

APPENDIX O

RANGELAND MONITORING PLAN FOR THE PINEDALE

RESOURCE AREA

Introduction

The rangeland monitoring program is a multidisciplinary approach designed to measure progress towards the realization of the goals and objectives resulting from the land use planning process. This monitoring plan was prepared to provide for the implementation of the rangeland monitoring program in the Pinedale Resource Area. This plan will discuss when, where, and how studies will be implemented, as well as the types of data being collected, how the data will be evaluated, and who will participate in the process.

Allotment Categorization

The selective management process was developed to assist the Bureau in setting priorities for its management efforts. Through selective management, each allotment is placed in one of three categories (I, M, or C), depending on the applicable categorization criteria. Once categorized, the allotments are ranked in order of priority for a given level of management. Allotments for the resource area are listed by category in Appendix C-3. Monitoring studies would be installed on all "I" allotments and on "M" and "C" category allotments as needed. Monitoring intensity would be greater on "I" allotments than on "M" or "C" allotments.

Priorities for monitoring intensity will be assigned to I category allotments on the basis of resource conflicts and condition. Some I allotments should be monitored intensively; others may require less intensive monitoring and may be moved to the M category after implementing range improvement projects. The M and C allotments will be monitored at a lower intensity, with C allotments being monitored only if it will not reduce the amount of effort necessary for the I and M allotments.

Each allotment will be monitored for resource conditions, and effectiveness of management practices and facilities. This will include evaluation and analysis of monitoring data, and range inspection tours by BLM personnel and affected users to jointly evaluate on-the-ground conditions. Any necessary adjustments in stocking levels or other management practices including changes or additions to existing management facilities would be based on allotment monitoring and user consultation.

Objectives

For "I" Allotments (high intensity)

1. Identify grazing distribution problems and use patterns on each allotment prior to installation of trend studies.

2. Stratify each allotment to the level necessary to identify key management areas prior to installation of trend studies. Riparian areas and wet meadows will be considered in this process.
3. Identify areas of significant competition for forage and resolve these conflicts by adjusting stocking rates or seasons of use of competing species.
4. Identify key management species for each key area.
5. Determine range condition initially and trend starting five years from installation of trend studies on each allotment.
6. Provide management and monitoring intensity appropriate to improve range condition.
7. Determine current utilization levels in each allotment.
8. Determine actual use by livestock on each allotment.
9. Identify annual climatic patterns, which include precipitation. Soil temperature, soil moisture, and air temperature information will be obtained in selected key areas.

For "M" and "C" Allotments (low intensity; selected elements from the following list will be used)

1. Identify grazing distribution problems and use patterns, where necessary.
2. Identify areas of significant competition for forage and monitor only crucial habitats.
3. Stratify each allotment to a level necessary to identify key management areas. Riparian areas and wet meadows will be considered in this process.
4. Identify key management species for each key area.
5. Establish low intensity trend studies on only the most representative areas. Determine range site and range condition following development.
6. Provide appropriate management and monitoring intensity in order to maintain current range condition.
7. Determine current utilization levels in each allotment.
8. Determine actual use by livestock.
9. Identify general climatic patterns.

Monitoring Studies Methodology

Climate

Climatic data, along with actual use data, are used as a tool to help understand annual utilization and long-term trend patterns. There are 13 existing precipitation gauges (including a cooperative study with the University of Wyoming) on the Pinedale Resource Area. In addition, precipitation data from the National Climate Data Center and University of Wyoming Water Research Institute may be utilized.

Temperature data will also be used to assist in interpreting climatic effects on monitoring data. Temperature data will be obtained from National Climatic Data Center reports from sites at Big Piney, Cora, Merna, and Pinedale, Wyoming.

In addition to the prescription and temperature studies described above, soil moisture/temperature probes will be installed on selected key areas in "I" allotments where conflicts are sufficient to warrant this level of data.

Actual Use

Actual use is the grazing use made on an area by all classes of forage consumers. This information is necessary to provide a correlation between utilization and trend data. Considered alone, actual use data is essentially meaningless. When considered in conjunction with climate and utilization, adjustments in grazing capacity can be made.

Actual use data for livestock will be obtained from permittees/lessees by Certified Actual Use Reports at the end of specified grazing periods. In addition, unannounced field counts will be made each year on "I" allotments as time and money allow. Paint branding and ear tagging will also be used on "I" allotments where the potential for unauthorized use is greatest.

Utilization

Utilization is defined as the percent of the current year's growth consumed by animals during a given grazing period. These data are used in conjunction with actual use, climate, and possibly trend data to make stocking adjustments. This is done by comparing measured utilization rates with proper or allowable rates for a particular key species. Utilization techniques will also be used to assist in use pattern mapping. Several methods for obtaining utilization data (available for review in the resource area office) will be employed, including:

- Key Forage Plant Method for use pattern mapping.
- Ocular Estimate by Plot Method for key areas.
- Height-Weight Curves for key areas on selected "I" allotments.
- Paired Plot Method for riparian areas.
- Cole Browse Transect for wildlife or wildlife/livestock areas.

These data will be collected following the removal of livestock from a pasture or at the end of a grazing period for livestock or wildlife. The intensity with which these techniques will be applied will be highest in the "I" allotments. The "M" and "C" allotments will be monitored only to a level sufficient to identify changes in current range condition.

Trend

Trend is defined as the change in range condition over time. Trend data will indicate the direction of change in the general health of the range resource. These data will be used in conjunction with other monitoring data to assist in making adjustments in grazing use.

The primary tool used to evaluate trend in M, I, or C allotments will be permanently marked photo points.

Trend studies on "I" allotments may be of high intensity. These studies will include the installation of permanent plot transects. Existing 3-foot by 3-foot trend plots will be replaced with this method where they fall into the key area being monitored. However, these existing plots will continue to be photographed on the same sequence that the trend plot transects are being read.

Trend studies on "M" and "C" allotments will be of low intensity. Trend plots will be installed only on selected key areas to monitor for specific resource issues. To assist in this effort, an ocular estimate of species composition by weight will be used to establish a baseline for range condition in areas lacking soil survey data. This method will also be used as a check for future changes in range condition on these sites.

Trend studies will normally be read on a three to five year sequence, depending on the level of data required for each key area.

Key Area and Key Species Selection

Key areas will be selected first on "I" allotments. Selection of key areas on "M" and "C" allotments may be integrated with the process for "I" allotments but no actions will occur on them at the expense of time that should be spent on higher priority allotments.

Some of the criteria to be considered in the selection of key areas include: range sites, vegetation types, use patterns, range improvements, kind and class of animal, wildlife crucial areas, and the physical feature of the allotment.

During the monitoring process, key species will be identified for each allotment. Selection of the key species will be tied directly to the management objectives for the allotment. Key species are generally an important component of a plant community and serve as an indicator of change. A key species may or may not be a forage plant. Problem species such as poisonous plants or species valuable for reducing erosion, which are not the most valuable forage species in the area, could be selected as key species. More than one key species may be selected for an allotment or key area within an allotment depending on management objectives and data needs.

Schedules and Personnel Requirements for Establishment and Reading of Studies

This monitoring plan was prepared with the assumption that funding will remain at, or near, existing levels for the foreseeable future. In this light, it is anticipated that the bulk of the monitoring load will have to be borne by the existing range staff.

The scheduling for implementation of this monitoring plan is dependent, in part, on the continued funding of the range site inventory. The range site inventory is completed on approximately half the resource area and the remainder of the area does not have a soils inventory nor a range site inventory. The initial thrust of the monitoring program will be towards completion of the high "I" allotments. Low priority "I" as well as the "M" and "C" allotments will be addressed as completely as funding levels allow.

Coordination and Consultation

The rangeland monitoring program for the resource area is a multiple use effort whereby all affected interests will be given an opportunity to participate. Prior to implementation of this plan, any affected groups or individuals will be notified by mail of our intent and be furnished with a schedule covering the first group of allotments. Follow-up consultations will be made to those groups or individuals who expressed an interest in a given allotment to advise them of the time and place to meet for an initial field examination. This process will carry through all aspects of the monitoring program for each allotment.

Evaluation/Adjustment

Allotments will be evaluated on a predetermined schedule such as the end of a grazing cycle on allotments with AMPs or following one reading of all the trend studies on an allotment without AMPs. This process will be coordinated with all affected interests.

The results of these allotment evaluations will be used as a basis for making short or long term adjustments in grazing use. Short-term operational adjustments may be made immediately if the problem can be resolved through livestock management (e.g., herding, salting). Adjustments in stocking rates, seasons of use, or changes in kind of livestock will normally require two years of utilization, actual use, and climatic data. Trend data may also be used, if available, to make adjustments in stocking rates, seasons of use, etc.

If the monitoring data indicate that certain allotment objectives are not being met, the appropriate adjustments in the grazing operation will be made. These adjustments may range from the manipulation of livestock to changing stocking numbers or seasons of use. The level of adjustment will be determined by the degree of divergence from the objective.

Allotment Monitoring Plans

Allotment monitoring plans will be prepared for all "High Priority I" allotments prior to initiation of the monitoring program. On allotments with AMPs, this will be included as a portion of the AMP. On allotments without AMPs, this plan will be included in the allotment file. The allotment monitoring plan will include, as a minimum, the following sections: public involvement and interdisciplinary approach; allotment issues; allotment objectives; intensity and type of studies; and the schedule for conducting, analyzing, and evaluating monitoring data.

Public Involvement and Interdisciplinary Approach

This section will document Bureau efforts to solicit public involvement.

Allotment Issues

This section will identify specific issues to be resolved by the management program prescribed for the allotment. The monitoring plan will provide the vehicle for measuring progress towards resolution of the issues. A discussion of the selective management category and accompanying justification will also be included.

Allotment Objectives

This section will contain a clear, concise list of allotment objectives to be monitored by the studies program.

Intensity and Type of Studies

This section will discuss the nature of the studies required to measure progress towards the allotment objectives identified above. A discussion of any special physical or management features for the allotment will also be included.

Schedule for Conducting, Analyzing, and Evaluating Monitoring Data

This section will show the schedule for collecting data for each monitoring technique. It will also provide a schedule for periodic analysis of data to determine if objectives are being met.

A modified version of this format may be used to document the monitoring effort on "lower priority I," "M," and "C" allotments. This plan will be retained in the studies section of the allotment file.

Allotment Categorization

Selective Management Criteria by Category

Individual allotments were categorized based on interviews with permittees, field evaluation by BLM personnel, and identified resource use conflicts. The following criteria were considered during the allotment categorization.

These criteria were used as general guidelines, and as such, may not be totally representative of an entire individual allotment. The categorization is a dynamic process and if conflicts are identified in M category allotments, they may receive management attention through other resource activity planning (such as wildlife habitat management), or if needed, the category may be changed to I. Funding may be provided for M or C allotment improvements as priorities allow.

Maintenance Category (M)

Present range condition is satisfactory.

Allotments have moderate or high resource production potential and are producing near their potential (or trend is moving in that direction).

Present management is considered satisfactory.

Riparian areas are under satisfactory management and are not in a declining trend.

No serious conflicts exist with regard to current uses of resource.

Potential may exist for positive economic returns on public investments.

Improve Category (I)

Present range condition is unsatisfactory or in a declining trend.

Allotments have moderate to high resource production potential but are producing at low to moderate levels.

Present management is considered unsatisfactory.

Riparian areas are presently in a declining trend and management is unsatisfactory.

Serious resource use conflicts may exist and controversy is at a high level.

Potential for high return on public investment exists.

Custodial Category (C)

Present range condition is variable.

Allotments have relatively low resource production potential and are presently producing at or near their potential.

Present management appears satisfactory or is the only logical practice under existing resource conditions.

Riparian areas are either not present, or are not in a declining condition.

Limited resource conflicts and(or) controversy presently exist.

Potential for returns on public investment is low.

Selective Management Criteria by Situation

Range Condition

A professional judgment criteria used when there is a lack of ecological range site data. A subjective rating of what the area is now producing as compared to its potential.

Resource Potential

A professional judgment criteria used to determine the allotment's potential (capability) to improve. This criteria is based on the potential that exists for increased forage production, either naturally or artificially.

High Potential – I

Moderate Potential – M

Low Potential - C or M

Present Management Situation

A rating of allotments based on present range management practices.

Allotment is receiving satisfactory management - M or C

Allotment is receiving unsatisfactory management - I

Riparian Areas

A judgment of whether or not riparian vegetation is declining, static, or in an upward trend.

Declining trend - I

Static or upward trend - M or C

Resource Use Conflicts and (or) Controversy

Critical wildlife habitat areas, Wilderness Study Areas, ACECs, mining or oil and gas, and other conflicts that may exist.

Low level of conflict/controversy - M or C

High level of conflict/controversy - I

Economic Investment Potential

The potential for a positive economic return on investments.

High - I

May exist - M

Low - C

Ranking of Allotments in the Improve Category

The allotments in the improve category were ranked in priority order based upon professional judgment and problems and(or) conflicts.