



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

Doc. 1974

Memorandum

TO : Dale Brubaker, A.M. Lander, Wyoming
FROM : August L. Hormay
SUBJECT : Format. Rest-rotation land management plans

I am working up a format for rest-rotation management plans for use in the demonstration area program. It will be shaped into final form later after the participants in the program have opportunity to consider and use it and to offer suggestions for improving it.

I want to illustrate the present version with information from Hall Creek area. I need the information listed below. This information is being used for illustration purposes so it need not necessarily be precise or accurate. Estimates, approximations and even guesses will suffice.

I need the information as soon as I can get it, no later than January 31, 1975. So do not take time to seek information from outside sources. Round up the information that is readily available in your and the district office.

Put the information, including statistics, on letter size maps. Draft a base map of the Hall Creek area for this purpose rather carefully showing the area boundary, township and section lines and the principal drainage channels. Title it Hall Creek Management Area. Please send me six extra copies of this clear base.

Enter all information on a subject on this base, freehand. Prepare a brief statement explaining the subject matter, if necessary. If there is no information available on a subject at the present time, or if the subject is not pertinent, please indicate.

INFORMATION:

State

Letter size map of state showing boundary of state, main highways and towns and locations of the Hall Creek Management Area.

2.

Hall Creek Area

1. Land ownerships (in color)
2. Geologic formations
3. Topography - U.S. G. S. contour
4. Topography - Shaded relief (if available)
5. Topography - Principal drainages (this is the base map.)
6. Vegetation types (in color)

Wet meadow

Riparian woodland-shrub

Grassland 80% grass

Sagebrush 80% sagebrush

Grassland-sagebrush More than 21% grass or sagebrush

Brush or chaparral

Aspen

Upland woodland-shrub

Conifer - juniper

Conifer - pine-juniper

Other

Show narrow areas of wet meadow and woodland-shrub type along drainage courses with a line and areas up to a size that can be mapped by an enlarged dot.

7. Plants poisonous to livestock
8. Plants poisonous to wildlife
9. Plants poisonous to/or hazardous (poison ivy) to humans
10. Plants edible by humans

Information in 7 to 10 above may not be readily displayed on maps. If not, omit maps and prepare tables.

11. Rare and endangered plant species Map or table
 By species
 Population
12. Elk habitat areas
 Summer and winter
 Concentration areas both seasons
 Migration or movement routes onto, on, and off of the
 Hall Creek Area.
 Numbers of animals, summer and winter
13. Deer habitat areas
 As for elk
14. Antelope habitat areas
 As for elk
15. Sagehorn habitat areas
 Population
16. Chukar habitat areas
 Population
17. Waterfowl habitat areas
 By species
 Population
18. Fish habitat areas
 By species
 Population
19. Rare and endangered animals species
 (Birds, mammals, reptiles, fish, etc.)
 Species (Prairie falcon, golden eagle, etc.)
 Population
20. Merchantable timber types

21. Mining
 - Claims
 - Types of minerals
 - Active or not
22. Areas damaged by mining activities
23. Existing water resources
 - Live streams
 - Impoundments
 - Live springs
 - Wells
24. Proposed water developments
 - Springs
 - Wells
 - Impoundments
25. Underground water supplies
 - Water basins (Area, dept, potential water yield.)
 - Streams
 - Seams
26. Existing improvements
 - Roads, trails, transmission lines, fences, cattle guards, buildings
27. Proposed improvements
 - Kinds as in 24
28. Refuse dumps
29. Esthetic areas
30. Wild areas

31. Campgrounds and other recreation sites
 - Existing
 - Proposed
32. Historic values
 - Sites, areas, trails, buildings, other structures
33. Archaeological sites
 - Kind
 - Dates
34. Culturally treated areas
 - Reseeded
 - Sprayed
 - Chained
 - Etc.
35. Burned areas
 - Date
 - Cause - man, lightning, etc., or unknown
36. Insect infestations
 - By insect and host
37. Plant diseases
 - By disease and host
38. Rodent infestations
 - By species
39. Areas damaged by industrial or agricultural air or ground pollutants
40. Off road vehicle trails and damaged areas

41. Rock bounding areas

Kinds of rocks

42. Unusual, interesting natural sites and recreation areas

Please send any other information you feel is pertinent and significant.

cc: DM, Rawlins, Wyoming

ALHORMAY:ng

STATE OF MONTANA



DEPARTMENT OF

FISH AND GAME

Helena, Montana 59601
December 12, 1974

Mr. Samuel H. Lamb
1843 Otowi Drive
Santa Fe, New Mexico 87501

*Reference to RR
by Joe Egan*

Dear Mr. Lamb:

The long overdue has arrived along with my apologies.
You may, without any fear of hurting my feelings, throw it in
file 13, revise it, return it, ignore it, or even pretend you
ain't ever heard of me.

Best regards.

Sincerely,

By: Joseph L. Egan
Assistant Administrator
Game Management Division

JLE:um

cc: A. L. Hornay
Pacific S.W. Forest-Range and Experiment Station
P. O. Box 245
Berkeley, California 94701

ACKNOWLEDGMENTS

The author solicited the ideas and opinions of various personnel in the Game Management Division of the Montana Department of Fish and Game, and is deeply indebted to those people. However, the views expressed by the author are strictly those of the author and are not intended to represent the views of those people or the Montana Department of Fish and Game.

BIG GAME MANAGEMENT ON THE PRAIRIES

Reference

By

Joe Egan

Page 7
RR Grazing

A consideration of big game management on the prairie requires that several terms be defined. Concerning big game, we mean wild, free-roaming big game animals. We do not mean animals under some type of control (i.e., fenced and/or "zoo-like"). Big game is further defined to include elk, deer, pronghorn antelope, moose, and perhaps javelina, lion and bear. It should be understood that certain other wild, free-roaming animals may also have to be considered in connection with management of these species (i.e., antelope and sage grouse). Criteria to define land/vegetation areas are presented by Weaver and Clements (1938). Their description of a Grassland Climax - The Prairie, is completely adequate for the type habitat considered here.

It should also be understood that concern with only one habitat type may not be completely adequate to consider big game management on the prairies. Several land/vegetation types are usually adjacent to one another and generally big game not only freely move from one area to another but in many cases require one or more such areas in the course of a 12-month period.

Under most circumstances "management" of big game intends to, 1) perpetuate or even enhance the species, 2) prevent them from deteriorating any part of their habitat, 3) keep conflicts between them and other uses made of the area to a minimum, 4) provide non-consumptive outdoor recreation, and 5) provide consumptive recreation which includes removal of a certain segment of the population (i.e., the annual harvestable crop) or manipulating

the population to that level where a certain conflict is resolved.

Sport hunting is the usual method to accomplish removal of big game from a given area although trapping has been employed. An inherent problem with trapping is the disposition of animals. It is difficult to find suitable unoccupied habitat for most big game. Disposition by legal means to others, of course, could solve that problem. Herding big game to other areas is usually unsuccessful, or temporary, but might be a possibility under the right circumstances.

Recognition that big game animals (or any wildlife for that matter) are products of and dependent on the habitats in which they live is of paramount importance in their management. A knowledge of the year-long food habits of the big game species to be considered is an absolute necessity for any kind of management program to be successful. Virtually every big game animal on the North American continent has been the subject of study concerning its food habits. These studies are readily available to everyone through a variety of library or other educational services. They will not be discussed in this presentation.

Consideration must also be given to movement patterns of big game. This has its greatest importance when we consider that a particular big game population might spend, for example, three-fourths of its time in prairie habitat and the remainder of its time in one or more other vegetation types. It is apparent that even if our big game/prairie management program was carried out properly, but things were awry in the other necessary vegetation types, our management objectives might not be successfully attained.

Wild, free-roaming animals need cover of a variety of types for a variety of purposes in addition to a food supply of adequate quality and quantity. Escape cover (to avoid enemies) may be vegetation of a little

different type located in a somewhat different situation than the vegetation used for fawning or calving. Areas used to avoid harsh winter storms may be different than either of the foregoing. The meaning of the relationship between big game and the habitat (comprised primarily of vegetation) should by now be quite clear. Big game are indeed products of and dependent on the vegetation in the area in which they live. Big game management on the prairies then, the same as anywhere else, is principally management of the vegetation. After all, big game is simply vegetation "baled up" in a deer hide, or an elk hide, or an antelope hide. The prerequisites for managing big game on the prairie is to understand the vegetation requirements of the big game we are concerned with and the kind of vegetation we have to deal with or can deal with on the prairie, and adjacent habitats. The latter inference relates to what is currently growing in "our" particular prairie as well as what can, or should naturally grow there.

An obvious but often overlooked step in big game/prairie management is deciding what it is we want to do. If the decision is to raise cattle and elk we are going to do things somewhat differently than if we decide to raise cattle and antelope or deer. And if we decide to raise just big game, then our operation might be different than either of the foregoing.

Criteria have been developed to classify land as to what it is best suited for (Nunns 1958). One system, for example, puts land into a classification of I through VIII. Class I land apparently is prime farmland (also suitable for wildlife). Classes V, VI and VII are generally considered unsuitable for cultivation but can be used for grazing or forestry. Class VIII land, considered unsuitable for cultivation, grazing and forestry, is considered

suitable for wildlife, recreation or watershed uses. The inference that Class VIII land although not suitable for agriculture, grazing or forestry, is suitable for producing wildlife indicates a lack of knowledge about wildlife requirements. Crawford (1950) found that rabbits, raccoons and squirrels living on soils of high fertility were generally heavier and larger than those living on soils of poor fertility. Fertile soils can also produce the largest crops of wildlife, if the necessary vegetation types are present. It is essential to recognize that a big game/prairie management program won't be very successful if we embark on the project with the attitude that big game can use the poor land while some other use (i.e., livestock) is to be made of the good land. In other words, if we "give" big game what is left over, we will have a second or third rate big game management program.

"Management" (maintenance) of a big game population (or any wild animal population for that matter) on the prairie or anywhere else depends on what kind of "place in the sun" the manager is willing to reserve for them. To assume that a healthy productive big game population can be maintained on what is left over after all other considerations are taken care of is ridiculous. However, this is precisely what a great many people believe!

There is really nothing very mysterious or complicated about big game management. It is simply a matter of having the quality and quantity of vegetation present in the distribution necessary for the animal(s).

Complications arise when attempts are made to manage (maintain or produce) big game in areas where their habitat has been altered, is marginal, consists entirely of "left-overs" or doesn't exist at all. In other words,

big game/prairie management is complicated in areas that no longer can support, or where people won't tolerate a big game population. Again, because big game are products of and dependent on their habitat, and because habitat is primarily vegetation, the management of big game on the prairies is really a proposition of managing vegetation. The importance of vegetation cannot be overemphasized. Vogel (1974) states:

"The only sense in which man can "improve" upon nature is that in which he judiciously regulates or orders the plant succession, vegetation or land usage of an area to attain or maintain some desirable effect. Animal management, for example, should generally take the form of vegetation management. This type of manipulation cannot exceed the natural limitations of a region; however, including its vegetation, climate, and soils."

Virtually all texts concerned with the general term "range management" seem oriented toward the production of livestock. Principles of "ecology," are often applied only to livestock production when discussed in "range management" texts or other publications. This has often led to the automatic conclusion that sound range management, based on ecological principles is "good for wildlife." This may not really be the case. What can and sometimes does happen is that livestock use as much of the vegetation in the "managed" area as the vegetation can support without being eliminated. Under this arrangement, little use can be made of the vegetation by the big game animals without detrimental effects on the vegetation. In other situations, when big game enter the area "managed" for livestock they are viewed as competitors...there are "too many" of them.

It is documented that competition for the same vegetation between two animal species is less severe "on range in good condition" than on "range in poor condition." When the total vegetation requirements of two competing animal species exceeds the production of that vegetation in a given locality,

deterioration of that vegetation can occur if the competition persists.

At times, there almost seems to prevail a philosophy that anything other than cows or grass occurring on the "range" is undesirable, out of place, or even detrimental and that "it" must be decreased or eliminated altogether. If we are, in fact, interested in a program whereby big game are an integral part of our big game/prairie management operation, the following points must be incorporated into our thinking:

- a. We cannot efficiently raise big game on lands unsuited for grazing, farming, logging (i.e., lands of low fertility).
- b. Big game should not be expected to winter on areas where the vegetation has already been used to the maximum.
- c. If we really don't want big game included in "our" operation, we should not fool ourselves by giving lip service to that part of the operation.

The intent here is simply to state that utilization of our vegetative resources on the prairies (and elsewhere) must be accomplished in such a way that the vegetation receives the primary consideration and that big game be considered as one of the legitimate users of this vegetation.

It seems altogether fitting and proper to consider wildlife as a "score board" as to the success of our activities concerning vegetation management. This is reasonable when we realize that wildlife is present in a given area because of the climate, soils and vegetation existing there and not in spite of them!

There are at least two references the reader is encouraged to read if he is to put a complete plan of vegetation management into perspective.

W. C. Lowdermilk's (1953) "Conquest of the Land Through Seven Thousand Years,"

and A. L. Hormay's (1970) "Principles of Rest-Rotation Grazing and Multiple-Use Land Management." The writer does not infer these two publications contain all the information needed to conduct an effective and successful big game/prairie management program, but they can provide an insight into the philosophy that influenced the criteria used.

Lowdermilk (op. cit.) stated:

"...that land after all is not an economic commodity. It is an integral part of the nation, even as its people are and requires protection by the individual owner and by the nation as well."

Vogl (op. cit.) emphasized this same philosophy:

"...some range managers are promoting overgrazing and the eliminating of native grasslands in the name of conservation; mineral resources are becoming a part of big business to be exploited or liquidated solely according to market trends; recreation managers are beginning to operate national forests and parks like drive-in movies or sport shows; wildlife managers are operating wildlife refuges as farmland cafeterias and shooting clubs;..."

The prime ingredients of a big game/prairie management program are embodied in the criteria outlined by Hormay (op. cit.). In referring to Hormay's work, the most important guidelines would appear to be:

"The better forage plants and all others can be maintained; however, by periodically resting the range from use. Only by this means can the main objectives of grazing management -- maximum production of vegetation and high level yield of livestock and other multiple-use values - be realized."

"The range manager must prepare the formula to fit his specific range. The results obtained are determined by the formula. So grazing management is as effective as the manager makes it."

"In rest-rotation grazing, the range may be grazed with any kind or combination of livestock that can be supported by the vegetation. Most efficient use of forage is made by grazing with more than one kind of animal."

Paramount in the concept of rest-rotation management is that the system meets and caters to the requirements of the plants. If the manager or operator is misled or misleads himself into believing that just because he has an arrangement of fenced pastures wherein he rotates his livestock without reference to the needs of the plants, and that such a system constitutes a rest-rotation grazing management program, and further that such a program is automatically "good for wildlife," he has "missed the boat" entirely.

I consider an efficient and practical big game/prairie management program to be synonymous with the rest-rotation grazing and multiple-use land management system described by Hormay (op. cit.). It is not possible nor necessary to present a "cook book" set of criteria for the implementation of a big game/prairie management program. The manager prepares a formula to fit his specific range and results obtained are determined by the formula. The management program is as effective as the manager makes it.

An essential consideration in the formula recognizes and utilizes livestock as the major factor to manipulate the vegetation, because they can be under absolute control at all times. Livestock for example might be used in a particular pasture (containing elk winter range) for seedling establishment only, with the bulk of forage removal being accomplished by the elk. Sheep (or even horses or goats) might serve as an interim species to manipulate vegetation to accomplish the objectives prescribed in the management system. If the raising of big game is really an integral part of the planned program, then the kind of vegetation that big game species needs in the quantity, quality and location must be present. Certain species of

sagebrush and forbs (weeds) are essential food items for antelope in most areas. Controlled grazing by domestic sheep could produce a stand of vegetation beneficial to both sheep and antelope. If, in order to provide adequate forage for the big game under consideration, it is necessary to reduce the livestock stocking rate or curtail the length of the livestock grazing period or a combination of both, then that is exactly what the manager must do.

Hormay (op. cit.) in referring to cultural treatments (spraying, artificial seeding and other vegetation treatments) indicated the program should be in effect for a few years to determine the exact need for the treatments and then treat only the acreage needing treatment. He further indicated the need for untreated areas for wildlife. In connection with cultural treatments some mention should be made about fire. Odum (1959) states:

"It is now evident that fire should be considered not a minor or abnormal factor, but a major factor which in many regions is, and has been for centuries, almost a part of the normal "climate." Properly used, fire can be an ecological tool of great value."

A big game/prairie management program can be successfully attained under a rest-rotation grazing system if the guidelines set forth are followed.

LITERATURE CITED

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

State Office
3022 Federal Building
Phoenix, Arizona 85025

December 17, 1974

Memorandum

To: Director, DSC (D-330)

From: State Director, Arizona

Subject: Rest-Rotation Multiple Use Land Management Demonstration Area Program

The shift in the range management program to place increased emphasis on the ministerial and near term actions directed by Instruction Memo No. 74-397 made us take a new look at our AMP program.

As a result, the Phoenix District has cancelled all new starts on AMPs, including the AMP scheduled in conjunction with Gus Hormay's program on rest-rotation multiple use land management demonstration. This will be re-scheduled for FY 1976.

This re-scheduling is also partly based on limited funds for Gus Hormay and Arizona. The above information was discussed with Gus Hormay and Floyd Kinsinger by Virgil Hart of the Division of Resources.

Acting

STATE OFFICE
2800 Cottage Way - Room E-2841
Sacramento, California 95825

DEC 19 1974

Memorandum

To: Director (330)

From: State Director, California

Subject: Rest-rotation Multiple-use Land Management Demonstration Area

Due to the travel restriction and a reduction in training and meetings it will be necessary to re-schedule Mr. Normay's demonstration area program for California until FY 1976.

A copy of this memo is being sent direct to Mr. Normay.

Copy to:
Mr. Normay, Berkeley

(Sgd) James B. Ruch
ACTING STATE DIRECTOR