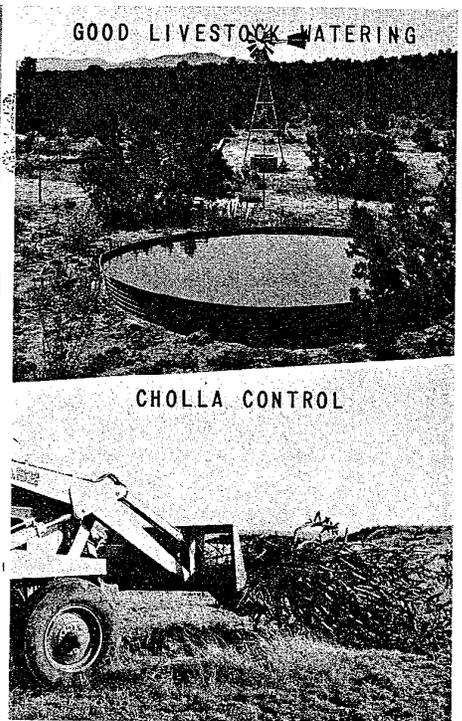
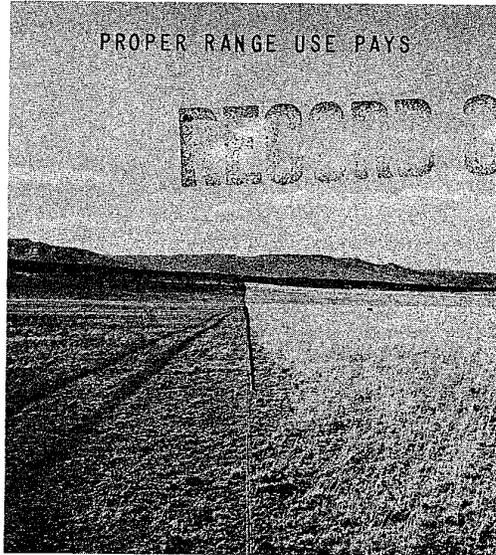


RANGE CONSERVATION - TECHNICAL NOTES



U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
NEW MEXICO

RANGE TECHNICAL NOTE NO. 18

February 23, 1967

Subject: RANGE MANAGEMENT BEFORE AND AFTER BRUSH CONTROL (Part II)

The information in this Technical Note was developed at a range management workshop, with Soil Conservation Service and University personnel contributing.

This information will serve as guidance, and must be adapted by the technician to specific local conditions.

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DEFERRED GRAZING AND BRUSH CONTROL

Deferred grazing before and after brush control will in many cases determine the effectiveness of the brush control practice. It is necessary to define certain terminology before this subject can be explored properly. The references to the specific terms in the text of this outline will be in accordance with the following definitions:

I. DEFINITIONS - terms used in reference to deferred grazing.

- A. Deferred Grazing - Discontinuance of grazing by livestock on an area for a specified period of time during the growing season to promote plant reproduction, establishment of new plants, or restoration of vigor of old plants.
- B. Purpose of Deferred Grazing - To promote natural revegetation by increasing the vigor of the forage stand, permitting desirable plants to produce seed (or expand vegetatively), to provide a feed reserve and permit seedling establishment. Deferment should involve removal of all domestic livestock for a prescribed period.

II. BENEFITS OF DEFERMENT PRIOR TO BRUSH CONTROL

- A. Benefits are most apparent when the vegetative composition is unhealthy and relief from constant grazing pressure would increase vigor and stamina of the plants, particularly the more desirable plants. As is accepted, such plants would be in a better position to make the most of moisture and light while developing a competitive effect to suppress brush regrowth.
- B. Such deferments would allow for a seed crop prior to control, enhancing the chances of re-establishment of the vegetative composition.
- C. These deferments would also assist in determining the type of brush control best suited to a pasture, as the rancher could make final analysis as to the need for seeding.
- D. The primary objective of brush control is to increase forage yield and better kinds of plants. This objective is accomplished by permitting the better natural forage plants to gain vigor and size as well as increase in stand. Deferred grazing before brush control often gives them a running start in doing this.

III. BENEFITS OF DEFERMENT AFTER BRUSH CONTROL

- A. Allows for establishment of seeded species (to prevent pulling up).
- B. Permits established weakened plants to regain vigor, develop root systems, make seed, and develop ground cover to control erosion.
- C. Increases forage yield and provides a reserve of forage.
- D. Permits established plants to compete with undesirable woody species affected by control.

IV. NEED FOR DEFERMENT FOLLOWING BRUSH CONTROL BY CONTROLLED BURNING

- A. Complete rest is essential prior to burning to:
 - (1) permit build-up of litter accumulation for fuel supply.
 - (2) allow for maximum vigor development.
 - (3) develop litter for retention of surface moisture.
- B. Complete rest is essential following burning to:
 - (1) permit litter accumulation for second burning. Frequently two successive burnings are needed to obtain desirable brush control.
 - (2) to allow for sufficient recovery of forage species to:
 - (a) develop forage supply and gain in vigor.
 - (b) permit plants to readjust following shock induced by fire.
 - (3) to allow desirable forage plants to develop under less competitive conditions.

V. CONDITIONS UNDER WHICH DEFERMENT PRIOR TO BRUSH CONTROL WOULD NOT BE PARTICULARLY BENEFICIAL

- A. If brush is of sufficient density to suppress further desirable vegetative development, deferment would be of limited value.

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- B. If the plant composition is such that seeding is essential, there wouldn't be much accomplished. In fact, heavy grazing may have a tendency to reduce competition up to the time of seedling emergence.
- C. If the method of control is such that the severity of ground disturbance would tend to destroy existing vegetation, thereby creating a need for reseeding, prior deferment benefits would be limited to the seed produced prior to brush control. This can be quite important in natural recovery where some climax plants are present.

VI. ECONOMICS AND SIZE OF PASTURES

- A. Resting pastures reduces parasitic problems.
- B. Deferment delays harvesting forage; it is not lost. Such deferments:
 - (1) reduce hazards of drought by providing reserve forage supplies.
 - (2) improve yield and condition, thereby increasing stability and income from livestock grazing.
 - (3) permit heavier livestock numbers when forage is harvested thereby encouraging more uniform grazing distribution and more efficient harvesting.
- C. One-pasture ranches are not conducive to workable ranching units. Pastures too large (in proportion to other pastures) to permit grazing management also are a disadvantage, because:
 - (1) there is no way to rotate stock or rest a pasture.
 - (2) it is difficult to get uniform grazing distribution.
 - (3) big pastures encourage spot grazing. Deferments discourage selective grazing habits.
 - (4) it is difficult to treat, defer and improve a portion of a pasture when it is too large to treat as a whole.

VII. MANAGEMENT AFTER BRUSH CONTROL AND DEFERMENT WITH RESPECT TO VEGETATION, LIVESTOCK, AND THE RANCHER

- A. Establishment of vegetation following control of significant amounts of brush requires at least one full growing season for species

involved, or objective to be accomplished. In a high percent of pastures two successive deferments during the growing season are needed to realize optimum benefits.

- B. Any time subnormal rainfall is received, or forage plants do not make adequate recovery following brush control, deferment should be reapplied the next growing season.
- C. It is important that the rancher know any differences among his pastures in capability to produce forage, and that kinds of livestock kept are such that he can make time adjustments to fit increased or decreased forage supplies.
- D. Goats will be needed to control or manage sprout regrowth following chaining or dozing of oak. Such operations are designed to give adequate sprout control and minimum grass usage. The duration of grazing is regulated by "in and out" goating based on rate of sprout regrowth. (This does not include shinnery.)
- E. Types of vegetation vary the lengths of deferment in that their growth cycles are different. Many grasses require a full growing season to grow and mature seed, while others require less than a full growing season.
- F. Deferment frequency should be sufficient to insure optimum improvement and maintenance of the desirable vegetation.
- G. Most brush control operations should be completed prior to initiation of a deferred rotation system.
- H. There are various degrees of need for deferment -- how bad the range needs a rest will influence length of deferment and frequency. Range in poor condition, or where plants are in a seriously weakened condition, often requires two or more full growing seasons' deferment to obtain significant growth. High, fair, and good condition range in reasonably good vigor can respond with one season deferment.
- I. Following brush control operations on poor condition range it is better to stock with "day cattle," since livestock adjustments are more easily made.
- J. The owner's or operator's desires, interest, and understanding of the objective to be accomplished through deferment quite possibly will influence not only length but also frequency of deferment.

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- K. Deferment produces ground cover needed to control soil erosion. The quicker the cover, the faster the control of erosion.
- L. Any time seeding is applied in conjunction with brush control, deferment is needed for plant establishment purposes.