

USDA Natural Resources Conservation Service
and the Central Coast Rangeland Coalition (CCRC)

Rangeland Health Indicators Project

L.D. Ford, L. Huntsinger, and G. Hayes: July 14, 2006

Agency Manager Meeting to Refine Indicators—Southern Region, Templeton, June 23, 2006

Summary Minutes

Attending: *Agency Managers*—Deborah Hillyard (California Department of Fish and Game) and Jeff Kwasny (Los Padres National Forest); *CCRC*--Grey Hayes (NERR Elkhorn Slough, Coastal Training Program); *Facilitating Consultants*--Larry Ford and Lynn Huntsinger

Handouts--meeting agenda, discussion questions, roles of consultants, process to define the indicators, next steps, CCRC candidate indicators, needs, audiences and applications, criteria and approach, and references

Introductions of Attendees

CCRC History and Project Purposes

Hayes initiated this discussion. The CCRC started meeting about three years ago. It includes ranchers, educators, scientists, and agency representatives. Discussions included issues and obstacles about defining and demonstrating sustainable rangeland and grazing management; but they could not reach consensus on what to monitor. After working to summarize a “laundry list” of potential indicators and to describe healthy rangeland landscapes, the NRCS funded a cooperative agreement to hire a consultant to help define the indicator system.

Priority Concerns and Indicator Concepts: The following sections summarize the priority concerns about rangeland health and sustainability, and concepts for indicators to measure them as expressed by the agency managers of this area in three categories.

A. Management Planning: Planning is required to translate the agency’s mission into an organized approach to achieve specified rangeland management goals. A better plan is likely to support the better functioning of a livestock operation. How well this planning process is reflected in the CCRC indicators system will determine how acceptable and useful it will be to each agency. Plans should specify the period covered, including the time interval for review and renewal.

A.1. Goals Are Determined Appropriately and Integrated

Before selecting indicators to monitor, the process should start with determining the appropriate goals. The set of goals will depend on the kind of lands and the responsibilities of the different agency owners. The goals must also reflect all applicable laws and agency policies.

For example, Hillyard emphasized that the Department of Fish and Game uses a definition of rangelands that includes uses other than livestock grazing as well as grazing, if for specific purposes. Department rangelands are managed primarily for positive results to meet public trust resource protection and use goals, not minimizing harm to special resources. The Forest Service is similar, except it is generally required to include livestock grazing as one of multiple uses as a purpose defined under the Multiple Use Sustained Yield Act. An exception to this general Forest Service policy will be taken in planning for the recently-acquired Brazil Ranch on the Big Sur coast. There grazing will be re-authorized only to benefit biological resources. Planning for public agency rangelands differs from planning for private lands in that non-livestock goals may be more important.

A.2. Grazing and Non-Grazing Management Objectives Are Integrated

Site-specific objectives are set after determination of goals, and based on those goals. The objectives must reflect an up-to-date and scientifically-based assessment of Best Management Practices.

Hillyard emphasized that the public is now demanding a greater management emphasis on biological resources and other special resources of public rangelands by the public agencies. Such goals should be included in management planning. Grazing management and livestock production objectives can benefit the biological resources, in addition to posing potential conflicts. So the questions must be asked, “how would grazing benefit these resources” and “how would grazing harm them?” If grazing would be beneficial, then it should be designed to maximize those benefits and to minimize negative effects.

Non-grazing natural disturbances, including fire and flooding, must be incorporated.

A.3. Plan Includes Monitoring, Adaptation, Control, and Peer Review

Monitoring is an integral part of management planning, and results are used to determine whether goals are being met, at what point actions or changes in plans are needed to meet the goals, and what actions or changes are needed. Hillyard emphasized that because of the differences in kinds of lands and responsibilities of the agency owners, the selected monitoring variables (indicators) should be weighted (to reflect relative importance) in the monitoring analysis. Each monitored indicator must have a specified standard or threshold of acceptable values, and at what point an adjustment of plans or remedial action is warranted.

Monitoring must be relatively feasible and quick to conduct, or it won't be implemented. Both the Department of Fish and Game's and Forest Service's budgets and staff have been reduced for such tasks. Therefore, they are increasingly delegating monitoring to the grazing lessees or other rangeland managers, rather than conducting it with agency personnel. Compliance monitoring (for example of key elements of the grazing treatment prescription in a lease) should be distinguished from other monitoring, and may require that agency personnel conduct it to assure credibility. The monitoring plan should specify which party (including external professionals) is responsible for what monitoring activities.

Adaptation must be included in the plan. Adjustments of plans or remedial actions should be specified for the instances when the standards or threshold values of monitoring variables are exceeded. The Department of Fish and Game uses a tiered system of response to compliance failures (the management treatment specifications were not followed). If the grazing lessee is out of compliance for one year, then monitoring requirements are increased; if for two years, then the management plan is changed; if for three years, then the lessee is replaced.

Hayes emphasized that controls are needed to determine whether management, site conditions, growth, or other factors are causing the changes measured by the monitoring system. Unmanaged (e.g. ungrazed) reference sites (comparable to managed sites in all ways except management) are needed to complete the equation for such variables as forage utilization. In cases where management treatments will be or have changed (such as stopping or starting grazing, or shifting to a new grazing system), a control with continuation of the previous management will provide evidence of the effectiveness of the new management. Such a control could also potentially provide a stable refuge to maintain resource that was not threatened by the previous management or that did not need a management change. This dimension of monitoring would also provide the opportunity for scientists to conduct research, or to use monitoring data with greater credibility.

Hayes also emphasized peer review as an important means to assure credibility of plans and monitoring methods and results, and to seek external input. Certification programs for similar natural resource management sustainability require an external review by a panel of relevant scientists and other experts.

B. Basic Health Indicators: These indicators would be applicable broadly to all sites, and represent fundamental conditions that contribute to the capacity of the site to support both the basic and special elements.

B.1. Living Soil

Kwasny suggested “living soils,” as measured by root mass and depth, microbial activity, and avoidance of compaction during wet seasons are indicators of healthy soils. Such measures would vary with vegetation type and cover of vegetated or bare soil, and so should be developed for each vegetation type.

B.2. Resilience to Disturbance

Natural vegetation community and soil structure recover quickly from disturbances due to grazing, fire, flooding, and other events.

B.3. RDM/Phytomass Mapping

The Department of Fish and Game requires mapping of RDM to assure compliance with a grazing lease and to identify uneven livestock utilization and areas of excess. This measure is more useful at inland sites with greater proportions of annual grasses, and less useful on the coast

where more perennial grasses occur. There is no scientific literature describing RDM effects for California coastal prairie, or on the difference species of grasses or forbs.

B.4. Species Diversity

Both agencies are required to maintain the diversity of native species naturally occurring at the site.

B.5. Landscape Mosaic

A healthy landscape supports a mosaic of a variety of habitats (for plants and animals) composed of native species, including herbaceous forage and browse.

B.6. Noxious/Undesirable Plants

A healthy rangeland is capable of controlling existing and new infestations of noxious/undesirable plants.

B.7. Livestock Operation on Leased Public Rangelands

Kwasny and Hillyard discussed how a well-functioning livestock operation on leased public rangelands is based on a sound management plan that shares the visions of management with the agency owner. Its ranching program includes lands other than the leased site, which provides flexibility to adverse conditions and to adjust livestock numbers. The operator is experienced with the site's kind of vegetation and terrain, and has a good track record of meeting similar management goals at the other properties.

C. Special Resource Indicators: These indicators would be applicable to particular sites and agencies, and represent the achievement of special goals and conditions that contribute to the capacity of the site to support special elements.

C.1. Native Grasses

The site is capable of supporting and supports the persistence of existing stands of native grasses and associated native forbs.

C.2. Special-Status Species Habitat

The site is capable of supporting and supports the natural habitat for the persistence of existing and potential populations of special-status species.

C.3. Water Quality

The group recognizes that the regional water quality control boards are likely to make new rules for the management of non-point source water pollution associated with rangeland livestock

grazing in the near future. In anticipation of stricter requirements, the group identified the following indicators:

- Are managers of the sites using Best Management Practices to avoid or reduce non-point source water pollution, and including such measures in their management plans and monitoring systems? One feasible measure of this would be the pattern of fecal deposits near and away from water.
- Are the sites contributing to impairment of a recognized water body; are there one or more recognizable point sources of such pollution at the site (watershed wide survey of TMDLs); and if so are the managers taking active steps to eliminate it and reduce associated pollution?

C.4. Game Habitat

The Department of Fish and Game is required to support the natural habitat for the persistence of existing and potential populations of game species on designated rangeland sites.

C.5. Forage

The livestock operation is dependent upon maintaining or improving the quantity and quality of forage available for livestock.

Recommendations for Development of the Indicator System

- Don't included indicator candidates that we cannot sufficiently explain or measure.
- Distinguish and complement indicators of damage versus health.
- The Proper Functioning Condition (PFC) system used by the Forest Service and Bureau of Land Management is a useful model.

Closing

Both agency managers present at the meeting agreed to participate in the ongoing refinement of the CCRC indicators, including subsequent test-monitoring at their properties.

Ford collected email addresses, and said he would distribute these minutes with instructions to access the project's website.