Inventory Guide for Ranchers

Kirk C. McDaniel

Since the National Environmental Policy Act of 1970, the Federal Land Policy and Management Act of 1976 and the Public Rangeland Improvement Act of 1978 were passed into law by the United States Congress, there has been a profound impact on livestock operators using public lands. Land administered by the Bureau of Land Management and the U.S. Forest Service are under closer scrutiny than ever before. The laws mandate the federal agencies to acquire data which may significantly affect the number, kind, and season of use livestock will be able to graze on public lands in the future.

During the data collection and planning process, both the BLM and USFS are required by law (Public Rangeland Improvement Act of 1978) to seek the "careful and considered consultation, cooperation, and coordination" with permittees, leasees, landowners, and district grazing advisory boards.

As stockmen are asked to become increasingly involved in the development of management plans, they may soon discover that they do not have the backlog of "data" that federal agencies have. These data, collected by agency inventory teams, are used to determine grazing capacity, range condition and trend, season of use, and systems of grazing. Additionally, range improvement priorities are determined for construction of fences, water facilities, cattle guards, and nonstructural improvements such as brush control and reseeding. The permittee can influence the final plan through his active participation with agency personnel during the planning process. An ill-prepared or nonparticipating rancher may be forced to accept a plan that is not completely satisfactory to his needs.

A major problem permittees are faced with during the management planning process is insufficient "data" to support their own idea or needs. The rancher is at a disadvantage when he cannot quantify the number of AUM's that should be allowed for his grazing allotment in the same manner an agency does. Further, the permittee may be frustrated by his apparent inability to substantiate that range condition is improving or declining or that an imposed management system will be an economic hardship on his operation.

Questions being asked more and more by stockmen grazing on public lands are, "What data do I need before an Environmental Impact Statement or Allotment Management Plan is prepared on my grazing allotment?" and "What kinds of data do I need to document conditions in the future?" Many ranchers do not realize that they have an abundance of "data" already captured on photographs, documented on range records, or stored in an undocumented form in their own minds. One advantage most stockmen have over federal agency personnel is experience and a "feel for their land."

This guide was prepared to assist stockmen using public or leased land to compile a data base in a manner useful to the environmental impact statement or management planning process. The guide was prepared by members of the Range Improvement Task Force (RITF), which includes specialists in range ecology, animal science, brush management, wildlife, and economics at New Mexico State University.

The guide, which is in checklist form, includes seven kinds of records on past and present use and information needed to document range use in the future. The Range Improvement Task Force has prepared a more detailed description of range planning and range inventory methods in two RITF reports. The "Guide to New Mexico Range Analysis" RITF Report 6, and "Planning, Monitoring, and Evaluating Grazing Management Plans—A Guide for Public Land Livestock Operators" RITF Report 7, are available upon request. Mail inquiries to RITF, Box 3AE, New Mexico State University, Las Cruces, New Mexico 88001.

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Historical Records

Obtain as full a history of the management unit as possible. Records of ranch use and history are recommended, when available, and should include such items as:

- Early American journals or letters
- Landscape photographs
- Ownership and sale history
- Reputation of property
- Tax records
- Economic history
- Previous grazing management plans
- Past hazards: poisonous plants, predators, stealing, trespassing, insects, weather extremes, inadequate water, inadequate fencing, incroachment of undesirable brush or weeds.
- History of cooperative government agreements
- Description of successful and unsuccessful soil and range developments and conservation projects

Livestock use records

- Type of livestock carried
- Weight of marketed animals
- Calf crop percentage
- Death losses and reasons

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Editor's Note: This is a very timely article because more and more ranchers, as well as agency people, are getting involved in the new federal laws affecting United States rangelands. This is a followup to the short announcement about the New Mexico Range Task Force on page 84, Rangelands, April, 1979.
Livestock sale prices
Stocking rate adjustments
Changes in number and kind of wildlife

Physical and Environmental Records
Keep a journal to record regularly, in diary form, various environmental events that affect your range area. Include:

- Climatic records—temperatures, precipitation, snow depth and persistence, patterns of storms over the allotment, unusual freeze, length of growing season, prevailing seasonal winds, etc.
- Water records—availability at natural and developed sources.
- Topography—natural barriers.
- Soils—type and condition. Refer to a Soil Conservation Service soil survey, if available.
- Detriments—poisonous plants, insects, predators, undesirable vegetation, inadequate water and fencing, range fires, etc.
- Other—use of allotment by persons other than permittee—including hunters, fishermen, recreationists, mining activities, trespass livestock, etc.

Range Use Records
Some of this information may be available from the government agency responsible for the land. Be sure you have a copy of all records they may have.

Present grazing
- Dates in pastures
- Dates out of pastures
- Livestock numbers or AUM’s
- Class and kind of livestock
- Pasture location
- Estimated utilization
Management objectives and goals
- Land resources by acreage or AUM’s
  - Private properties
  - State land
  - Federal land
  - Leased or rented range
- Allotment maps Showing vegetation types, improvements, topography, etc. Should be available from agency office or U.S. Geological Survey maps.
- Range improvement records—records of design and costs of improvements, maintenance expenses, responsibility for upkeep, use dates (i.e. when wells are turned on or off).
- Forage resources
  - Plant communities, description, and condition
  - Range trend and condition
  - Range readiness
  - Palatability and nutritional value of forage
  - Poisonous plant problems

Livestock Performance Records
Establish livestock management objectives and goals.
Type of operation
Breeding performance and goals
Class of livestock—age, sex, grade, etc.
Kinds of livestock—sheep, cattle, etc.

Stocking rate or livestock numbers
Calf crop percentage
Weaning weights
Market weights
Description of supplemental program
Livestock handling dates
- Season and age of breeding, birth, weaning, etc.
- Work plan for branding, marking, vaccinating, shearing, etc.
Purchase practices
Marketing practices

Economic Records
Perform a cost and return analysis on all proposed Environmental Impact Statements and Allotment Management Plans affecting your operation. Include:

- Investments
  - Land investment
  - Improvement investment
  - Machinery and equipment
  - Livestock investment
- Cost
  - Feed and supplements
  - Leases and grazing fees
  - Livestock expenses
  - Labor expense
  - Property tax
  - Utility cost
  - Machinery and equipment
  - Other ranch costs
- Income
  - Livestock sales
  - Crop sales
  - Values of ranch products consumed on ranch
  - Outside income

Wildlife Records
Knowing the number and kind of wildlife on your allotment is increasingly important. Conduct wildlife counts to determine:

- Kind of wildlife
- Numbers of wildlife
- Seasonal use patterns
- Sex ratios
- Competitive use with livestock
- Predator problems

Future Technological Adoptions on Ranch or Allotment
Be creative! Develop short- and long-range management plans.
- Rangeland Monitoring Systems
  - Utilization studies
  - Range condition and trend studies
  - Ground photography documentation
  - Aerial photography documentation
  - Range use and improvement records
- Range Improvement Program
  - Brush control with mechanical, chemical, fire, or biological methods
Something of Value—Energy from Wood on Rangelands

James A. Young and Raymond A. Evans

One of the striking influences of the current energy crisis has been a strong shift from dependency on oil or natural gas for home heating to at least partial or supplemental home heating with wood-burning stoves or fireplaces. The result has been a startling increase in demand and subsequently, the price for fuel wood.

Many acres of noncommercial woodlands have relatively large accumulations of woody biomass that could serve as fuel wood. These areas are considered rangelands for domestic and wild animals, watersheds, and recreational areas. Because of successional changes induced by the excessive grazing of domestic livestock and suppression of wildfires, huge amounts of woody material have accumulated on these rangelands at the expense of herbaceous species. A considerable effort has been spent by rangeland managers during the past 30 years at correcting this imbalance by applying mechanical, herbicidal, or prescribed burning treatments to shift the ecological balance in favor of herbaceous species. Depending on the plant community and the amount of woody biomass accumulated, these treatments may have included a destructive disposal of the accumulation of woody material, usually through burning. Where lesser amounts of woody biomass were dealt with, as in the case of spraying brush, the woody material was allowed to decay in place.

Under pristine conditions, woody biomass probably accumulated and was recycled in the ecosystem by consumption in wildfires. This catastrophic system of stand renewal preconditioned subsequent plant succession, determining the structure of existing plant communities. What are the potential and major problems associated with harvesting this energy resource?

Sustained Yield
One of the first conflicts that must be faced in an analysis of fuel wood harvest from noncommercial woodlands is the question of sustained yield. Modern forestry is predicated on the basis of sustained yield. In the western United States, there are millions of acres of rangelands with an accumulation of woody biomass. However, the sustained regrowth of such biomass probably is not the most economic or environmentally desirable use of the land. After a century of misuse, large quantities of woody biomass, considering the potential of the environment to support plant growth, have accumulated, but the annual increment of usable wood is so small that the sites probably are capable of producing forage, browse, or water of greater annual value. Data for economic evaluation of such comparisons are badly needed.

In an analysis of fuel wood harvesting cost and returns, the land manager in economic evaluations must consider the capital investment in harvesting, processing, and transporting the product. In the case of many rangeland communities, this cost must be discounted for a one-time-only harvest from each acre.

Harvesting Methodology
The collection of a bulky product growing with irregular spacing on steep, often rocky topography presents many problems. It is a significantly different problem from harvesting commercially valuable forest products or a field of grain. There are two choices in harvesting methodology: (a) labor

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