

Rangelands

For The *Future*

Rangelands account for 40% of the lands in the U.S. They are a diverse, dynamic natural resource that supports livestock, wildlife and people. To ensure the future viability of rangelands action must be taken to control noxious weeds, support range research and develop standardized monitoring.



Issue: Noxious Weeds—The continuing spread of noxious weeds across the nation's rangeland is nearing crisis level. It is estimated that Federal lands alone are being lost to noxious weeds at the rate of 4,600 acres/day or 1.67 million acres/year. About 33 million acres of Western rangeland are infested with invasive non-native weeds.

When noxious weeds infest rangelands:

- they seriously reduce livestock and wildlife carrying capacities by physically restricting access to forage and/or limiting forage production;
- they cause plant species composition to shift from high cover, soil binding native vegetation to low cover, high bare-ground non-native vegetation mixes. Thereby increasing surface water runoff and soil erosion;
- they often alter soil chemistry and nutrient cycling mechanisms so as to reduce the overall productivity and ecological health of infested rangelands; and
- they often serve as an abundant fine fuel for wildland fires that increase both ecological and economic risks.

Noxious weed infestations have caused a crippling loss to the nation's economic base due to costs to implement control measures and direct losses in rangeland productivity. Recent estimates show that the costs associated with the infestation of just 6% of North Dakota rangelands with leafy spurge is in excess of \$100 million/year.

In addition to economic losses, invasive weeds often alter ecological processes that directly affect people. For example, it has been shown that cheatgrass, a non-native annual grass that occurs in all 50 states and occupies about 100 million acres of Western rangeland, alters the frequency and severity of wildland fires. Historically, major fires that caused significant loss of human lives and personal property occurred about every 60 years. Today, they occur as often as every 3 to 5 years at a cost of millions of dollars per event.

Noxious and invasive weeds are a national problem that affect every citizen either directly or indirectly. Unfortunately, they are an expanding problem, the magnitude of which has been well documented but often only sparingly appreciated. It is the number one threat to the ecological health of the nation's rangelands and the economic well-being of associated industries relating to animal production, wildlife, recreation and open space experiences.

Issue: Conservation of Rangeland Resources—Because of the extensive nature of U.S. rangelands (i.e., 1.25 billion acres), the ecological health and welfare of this nation's larger soil, plant, animal, and atmospheric system is linked closely to the ecological health of rangelands.

Proper stewardship of these lands is dependent on site specific knowledge of

“natural” ecological processes as they relate to ecological risks.

To this end, there is a critical need for additional resources to support the basic and applied research to generate the knowledge and understanding necessary to successfully manage and conserve rangeland resources.

Currently, less than 1% of U.S. agriculture and natural resource research funds are expended on rangelands, yet these lands occupy 40% of U.S. lands. In addition to the need for research support, the need for on-the-ground technical support continues to increase. This need is critical because:

- rangelands are complex, natural ecosystems and as such prescribed management tactics and strategies are generally highly technical and site specific,
- the number of functionally unique ecological sites within the U.S. is enormous (> 1000) with the number of sites within a rangeland management unit generally being quite large (>10), and
- it is often impractical and economically prohibitive to substitute exogenous energy management tactics (i.e., fossil fuel driven solutions such as plowing, seeding, fertilizing, etc.) for less obtrusive, more natural, human knowledge rangeland management strategies.

The trend toward reduced funding for technical assistance is evident by reviewing funding and staffing trends in the USDA Natural Resource Conserva-

tion Service (NRCS). Congressional funding of installing NRCS conservation practices has steadily declined from \$175 million in FY 1997 to \$132 million in FY 2000. Likewise, it is estimated that it will take 25 years to address the conservation needs of private rangelands alone at current NRCS levels of staffing. These data show there is a profound need for funds to support both rangeland research efforts and associated on-the-ground technical support.

Issue: Rangeland Assessment and Monitoring—The ecological condition of rangelands and the effects of grazing and other rangeland uses on long-term productivity, biodiversity, water quality, wildlife habitat, carbon sequestration and other environmental concerns remains a controversial topic.

Differences among state and federal agencies in classifying and assessing rangelands make it difficult to produce “report cards” on the status of rangelands needed to make wise policy and funding decisions. These differences also complicate efforts for coordinated management among agencies and landowners at the local level.

SRM has been actively promoting the development of unified approaches to rangeland classification and assessment since the late 1970s. SRM’s Range Inventory Standardization Committee (1978-1983), Task Group on Unity in Concepts and Terminology (1989-94), and, more recently, the SRM Rangeland Assessment and Monitoring (RAM) Committee were groups composed of rangeland scientists and representatives of federal land management agencies charged to develop common definitions and approaches to rangeland assessment.

Both of the earlier groups recommended the formation of an interagency

work group to continue the process of coordination among the relevant federal agencies and the application of scientific principles in rangeland assessment.

They also recommended a statistically-based national inventory of rangeland “condition” to provide objective information on the condition and management needs of the nation’s rangelands. In 1994, similar recommendations were made by the Committee on Rangeland Classification of the National Research Council (NRC).

Some progress was made. For example, some of the concepts and terminology endorsed or introduced by SRM and the NRC have been incorporated into agency manuals and procedures, but in piecemeal fashion.

Most agencies (i.e. NRCS, Bureau of Land Management, Bureau of Indian Affairs, and many State agencies) use a common basis for classifying rangelands, ecological sites, supported by both SRM and NRC. However, the Forest Service, National Park Service, and U.S. Fish and Wildlife Service use other systems of classification.

There have also been some interagency efforts to use common approaches to assessment of rangeland condition. However, these efforts have not involved all relevant agencies, and the scientific basis for some of the methods has been criticized by rangeland scientists.

Likewise, coordinated efforts to monitor rangelands on a national or regional basis have not gone forward effectively due to changing agency policies and priorities. There still is no comprehensive national reporting system based on sound ecological and rangeland science.

Moreover, actual or threatened litigation has diverted attention from on-the-ground management and monitoring of rangelands. Ironically, the litigation often is based on the charge that agencies do not have adequate data to show the success or failure of their management.

Cooperation among the agencies and with the SRM needs to be strengthened.

SRM believes that until a scientifically sound, common basis for classifying and evaluating rangelands at the local management level and for national reporting, there will continue to be controversy, litigation, and policy decisions based on misinformation and the agendas of special interests.

Thus, we strongly advocate the estab-



lishment of a truly coordinated effort among all federal agencies involved in the management, technical assistance, or regulation of rangelands to develop common approaches to rangeland classification and assessment based on the best available science. SRM further believes that such an interagency effort should provide for scientific peer review and the incorporation of new knowledge as it becomes available.

In addition to formation of a viable and adequately funded interagency working group, SRM recommends:

- Adoption/application of the Ecological Site concept as a basis for rangeland classification, data collection and data interpretations.
- Continue efforts to standardize terms and concepts for rangeland assessment.
- Broader participation from those with local knowledge (land owners and users) with regard to ecology and reaction to management of ecological sites.
- Support for research to improve theoretical understanding of rangelands, to establish criteria for evaluating sustainability of management in the field, and to establish the relationship of rangeland indicators to wildlife habitat requirements, water quality, nutrient cycling and other desired goods and services
- Increased emphasis on the conceptual basis and methodology for assessing certain attributes on a landscape scale
- Continued development of GIS and satellite technology for improving the cost effectiveness and accuracy of rangeland assessments and integration of this technology into both national assessments and on-the-ground management.
- Incorporation of best available science into rangeland assessment methodology and increased emphasis on collection and interpretation of data by qualified rangeland management professionals.

