



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

MANUAL TRANSMITTAL SHEET

Release  
4-97

Date  
11/28/89

Subject 4400 - RANGELAND INVENTORY, MONITORING, AND EVALUATION

1. Explanation of Material Transmitted: This release completely revises BLM Manual 4400.
2. Reports Required: None.
3. Material Superseded: Manual pages superseded by this release are listed under "REMOVE" below. No other directives are superseded.
4. Filing Instructions: File as directed below.

REMOVE:

All of 4400 (Rels. 4-82,  
4-64)

(Total: 22 sheets)

INSERT:

4400

(Total: 10 sheets)

Michael J. Penfold  
Assistant Director, Land and Renewable  
Resources

## 4400 - RANGELAND INVENTORY, MONITORING, AND EVALUATION

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H-4400-1 - Rangeland Monitoring and Evaluation

## 4400 - RANGELAND INVENTORY, MONITORING, AND EVALUATION

.01 Purpose. This Manual establishes policies, objectives, and internal operating procedures for applying and reporting rangeland inventory, monitoring, and evaluation relating to the effects of rangeland management actions on soils, vegetation, and water resources.

.02 Objective. The objective is to provide, on a timely basis, necessary information for establishing resource management objectives, developing plans, making objective evaluations and sound management decisions, and preparing reports on inventory, monitoring, range condition, and trend.

.03 Authority. Inventory, monitoring, and evaluation are authorized under various laws, including: the Taylor Grazing Act, the Federal Land Policy and Management Act, the Public Rangelands Improvement Act, and implementing regulations of the National Environmental Policy Act.

.04 Responsibility. (See Manual Section 1203.)

A. The Director and Deputy Director, acting under broad Departmental guidance, are responsible for providing national level policy and procedural guidance for rangeland inventory, monitoring, and evaluation and for assuring that an adequate level of inventory and monitoring is carried out throughout the Bureau of Land Management (BLM).

B. The Assistant Director, Land and Renewable Resources, is responsible for developing rangeland inventory, monitoring, and evaluation procedures; identifying BLM staffing and training necessary to accomplish rangeland inventory and monitoring, ensuring coordination between these procedures and other BLM procedures; and evaluating the effectiveness of rangeland inventory, monitoring, and evaluation. This responsibility is exercised through the Chief, Division of Rangeland Resources.

C. Other Assistant Directors are responsible, within their delegated areas, for developing and maintaining policy and procedures for resource program and resource management support program activities, including any unique program requirements in rangeland inventory, monitoring, and evaluation.

D. The Service Center Director is responsible for developing the necessary technical procedures and providing technical assistance to Field Offices to implement rangeland inventory, monitoring, and evaluation.

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E. State Directors are responsible for implementing the BLM rangeland inventory, monitoring, and evaluation activities within their States. This includes the responsibility for:

1. Issuing supplemental policy, procedures, and guidance as needed.
2. Developing minimum monitoring standards for their States. (See Section .22.)
3. Ensuring that rangeland inventory, monitoring, and evaluation meet standards for quality.
4. Coordinating interagency rangeland inventory and monitoring activities both internally and externally and assisting in the resolution of inconsistencies between BLM activities and other public agency policies or programs related to rangeland inventory and monitoring.
5. Preparing and providing to the Director (220) an annual report of inventory, monitoring, and range condition and trend. (See H-4400-1, V.)

F. District Managers are responsible for providing general supervisory direction and guidance in implementing rangeland inventory, monitoring, and evaluation; for providing District level compliance with quality standards; and for consulting, cooperating, and coordinating in these activities.

G. Resource Area Managers are responsible for preparing and maintaining areawide Monitoring and Evaluation Plans (see H-4400-1, IA and Manual Section 1734.25); consulting, cooperating, and coordinating at the Resource Area level; and conducting rangeland inventory, monitoring, and evaluation to measure progress towards meeting land use plan and allotment resource management objectives.

.05 References.

- A. 43 CFR Part 4100.
- B. BLM Manual Sections 1622.3, 1734, 4100, 4110, and H-4110-1, H-4130-1, 4160 and Handbooks H-4160-1, 4410-1, and 4400-1.
- C. Interim Users Guide for the Inventory Data System (IDS).
- D. A Glossary of Terms Used in Range Management, Society for Range Management. (Second Edition)
- E. Guidelines and Terminology for Range Inventories and Monitoring, Range Inventory Standardization Committee.

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.06 Policy.

A. Function. Inventory, monitoring, evaluation, and the resulting management actions are essential functions for meeting long-term responsibilities for the management of public rangelands including: (1) establishing and evaluating progress in meeting land use plan and allotment resource management objectives; (2) developing allotment management plans, coordinated activity plans, or other activity plans; (3) preparing environmental analyses; and (4) supporting decisions regarding the use of natural resources in an allotment.

B. Intensity and Frequency. Inventory, monitoring, and evaluation shall be implemented at an intensity and frequency commensurate with the significance of resource values, issues and conflicts, and the level of planned management. The principal basis for determining the need for monitoring rangeland use and practices is the Resource Management Plan (RMP). The RMP/Rangeland Program Summary (RPS) and State minimum monitoring standards contain standards and intervals for monitoring which are based on the significance and sensitivity of the resources involved. The standards and intervals may be conditioned by State Director guidance for monitoring. Monitoring needs may be further detailed and refined through applicable activity plans.

C. Consultation, Coordination, and Cooperation. Inventory, monitoring, and evaluation shall be conducted in close consultation, coordination, and cooperation with range users and other affected and interested parties. (Their active participation shall be encouraged when collecting, analyzing, interpreting, and evaluating inventory and monitoring information.)

D. Coordinating With Other Programs. Rangeland inventory, monitoring, and evaluation shall be coordinated with other resource programs to avoid duplication and conflicting actions/decisions, and to assure that authorized officers give adequate consideration to all resource values. (See Manual Section 1734.)

.07 File and Records Maintenance. Establish and maintain files in accordance with Manual Sections 1272 and 1274. See Bureau Records Schedule for disposition of files and records.

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.1 Inventory.

.11 Purpose. Rangeland inventories are processes for gathering data needed to describe, categorize, and/or quantify resources for the purposes of: developing allotment resource management objectives, developing management plans, making sound management decisions, categorizing allotments, establishing management and investment priorities, establishing a base from which to monitor, and reporting range condition and trend.

.12 Procedures. The level of inventory shall be determined based upon the significance and sensitivity of the resources involved and in accordance with standards as outlined in Manual Section 1734.12. The minimum standard for conducting rangeland inventories shall be an ecological site inventory as outlined in H-4410-1 (National Range Handbook) based on a National Cooperative Soil Survey at the order 3 detail. The documentation of plant species composition by weight, total production per acre, ecological site, and ecological status constitutes the minimum standard for a vegetation data base. Authorized officers shall consider the option of documenting additional vegetation data such as cover, density, frequency, ground cover, or other site data to meet a specific need or to resolve multiple use issues. The Inventory Data System (IDS) shall be used to store, retrieve, and analyze ecological site data. Procedures for using the IDS are outlined in the Interim User Guide for the Inventory Data System.

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.2 Monitoring.

.21 Purpose. Rangeland monitoring is the periodic observation and systematic collection of resource data to determine the effects of management actions toward achieving resource management plan objectives on an allotment. It provides quantifiable data needed to periodically review and evaluate these objectives and to support management actions.

A. Data Use. These data are needed to:

1. Determine the effects of management actions on the rangeland resources.
2. Determine the effectiveness of management actions in achieving allotment resource management objectives within planned timeframes.
3. Identify and support necessary management actions.
4. Periodically review the validity of allotment resource management objectives.

.22 Procedures. State Directors are responsible for establishing minimum monitoring standards for conducting rangeland monitoring for their States. Minimum monitoring standards shall be consistent with national policy requirements; shall identify study types, sampling frequency, and intensity; and shall establish monitoring priorities. Procedures described in H-4400-1 are used to conduct rangeland monitoring.

A. Required Level of Monitoring. The standards and intervals for monitoring the rangelands provision of the RMP (see Manual Section 1616.9), RPS, and State minimum monitoring standards will usually provide the principal framework for establishing the required level of monitoring. Monitoring shall be conducted at a sufficient level to enable the Field Office manager to determine the effectiveness of management toward meeting resource management objectives and to enter into agreements or issue decisions for allotments requiring management changes. The initial decision and/or agreement must be completed within 5 years of the issuance of the Record of Decision. The timetable for implementing monitoring and evaluation, entering into agreements, and issuing decisions is outlined in H-4400-1 IB.

B. Prioritizing Monitoring. Allotment categorization ("M", "I", "C") provides a basis for prioritizing rangeland monitoring. (See H-4400-1, IC.)

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.3 Evaluation.

.31 Purpose. The analysis and interpretation of inventory and monitoring data are necessary for evaluation of management actions to determine progress toward meeting resource management objectives. Evaluation determines if, and to what extent, adjustments in management actions, including grazing prescriptions, stocking levels, and range improvement practices, are necessary.

.32 Procedures. Authorized officers shall determine, on a case-by-case basis, the best approach and format to analyze, interpret, and evaluate rangeland monitoring data consistent with general procedures and conditions outlined in H-4400-1. Also, training necessary to provide consistency shall be provided by the authorized officer.



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.4 Management Action.

.41 Monitoring Implementation. When an evaluation of monitoring or inventory and monitoring data indicates a need for changes in management, the Field Office manager shall implement changes by entering into agreements or issuing decisions.

A. Agreements. To the extent possible, necessary changes in management, shall be implemented by agreement. Content of agreements and items to be considered are specified in H-4110-1.33 and H-4160-1.1E.

B. Decisions. If agreements cannot be negotiated, decisions shall be issued according to H-4130-1.1.

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Glossary of Terms

-A-

activity plan: a more detailed and specific plan for management of a single resource program or plan element undertaken as necessary to implement the more general resource management plan (RMP) decisions. An activity plan is prepared for specific areas to reach specific resource management objectives within stated timeframes. Detailed management actions, including such things as projects, treatments, and other on-the-ground activities, and schedules are described in the document. Activity planning is the third tier in the Bureau planning system. Examples include Allotment Management Plan, Coal Activity Plan, Recreation Area Management Plan, Transportation Plan, and Habitat Management Plans.

agreement: written document of mutual agreement that outlines arrangements for determining the need for livestock adjustments and establishes procedures for arriving at the adjustments. Agreements document the amount and timing of adjustments including the initial adjustment in preference as well as scheduled reductions for the third and fifth years of a 5-year implementation period. An agreement may incorporate the terms of an allotment management plan or coordinated activity plan by reference, but is a separate document.

allotment: an area of land designated and managed for grazing of livestock. Such an area may include intermingled private, State, or Federal lands used for grazing in conjunction with the public lands.

allotment management plan (AMP): a document which prescribes the manner in and extent to which livestock grazing is conducted and managed in an allotment to meet multiple use, sustained yield, economic, and other needs and objectives as determined through land use plans.

-C-

categorization: the process of designating allotments into one of three categories according to rangeland resource characteristics, potential, opportunities, and needs. The three categories are Maintain, Improve and Custodial, for which the respective objectives are to:

- a. Maintain the current resource condition.
- b. Improve the current resource condition.
- c. Custodially manage the existing resource values.

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-C-

class of livestock: age and/or sex group of a kind of animal. Example: mature cows, yearling ewes, 2-year old steers.

consultation: seeking the advice and views of other Federal, State, and local officials, and others, including persons using the public lands. The act of consultation is intended to facilitate coordination and cooperation and result in acceptable inventory, monitoring, and evaluation activities.

coordinated activity plan (CAP): a more detailed and specific plan for the management of two or more resource programs or plan elements undertaken as necessary to implement resource management plan (RMP) decisions, terms, and conditions.

A CAP is prepared for specific geographic areas of public land to reach multiple resource program objectives within stated timeframes. Detailed management actions and schedules, and other on-the-ground activities (i.e., "dirt work") are described in the document. A CAP may be prepared solely to aid BLM implementation of RMP decisions. A CAP may also be prepared cooperatively to meet the management needs of BLM and the related needs of other parties including cooperators, permittees, other authorized public land users and effected interests, (e.g., other Federal surface management agencies, State, and local governments, etc.).

Technical planning and environmental standards and related requirements (e.g., coordination, plan design, formats, cost estimates, etc.) are set forth in BLM Manual Section 1619. A CAP is prepared only when the BLM Manager determines that it best meets with site specific needs or conditions.

coordination: to work together harmoniously, including all actions intended to cause rangeland inventory, monitoring, and evaluation activities to be in harmony and accord with relevant activities of other Federal, State, and local agencies, and public land users.

cooperation: the act of working together in an attitude of helpfulness with other Federal, State, and local agencies and persons who use the public lands to successfully implement inventory, monitoring, and evaluation.

cover: (1) the combined aerial parts of plants and mulch, and (2) shelter and protection for animals and birds.

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-D-

decision: a written document, signed by a Bureau official under delegated authority, which disposes of a stated issue or issues in a case situation. Grazing decisions to implement required changes determined through monitoring and evaluation contain the following items:

- recognized grazing preference.
- allocation of forage to livestock.
- specific management objectives for the allotment.
- resource values to be monitored and evaluated to determine progress in meeting these objectives.
- changes in values that would warrant modifying the scheduled adjustments.
- other information necessary to set forth actions necessary to achieve the required resource objectives for the allotment.

density: numbers of individuals or stems per unit area. (Density does not equate to any kind of cover measurement.)

distribution: dispersion of livestock grazing within a management unit or area. Synonymous grazing distribution, livestock distribution.

duration of use: the length of the grazing period.

-E-

ecological site: a kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management. Ecological site is synonymous with range site.

ecological status: the present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the potential natural community. The four ecological status classes correspond to 0-25, 26-50, 51-75, or 76-100 percent similarity to the potential natural community and are generally called early seral, mid seral, late seral, and potential natural community, respectively.

evaluation: (1) an examination and judgment concerning the worth, quality, significance, amount, degree or condition of something; or (2) the systematic process for determining the effectiveness of on-the-ground management actions and assessing progress toward meeting management objectives.

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-F-

frequency: a quantitative expression of the presence or absence of individuals of a species in a population. It is defined as the percentage of occurrence of a species in a series of samples of uniform size.

-G-

grazing system: a specialization of grazing management which defines systematically recurring periods of grazing and deferment for two or more pastures or management units. Examples: rest-rotation grazing, deferred grazing, deferred-rotation grazing.

ground cover: the percentage of material, other than bare ground, covering the land surface. It may include live and standing dead vegetation, litter, gravel, cobble, stones, boulders, and bedrock. Ground cover plus bare ground would total 100 percent.

-I-

inventory data system: a Bureauwide system for storing and retrieving ecological site inventory data.

-M-

minimum monitoring standards: a document, developed by each State Director, through consultation, coordination, and cooperation with other Federal, State, and local agencies and other persons who use public lands, which identifies rangeland monitoring study types, sampling frequency and intensity, and priorities for monitoring.

monitoring: the orderly collection, analysis, and interpretation of resource data to evaluate progress in meeting management objectives.

monitoring and evaluation plan (MEP): a document, developed by the Field Office manager encompassing a grazing environmental impact study area, resource management plan area, or Resource Area, which outlines monitoring types and methods, frequency and intensity of sampling, study locations, and resource objectives to be monitored. In general, it describes how, when, and where monitoring and evaluation will be implemented and who will do it.

mulch: (1) a layer of dead material on the soil surface, and (2) an artificial layer of material such as straw, paper, or plastic on the soil surfaces.

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-N-

National Cooperative Soil Survey (NCSS): program consisting of a joint effort of cooperating Federal agencies, land-grant universities, and other State and local agencies to map soils, collect soils data, interpret the maps and data, and promote their use. Federal leadership is provided by the U.S. Department of Agriculture's Soil Conservation Service.

-O-

objectives: planned results to be achieved within a stated time period. Objectives are subordinate to goals, narrower in scope, shorter in range, and more likely to be attained. Time periods for completion and outputs or achievements that are measurable and quantifiable are specified.

-R-

range condition: the present state of vegetation of an ecological site in relation to the potential natural community for that site. It may also be stated in terms of specified values. (See also ecological status.)

rangeland program summary (RPS): a summary document issued, following the land use plan and appropriate environmental analysis, for communicating to the public: (1) the result of the livestock grazing portion of the land use plan, (2) the resource management objectives for the allotment or planning area, and (3) the intended actions for achieving those objectives.

-T-

time of use: the season or calendar period for which livestock grazing is authorized.