VALLE GRANDE GRASS BANK: THE CASE STUDY

Identification of the Problem

In a detailed study of a 250,000-acre area in northern New Mexico, ecologist Craig Allen (now with the U.S. Geological Survey) found that between 1935 and 1981 tree and shrub encroachment had reduced the grassy component of the area's ecological mosaic by 55%. Dr. Allen's study has not been duplicated elsewhere in Northern New Mexico, but field observations and analysis of historical photographs support the view that over the last half century or more, grasslands, meadows, and the grassy component of woodlands and savannas have declined markedly throughout the region. Furthermore, they continue to decline.

Generalizations are frequently dangerous, but not in this case: the decline of grass and the increasing "woodiness" of landscapes is a serious problem throughout the western states. This phenomenon appears to be the result primarily of fire suppression and past grazing practices. Aldo Leopold was among the first to describe the shift in "Grass, Brush, Timber, and Fire in Southern Arizona" (1924). Since his time numerous scientific papers including scores of rephotography studies have documented the increase of woody species at the expense of grass in the Black Hills, the Sierra Nevada and the Rocky mountains, the Great Basin, the Sonoran, and Chihuahuan deserts, and other biomes. While some data indicate that climate change may also be a factor, the reintroduction of fire to wildland ecosystems has proven effective in shifting the grass/brush/tree mosaic toward a more naturalistic pattern.

The loss of grass communities has diminished ecological diversity within the regional landscape, and it has also eroded the viability of ranching in such places as Northern New Mexico, where small-scale Hispanic ranchers depend upon the use of public lands for the perpetuation of their livelihoods and traditions. Consider the dynamics: a fixed number of cows (and an increasing population of elk) must draw subsistence from a grass resource that is declining faster than one percent per year. The cattle necessarily use remaining grasslands heavily and crowd into riparian areas. The social consequences of such a predicament are also clear: environmentalists blame ranchers for the damaging effects of grazing and press for the removal of cattle from public lands. Ranchers, meanwhile, fight to maintain their herds and blame environmentalists for a range of sins that includes intolerance and cultural insensitivity. Locked in their accustomed roles, both sides fail to address the long-term ecological changes that structure their conflict.

A Solution

The decline of the grassy component of the ecological mosaic results from the combined effects of fire suppression and historical grazing. As elsewhere in the West, nearly all the ecological communities that support grazing in northern New Mexico depend upon recurrent low-intensity fire to arrest the encroachment of trees and shrubs. It follows that a central challenge in restoring grassland diversity and productivity is to restore fire to its natural role in structuring and renewing the regional landscape. Fire alone, however, is not the answer, for in many instances, mechanical thinning of woody species is needed to reduce fuels, lest subsequent fires burn too

hot and produce unintended damage. Conversely, in some stands thinning is necessary in order to place enough fuels on the ground to carry a sufficiently hot fire through the woodland.

Let it be noted that the simple removal of cattle from public lands, as urged by a substantial number of environmentalists, will not restore environmental diversity and health, for it will not bring the keystone process of fire back into the landscape. A premise of the Valle Grande Grass Bank is that those who wish to improve the health of large landscapes must work constructively with the people who occupy and use those landscapes. In the case of northern New Mexico, we believe that the best hope for ecologically sound, fire-wise stewardship of public land lies within the ranching community. If ranchers, working with environmentalists, become advocates for prescribed burns, wildfires, and related treatments, political leaders and public agencies will respond accordingly-to the lasting benefit of the land.

Partnership

The Valle Grande Grass Bank draws its strength from the breadth of the partnership on which it is founded. This partnership includes the Northern New Mexico Stockman's Association, the USDA Forest Service, the New Mexico State University Cooperative Extension Service, and The Conservation Fund. The partners share equal representation on the Valle Grande Grass Bank Steering Committee. A memorandum of understanding, which incorporates additional documents outlining operation of both the grass bank and the steering committee, defines the partnership. Also included among the core partnership agreements is a Right of First Refusal that guarantees the Stockman's Association the right to buy the real estate assets of the grass bank at such time as the Fund elects to sell them.

Primary Goals

From the outset, the project has pursued three main goals:

1. Improve the ecological health of public grazing lands for the benefit of all creatures dependent on them -- from juncos to jackrabbits and curlews to cowboys;
2. Strengthen the economic and environmental foundation of northern New Mexico's ranching tradition, which is arguably the oldest in the nation; and
3. Show that ranchers, conservationists, and agency personnel can work together for the good of the land and the people who depend on it -- and do so in the framework of a model that can be exported to other areas with similar needs.

The project has achieved measurable success in all three of these areas and its progress is continuing.

Meanwhile, the Valle Grande Grass Bank remains remarkable in a number of respects:

- It fully integrates environmental and economic goals;
- It is consistent with high standards of environmental justice;

It operates in harmony with the social and cultural traditions of the region; and
It shares ownership and authority broadly among diverse groups.

Program History

In 1996 the Fund, with the assistance of the Forest Service, undertook to study the feasibility of establishing a public land grass bank in northern New Mexico. That study led, in 1997, to formation of the four-party partnership described above. Meanwhile, real estate negotiation and fundraising for acquisition of a suitable ranch advanced. The Fund closed on purchase of the Triple S ranch in August 1997, renaming it the Valle Grande Ranch. The ranch consists of 240 acres of fee land on Rowe Mesa, south of the town of Pecos in San Miguel County. Purchase of the fee land qualified the Fund to become the sole grazing permittee of the adjacent 36,000-acre Valle Grande grazing allotment within Santa Fe National Forest. The permit has been quantified at 325 cow-calf pairs yearlong.

Funds for acquisition of the ranch were provided by the National Fish and Wildlife Foundation, the Thaw Charitable Trust, the McCune Charitable Foundation, the Wyss Foundation, the New Cycle Foundation, private donors, and the Southwest Revolving Fund of the Conservation Fund. The Frost Foundation provided funds for initial project outreach. The project's largest single donor is the Ford Foundation, that funded the initial feasibility study from which the project grew and subsequently funded project's core operations. The project is just now beginning its third full year of operation on the strength of its second, two-year operating grant from the Ford Foundation.

Program Operation

The steering committee reviews applications for grass bank participation from allotments throughout the Santa Fe and Carson National Forests. Based on the committee's recommendation, the supervisor of the Santa Fe National Forest then selects participants. Cattle from those allotments are delivered to the Valle Grande allotment at the appropriate time and placed in the care of a full-time cowboy and range rider provided by The Conservation Fund. By placing their cattle on the grass bank, participating permittees rest their "home" allotments, allowing their pastures, for instance, to grow a crop of grass that will fuel a prescribed fire. In some cases, small-diameter thinning operations precede the needed fires. Participation in the grass bank usually lasts several growing seasons, allowing desired vegetation to become resilient following restoration treatments.

The first cattle arrived on the Valle Grande Grass Bank in March 1998. By mid-summer, the ranch held 264 cows from three allotments. Elements of the winter herd, drawn from two more allotments, began arriving in August.

Gradually the reputation of the grass bank grew. By January 1999, the steering committee had received applications from seven allotments requesting three times the amount of grazing that was actually available.

The steering committee and the forest supervisor emphasized the quality of the restoration programs proposed for participating allotments as they selected participants for the grass bank.

During the 1999 growing season, 346 cows and their calves, belonging to 19 permittees from three allotments, grazed on the Valle Grande Grass Bank. A smaller herd of about 100 head will remain on the ranch through the winter. Rehabilitation treatments, meanwhile, have been launched for12,000 acres of currently or previously participating allotments. Additional treatments are scheduled for the participating allotments in the year 2000 and later.

Population Being Served

For centuries small-scale family ranching has provided a cornerstone for life in Northern New Mexico. So strong are the cultural and social values associated with tending livestock on ancestral lands that in most instances, the region's ranchers persist in ranching not because of the economics involved but in spite of them. Participants in the Valle Grande Grass Bank reflect these values. The size of their herds varies from a high of 52 head to a low of 7. The average size is less than 18, which by most standards is not a viable economic unit. Participants in the grass bank are of decidedly modest means. They hail from such small towns and villages as Penasco, La Bajada, Mora, and LeDoux. The president of the Santa Barbara Grazing Association, which has brought its entire 203-head herd to the grass bank, is perhaps typical of participants and of northern New Mexico public land permittees in general. His family has been grazing cattle in the mountains above his Penasco valley home for many generations. He works a full-time job as the night janitor at the local high school. His 14 cows provide meat for the family table and represent a kind of savings-account-on-the-hoof.

Secondary Goals

A project like the Valle Grande Grass Bank can exert influence in a range of areas. Some of the secondary goals of the grass bank include:

- Educating permittees in alternative methods of livestock management
- Revising general concepts of acceptable grazing intensity so that "overgrazing" is seen not merely as grazing, within the time scale of a grazing season, that injures the health of forage plants. Within a multi-year time scale, overgrazing is grazing that prevents the operation of fire and other keystone processes on which ecosystem health depends
- Energizing and empowering the progressive, conservation-minded sector of the ranching community
- Energizing and empowering goal-oriented, conservation-minded personnel within the Forest Service
- Broadening the focus of the Forest Service's prescribed fire program beyond fuel management within forest stands to give fuller attention to grassland maintenance and restoration

- Healing rifts between rural Hispanic communities and Anglo environmental groups, which are mainly urban and suburban
- Demonstrating a collaborative and interest-based alternative to the dominant model of environmental dispute resolution, which is argumentative and rights-based
- Promoting a stronger ethic of grassroots participation in the stewardship of public lands
- Establishing monitoring, i.e. keen observation and continuous feedback, as an integral element of any resource extraction activity

A West-Wide Model

The Valle Grande project drew inspiration from a private land grass bank developed by the Malpai Borderland Group and the Animas Foundation. The main purpose of the Malpai grass bank was to prevent the fragmentation and subdivision of private ranch lands in southwest New Mexico and southeast Arizona. By contrast, the Valle Grande model, responding to different regional conditions, focuses upon the rehabilitation of hard-used public lands. Both models are exportable to other regions and have attracted attention from ranchers and public land managers in virtually every western state. Early efforts toward creating grass banks similar to the Valle Grande are underway in both California and Idaho. Close to home in northern New Mexico, ranchers whose cattle could not be accommodated on the Valle Grande Grass Bank in 1999 are working with the Bureau of Land Management and Carson National Forest to establish a second public land grass bank within the region.

In partnership with the Quivira Coalition and the Malpai Borderland Group, The Conservation Fund has begun planning a conference on grass banking to be held in 2000 in Santa Fe, subject to funding. We are embarking on this course because of the degree of interest our grass bank work has evoked. Such a conference will provide a forum for discussion of grass bank issues with interested ranchers, land managers, and environmentalists from around the West. Additionally, The Conservation Fund will continue to make presentations on grassbanking at other conferences and gatherings.

The Radical Center

The concept of grass banks has obviously touched a nerve. We believe this is because it creates a kind of meeting place where people with different backgrounds and values can effectively work together for environmental improvement. Borrowing a phrase from Bill McDonald of the Malpai Borderland Group, we call this meeting place the radical center. It is a place where all parties -- ranchers, environmentalists, and bureaucrats -- cease the pursuit of business as usual and approach shared challenges afresh. For ranchers, this means accepting a higher standard of environmental performance; for environmentalists, it means working constructively with people involved in extractive use of the land; for bureaucrats, it means focusing on product, not merely defending procedure, and it means the sharing of authority and power. Grassbanking has found a receptive audience in all three of these communities because the radical center affords common ground to which all parties can move without loss of pride. And having moved there, all parties can then get on with meaningful, tangible, value-producing work.

The radical center, together with the innovations, like grassbanking, that characterize it, have proved highly attractive to people who desire to advance their interests, not just defend their positions. They are not substitutes for litigation-based strategies for environmental protection, but they are vital complements. As a society, we need to be able to argue our disputes, but we also need to know when and how to collaborate.

Litigation-based strategies are effective in stopping undesirable actions, but they tend, however, to be much less effective in the reverse. The challenge of land restoration is a challenge of positive action. People throughout the West are realizing that it cannot advance without effective, broad-based collaboration among disparate groups. The Valle Grande Grass Bank has attracted widespread attention because people recognize it as a leading model of pragmatic and effective inter-group collaboration.

Defining Success

The Valle Grande Grass Bank will ultimately be successful only if the land treatments it engenders have the desired effect of increasing and reinvigorating the grassy component of the ecological mosaic of the region. This is the primary result toward which the entire project is directed. Only if the land treatments are successful will the project's hoped-for environmental and economic benefits be produced.

Need for Monitoring

Measurement of the ultimate success of the project will depend on accurate, long-term monitoring of the effects of grass bank land treatments. These treatments will be carried out on Valle Grande allotment as well as on participating allotments. Without such monitoring, it will be impossible to know with precision the effectiveness of a given fire in killing woody species and reestablishing grass dominance. Some fires, for instance, may simply "turn the landscape black" for a few months without having significant longer-term ecological effects. Monitoring is also necessary in order to know if a fire may have burned too hot and facilitated unwanted soil erosion, if truck traffic attendant to thinning and fuelwood harvest resulted in degradation of the site, or if some other overlooked factor compromised the usefulness of a project. The accepted data are clear that fire, thinning, and other land treatments can have positive ecological effects. The gap between the theoretical and the actual, however, can at times be wide due to variability in treatment application and environmental conditions. Only by developing a strong monitoring program for the Valle Grande Grass Bank will we be able to know whether the actual implementation of land treatments lived up to their theoretical potential. A strong monitoring program will have a further benefit: if Forest Service crews carrying out the treatments know that their efforts will be measured and evaluated, they may be more strongly motivated to carry them out well.

Partnership with Jornada Experimental Range

In order to meet the challenge of developing a thrifty but scientifically accurate monitoring program, the Conservation Fund, with the support of the Grass Bank Steering Committee, has forged a partnership with scientists at the Jornada Experimental Range (JER), an arm of the Department of Agriculture's Agricultural Research Service located near Las Cruces, NM. The JER is one of the preeminent field research institutions in the American West. Its commitment to ecological monitoring is attested by the fact that it will soon publish a new manual for the monitoring of ecological change over a wide range of landscapes. JER has been attracted to the Valle Grande Grass Bank in part because of its commitment to public service and positive change and in part because the variety of treatment sites included in the grass bank program will allow useful field testing of its monitoring protocols. Grass bank treatment sites range from the interface of short grass prairie with sagebrush and pinyon-juniper communities through a variety of forest types nearly to timberline. JER scientists have helped the Fund to design a transect-based monitoring program that will efficiently record such variables as soil condition, litter depth, canopy structure, and density and composition of vegetation. JER will also provide software for storage and processing of data, and it will assist in the data's analysis.

Plan Design

Our plan calls for monitoring a total of 12 treatments distributed among 6 to 9 allotments, including the Valle Grande allotment. Treatments will range in size from a few hundred to a few thousand acres. The basic transect will consist of 3 radial 100-foot lines. We will establish six such transects within each treatment area, as well as three control transects outside the treatment. This procedure will result in 9 transects per treatment, for a total of 108 for the 12 monitored treatments.

Each treatment will be photographed and read prior to and soon after treatment (Year 0), a year after treatment (Year 1), and at three year intervals (Years 4 and 7). Reports analyzing the collected data will be produced in each of these years.

The research team will be headed by a principal investigator with training equivalent to a master's degree in biology and strong field experience. A work-study student (or a succession of students) will assist the principal investigator both in the field and in the office. We expect to fill the work-study position will young people from communities within the study area who are considering a career in science or land management.

Monitoring Initiated

Thanks to a timely grant from the Wyss Foundation, The Conservation Fund launched its monitoring program in October 1999, and contractors took to the field immediately to establish transects in areas scheduled for fall and spring burning.