

RANGE CONSERVATION - TECHNICAL NOTES

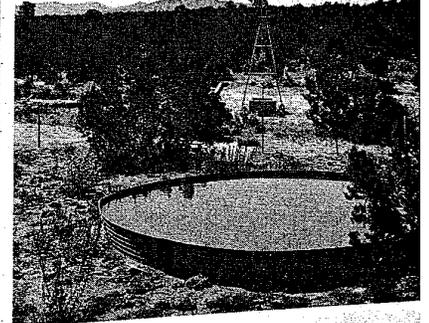
CHEMICAL PLANT CONTROL



PROPER RANGE USE PAYS



GOOD LIVESTOCK WATERING



CHOLLA CONTROL



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

RANGE TECHNICAL NOTE NO. 56 (Revised)

October 25, 1972

Re: Plant Communities: Consideration of Blue Grama in Some New Mexico Areas (submitted by Roy Mann and Ben Creighton)

The following information is intended to bring to the attention of those working in range management in New Mexico some observations and suggestions regarding the management of native blue grama (*Bouteloua gracilis*) in certain areas of the state.

Blue grama has presented some interesting management and planning problems. In many cases, this species is found to be a very low producer (85-200 lbs/Ac) on sites known to have a much higher productive capacity than this plant demonstrates. Height of plants after deferment has been observed to be less than one inch tall in a normal precipitation year.

AC's - 1 ea.

DC's - 1 ea.

Area Range Conservationist - 1 ea.

Adjoining States - 1 ea.

RTSC, Portland - 2

D. M. Whitt, Director, Plant Science Div., Washington, D.C. - 2

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Ground cover percentages are often abnormally high. Such conditions have given rise to the descriptive term "sod bound." Such a term may be misleading, since it implies a strictly environmental condition imposed on a species, resulting in the described phenotype. It has led some to believe that by changing the environmental factors that would produce a sod bound condition we could change the growth characteristic of the plant. This has not proved successful to date. In many instances, the blue grama community has appeared to be suppressed due to the intraspecific competition. However, upon close examination it was found that isolated plants exhibited the same growth habits as did those found within a 70% + ground cover regime. Conversely, it was observed that occasional "rogue" plants, much more vigorous and larger, were found to be growing within the high density areas. These observations have lead some to consider the possibilities that we are confronted with a genotypic problem, rather than a phenotypic problem. It is thought that the plant may be a "grazing ecotype," a variety of *Bouteloua gracilis* that through natural selection has perfectly adapted to overgrazing pressures.

The dense low growing form of blue grama has often failed to respond to management, including total extended deferment. Ranges have continued to decline in condition when Proper Grazing Use was planned and applied. Usually this type of plant cannot be grazed by livestock to a proper use level because of physical limitations. This is particularly true when the 40-50% use rate is applied. Often livestock are only capable of removing 20-30% of the current year's growth. Such limitations will certainly affect any estimates made on "recommended initial stocking rates." The result of applying normal concepts regarding Proper Grazing Use has been an ineffective treatment in improving range condition.

Apparently the described plant was always a part of the ecosystem, but was incapable of competing with other members of the plant community until continued grazing pressures decreased the ability of the taller, more susceptible species and varieties to compete. As those plants that grew tall enough to be damaged by overgrazing were killed out, the smaller variety, which could not be overgrazed, was given the opportunity to fill the voids and flourished under such conditions.

Such conditions have resulted in a very stable vegetative type. It is stable from the aspect that neither continued overuse nor deferment will likely change the range characteristic significantly. In spite of the stability of this range condition, an increase in brush species such as Big Sagebrush will cause the undesirable blue grama to deteriorate and die, thus leaving significant amounts of bare soil under the brush overstory.

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In evaluating the above remarks, relate the present information found in the Work Unit Technical Guides to the thoughts expressed. Re-evaluate the present view of native blue grama regarding the role it plays in meeting the real objectives of the local range resources program.

Things to consider may include:

Using blue grama (unnamed varieties) in seeding recommendations.

The niche shown for blue grama in Range Site Descriptions.

The rating for blue grama in range site descriptions and the allowable percent by weight used in determining range conditions.

Proper Grazing Use recommendations.

Initial stocking rate determinations.

Grazing systems recommendations.