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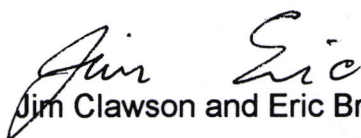
SANTA BARBARA • SANTA CRUZ

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DAVIS, CALIFORNIA 95616

October 25, 1996

TO: Livestock and Range Advisors

FR:  Jim Clawson and Eric Bradford

RE: Livestock Grazing Impacts Project

On September 20 a field day was held to discuss draft materials on grazing impacts on mountain meadows. This caused some concern among you and we apologize for not communicating more effectively with all of you before the event. The following is background on the project, its intent and current status. You will be more fully informed on the progress of this project and will be provided an opportunity to review any materials developed before they are put into a final form. For those of you desiring more information, please contact either one of us.

Background

In the fall of 1993, the Advisory Board of the Animal Agricultural Research Center (AARC) first recommended grazing impacts as a potential project. AARC convened a group of scientists from several western states in the spring of 1994 to discuss a potential project which resulted in a proposed plan with a very broad approach. Funds were not available for such an ambitious plan, so the following tasks were identified in the fall of 1994:

1. Summarize available scientific literature on various practices on rangeland health (biodiversity, forage productivity, water quality, wildlife habitat and fire hazard control).
2. Evaluate and consider the implications of this information in a forum at a specific location.
3. The work group formed to carry this out should have broad representation (USFS/BLM should be involved, but not the focus as the project is intended to relate to rangelands generally, not just public lands).

For one reason and another, activity moved slowly until the fall of 1995 when a small planning committee was formed and finally set the project in motion in early 1996. The Planning Committee consists of:

Eric Bradford and Jim Clawson, Co-Chairs

Barbara Allen-Diaz, UC Berkeley, Environmental Sciences and Pest Mgmt.

Barry Davis, U.S. Forest Service

Bill Frost, Extension Advisor

Mel George, Extension Range and Pasture Specialist (with Mel's sabbatic leave in the fall 1996, Ken Tate has been added to the group)

John Menke, A&RS Department

Peter Moyle, Wildlife and Conservation Biology Department

Dennis Pendleton, UC Public Policy Center

John Willoughby, Bureau of Land Management

This group decided to focus first on one ecosystem, to make the task more manageable. Mountain meadows were chosen as the initial ecosystem, to field test the draft materials before preparing a more detailed report.

A date was set for the field day (postponed once). The draft materials available by the needed date were acknowledged to be in incomplete form, but were used in that form to generate comments from those invited to attend. Invitations were used to keep the group at a reasonable size and to attempt to get a broad representation of interests. With mountain meadows as the chosen location, the extension advisors invited were from the Central Sierra area.

Intent

The intent of the project is to:

1. Prepare a summary/synthesis of relevant science-based information basic to grazing impacts on rangelands in general, and
2. Test the draft materials at a specific location (ecosystem) with a more detailed treatment of information utilizing a broadly representative group.

(A secondary objective is to evaluate the origins and suitability of currently used standards and guidelines for grazing practices as they apply to California rangelands.)

The target audiences are ranchers, environmentalists and agency staff.

Current Status and Future Steps

The results of the field day and comments generated are enclosed.

In responding to the concerns raised and the comments at the field day, the planning group will meet November 5 to develop a more complete outline of the topics needed and type of document suitable to describe the known science behind the impacts of grazing on the various components of the ecosystem. The

goal will be to provide what we know, and to recognize what we don't know in terms of the information required to make rangeland management decisions, but not develop a grazing or natural resource management document. We will let you know of the outcome of this meeting and at that time hopefully provide information on the strategy to complete this project.

We encourage you to be patient and wait for the draft materials to evolve into a more complete form before circulating. However, if you want to see the materials provided at the field day, please request them from the AARC office.

GEB:ng

Enclosure

cc I. Garnett
R. Peyton



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October 4, 1996

TO: Grazing Impacts Workgroup/Participants

FR: Eric Bradford and Jim Clawson

RE: Mountain Meadow Field Day Report and Future Plans

Thirty-five people attended the field day in Eldorado County on September 20. We thank Rich Platt and the Pacific Ranger Station staff and Farm-Advisor Bill Frost for their many contributions to making the day a success. While we wish that more of you could have attended, we had a good mix of perspectives and much constructive discussion, and express our appreciation to all who came.

As part of the field day, participants listed topics they would like to see incorporated in the proposed report. A list of these topics is enclosed.

Participants at the field day were asked to submit comments/suggestions/ write-ups on specific topics of interest to them, by October 20. Those who could not attend but have read the draft material are invited to do so also. As indicated in our September 10 letter, wherever possible the specific reference(s) on which suggestions are based should be included.

We feel that the input at the field day was an important step in identifying the range of issues of concern to persons interested in the mountain meadow system. This input, and that from written comments, should be most useful in developing a report that is relevant to current issues.

The Grazing Impacts Workgroup will meet the first week of November to complete the outline of the report and to identify the people who will participate in completing the draft. While it may not be feasible to address all of the topics raised at the field day and in the written comments, because of lack of science-based information or lack of available expertise in some areas, our goal is to

include the available scientific information on as many as possible of the issues related to sustainable function of mountain meadows.

A completed draft, with the references linked to statements in the text, will be circulated to those who have submitted comments or expressed interest in reviewing it, for further comment. A revised draft will then be subjected to peer scientific review, and after revision, made available to all interested parties.

GEB:ng

Enclosure

MEADOWS - 9/20/96
Issues listed by Field Day participants

- Hypotheses - not principles
- Spatial & seasonal restrictions affecting use of range by livestock
- Direct & indirect effects on native biota
- Soil microbiota
- T.E.S.
- Water quality aspects, including bacterial
- Downside of nutrient cycling (Anderson)
- Mychorhizal relationships
- Aspen/all woody association
- Interdependence of public & private land
- Woody plant invasion
- Define meadow condition
- Link of increased productivity to improvements in meadow condition
- Site history/initial condition – site potential
- Connection of upland & riparian management
- System function
- What is a healthy system?
- Economic impacts/resource values(John Loomis)
- Variability among meadows
- Identification of sensitive vs. non-sensitive characteristics
- Acceptable rates of recovery
- Adaptive management
- Stratification of hypotheses by level of confidence/certainty
- Differences in public/private management opportunities
- Need to address growth & reproductive requirements (plants, animals)
- Acknowledge areas not addressed or needing additional information
- Include questions of Sierra grazing group
- Allocation/use of secondary range



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October 25, 1996

TO: Grazing Impacts Workgroup

FR:   Eric Bradford and Jim Clawson

RE: November 5 Meeting, 11 am, 2154 Meyer Hall, Davis Campus

The principal agenda item for this meeting is completing the outline of the proposed summary of science-based information on grazing impacts, with emphasis on mountain meadows, and identifying persons to write the sections identified.

Based on input at the field day, we have identified the potential major headings listed below; other members should feel free to add to or delete from this list, or to regroup these.

Plant communities
Hydrology
Riparian systems, including fish and amphibians
Wildlife, with emphasis on deer and other large herbivores
Economics of grazing, wildlife, recreation; trade-offs

The draft material sent out prior to the field day deals primarily with the first of these topics, and there is clearly expertise within our group to cover this topic thoroughly, as well as hydrology and riparian systems. However, we may well need expertise from outside the group to cover the last two adequately, and we ask that you come to the meeting with suggestions of persons with the qualifications and interest to assist in this task.

We have drafted a possible introductory section for the paper, and enclose a copy of that for your review and comments.

For your information, a meeting was held at Davis on October 11, attended by Robert Peyton, DANR Coordinator of Natural Resources; Terry Salmon, Director, DANR Northern Region; Jim Hill, Chair, Agronomy and Range Science; Ed Price, Chair, Animal Science; Ian Garnett, Director of AARC; Ken Tate and the two of us, to consider Mel George's message of September 25. The recommendation from that meeting was that we continue to develop the proposed paper on grazing impacts, making every effort to ensure that it is focused on sound science. It was also suggested that a letter be sent to all Livestock and Resource Extension Advisors, and a copy of the letter sent is enclosed.

GEB:ng

Enclosures

GRAZING IMPACTS REPORT

Introduction

Maintaining functional and productive rangelands is important to an increasing number of people and interest groups in California. It is important to ranchers and rural communities for economic and cultural reasons. Because of the extent and physical diversity of rangelands of the state, healthy rangelands are key to maintaining wildlife, native plants and biodiversity generally. Much of the state's water supply passes through rangelands, and the management of this resource affects both quantity and quality of our water supply. Rangelands represent much of the existing open space, and therefore maintaining them as rangelands is key to maintaining the open space which is a high priority for many urban as well as rural citizens.

The many and diverse demands on rangelands have led to conflicts over the means of managing this resource. These conflicts have a variety of causes, including inadequate communication among interested parties, and assumptions about impacts of various practices which in some cases may not be correct; a significant factor is undoubtedly different goals and values of different groups. However, it seems probable that most groups interested in rangelands would agree that sustainable biological function, in terms of healthy plant and animal populations, the maintenance of reliable water supplies of high quality, and the

preservation of open space, are high priorities. The differences are most likely to relate to the priority for specific plant and animal species, and to the practices that will result in meeting agreed-upon goals.

The goals of this document are:

- 1) summarization of available scientific information on impacts of grazing on rangelands, not only on forage production but on wildlife populations, plant and animal biodiversity, and water yield and quality;
- 2) making this information available in usable form to individuals and groups interested in rangelands, and;
- 3) identifying areas where needed scientific information is lacking and encouraging work to obtain it.

Utilizing the known science-based information should not only lead to better rangeland management practices, but should also help resolve some of the conflicts about rangeland use. The focus is on the impacts of grazing by livestock and other herbivores, and in identifying the circumstances under which grazing is compatible with the long-term maintenance of healthy and diverse populations of plants and animals, both land and aquatic species.

As the first step in this process, it was decided to focus on one ecosystem, the mountain meadow system, defined as meadow/riparian areas above 3500' elevation. Although not a major part of the total grazing resource of the state,

this ecosystem has several features which have made it the focus of attention of different interest groups.

From the livestock producer's perspective, mountain meadows produce green (i.e. high quality) forage when this is not produced elsewhere due to the hot, dry summer climate at lower elevations. Since livestock must have forage throughout the year, movement of animals to higher elevations during summer, especially in Mediterranean climates, is a practice which goes back to the earliest days of livestock domestication and human culture. There are well known examples of such transhumance systems which have been sustained for centuries in Europe, Asia and Africa. The practice came to the western U.S. with the earliest settlers, and because of its unique seasonal contribution to the annual forage supply, is of continuing importance to the economic viability of a significant number of ranching operations based at lower elevations.

Mountain meadows represent an area of great attraction to backpackers, hikers, hunters and fishermen because of their beauty, unique flora and fauna, comparative isolation and freedom from human influence. These groups and those with the goal of maintaining biodiversity wish to maintain such areas in as pristine a state as possible. Because livestock have visible impacts on meadows and particularly on riparian areas, and because overgrazing and resulting meadow degradation undoubtedly occurred in the 1800's and early 1900's, livestock grazing is widely perceived by these groups as an undesirable

practice. With the better regulation of grazing and reduced livestock densities which have occurred for several decades now, many meadows are in much better condition than formerly. However, recovery can be a slow process and is by no means complete in many cases, and there remain some visibly degraded areas. As a result, there is continuing pressure to further reduce or eliminate grazing.

As indicated earlier, it is hoped that the availability of a summary of science-based information on impacts of grazing can be used to develop better management strategies. We believe all parties are interested in sustainability of meadow systems, from the perspectives of plant and animal populations and water yield and quality. There are examples of meadows where improved grazing management practices have led to increased forage for livestock, improved fish and wildlife habitat, and improved streambank stability and water runoff patterns. Critical questions include:

- 1) Can simultaneous improvements in forage production, biodiversity and riparian function be achieved generally under continued grazing?
- 2) What are the grazing management practices that contribute to these goals?
Are they economically feasible and compatible with ranching operations?
- 3) What are the meadow characteristics that permit sustainability and improvement of the functioning of grazed meadows?