Request for Proposals:	Spring 2008 Rangeland Monitoring
Agency:	Central Coast Rangeland Coalition
Contact:	Grey Hayes, PhD Elkhorn Slough Coastal Training Program 1700 Elkhorn Road Watsonville, CA 95076 grey@elkhornlslough.org (831) 274-8700
Deadline:	Proposals will not be accepted if postmarked (or emailed) later than January 31, 2008

Instructions

Applicants are encouraged to carefully read the RFP and to write a brief statement addressing all qualifications. Please also include resume(s) for all persons in the proposal. Resumes should list all relevant work experience and include 3 references with direct personal experience working alongside or supervising similar activities. Please also include at least one written report summarizing and analyzing ecological field data. Further questions should be addressed to the contact above. Electronic proposal submission strongly encouraged in order to minimize natural resource impacts.

Request for Proposals
Spring 2008 Rangeland Monitoring
-Central Coast Rangeland Coalition-
January 2008

Overview

The Central Coast Rangelands Coalition seeks one qualified individual to assist with monitoring rangelands from Morro Bay to San Francisco during the spring 2008. The requested monitoring includes brief interviews with land managers followed by field measurements of bare soil, soil structure, thatch, and plant species richness. In total, 17 sites are included, 5 near Morro Bay, 7 near the Monterey Bay, and 5 in the East San Francisco Bay hills. The project will be assisted by a range specialist with the U.S.D.A. Natural Resources Conservation Service; this person will assist with all aspects of the project as well as providing transportation, site maps, and a familiarity with most sites.

The Central Coast Rangeland Coalition will contract through cooperating partners with an independent contractor to complete the work. The Coalition and its partners will contract with the most qualified and affordable applicant without regard to race, gender, sexual preference, or ethnicity. The contractor must be insured, experienced, capable, and have the following qualifications:

- experience in ecological field monitoring
- familiarity with rangeland management
- expertise in locating and recording sites using GPS technology
- physical ability to negotiate difficult terrain
- experience interpreting data
- writing reports
- meeting deadlines
- ability to work effectively with team members

Description

The following is a detailed description of the project data to be collected.

Interviews

Contractor will interview land manager to identify problem areas with excess bare soil, compacted soil, excess thatch, and potential plant species loss. Interview answers will be recorded with notes and problem areas will be mapped in conjunction with the land manager and NRCS personnel.

Sample Site Selection

Sites sampled the prior year will be re-sampled in the prior vicinity, as located by GPS data and technology. Additional sample locations will be added with the following protocol:

1) Areas identified in the rancher interview as problem sites will be visited and sampled as a priority.

2) Additional sample locations will be added as time permits; a maximum of 10 hours per ranch/site. Additional sample locations will be located to capture data inclusive of the ecological heterogeneity of the rangelands.

3) Any additional sites will be recorded with GPS located coordinate data.

Measurements

All measures will take place along up to three, 100' line transects at each sample site. Prior sample locations will be located by GPS and compass bearing. New locations will be recorded at the start of transect each by GPS, with an accompanying compass bearing for direction of transects. Data forms developed during prior years will be provided by NRCS staff for use in recording all data.

Bare Soil (Herrick et al, 2005)

Cover of bare mineral soil (*not* covered by herbaceous or woody vegetative foliage, standing dead plants, rock, litter, lichen, or moss) will be measured. All areas of livestock use and environmental conditions will be included, except for "service areas."

Measurements will take place along line transects by recording the number of "hits" of bare mineral soil touched by a standard pin flag lowered to the ground at 1 foot intervals along 100 foot transects at each sample site.

Soil Structure (Oster, pers. comm.2007)

Measurements will be recorded for soil properties found in 8" deep soil cores extracted with a sharpshooter shovel. 10 samples will be collected from each transect, starting 6' from transect origin and continuing at 10' intervals thereafter. Two separate depths will be described and recorded per sample: 0-4 and 4-8 inches. Soil structure for each depth range will be assigned a score of 3 for soil samples displaying least compaction and best infiltration potential (single grain, granular, or blocky), a score of 2 for soil samples displaying medium compaction and infiltration potential (platy), and a score of 1 for soil samples displaying most compaction and least infiltration potential (massive). Contractors will be trained by NRCS staff for scoring these measurements.

Thatch Persistence (Guenther 1998 and NRCS 2006)

Estimate the biomass adapted from the visual method described by Guenther (1998) at 20-feet intervals along each transect, (5 measurements/transect). Calibrate the visual estimates with clipping at one station, and converting the field weight to estimated dry weight using the NRCS National Range and Pasture Handbook estimates: clip a 1.92 square foot area, collect and weigh it in a bag, estimate the air-dry weight based on NRCS standards, then compute and record air-dry weights.

Aquatic Macro-invertebrates

Samples will be taken in the appropriate locations without permanent markers, and re-measured in the future by repeating the sample site selection process. The result will be relative numbers of individuals of each class of macro-invertebrate for each sample, and analyzed with mean, range, and variance for each stream reach.

Plant Species Richness

This measure requires the use of a 3 foot wide belt transect centered on the same line transects used for bare soil, soil structure, and thatch. All plant species will be recorded that occur within or are touching the belt. Species that are not recognized will be collected and labeled with a code, then identified by NRCS or Grey Hayes. The relative abundance of each species will be recorded in two categories; common or rare.

Reporting

Draft and final reports will be submitted to the designated CCRC representative. A draft report will be electronically submitted and CCRC review of the document will be completed with the assistance of NRCS and input from the CCRC Sub Committee. Within 2 weeks of submission, any suggested edits will be returned in electronic form to the contractor. One month following the submission of edits, the contractor will submit a final report addressing all concerns either by incorporation of edits or with reasonable explanation for not incorporating each.

All raw data will be given to NRCS, and only summarized data will be reported in the final reports. The contractor will be bound by contract not to circulate any data, report, or reference thereof outside of contacts expressly permitted and named. Final reports will contain comparisons between the sampled sites (see sample report) that will not be named but labeled with reference to geographic proximity.

Data will be analyzed and reported as follows. Both bar graphs and data in tabular form will be reported for each of the variables. Means for all data will be reported at the sample site, ranch, region, and project scales; standard error will be reported where applicable. Consultant will make statistical comparisons for all variables using site, grazing/rest, region, aspect, and slope position as variables.

Bare ground

Bare ground data will be reported as the mean percentage. Consultant will note any reasons for variance, including small mammals, trampling, etc.

Soil Structure

Data will be reported by multiplying the sum of scores for the 0-4 inch depth by two, adding that product to the sum of scores for the 4-8 inch depth, and dividing by 30 (unless the number of soil samples was less).

Thatch

Data reported will be mean biomass (pounds) per acre for the two biomass components – current year's and past year's biomass. Using these two components, the contractor will also report on the percentage of the current year's biomass that is the past year's biomass.

Plant Species Richness

Each species will be catalogued, reported, and compared using the following categories: annual/perennial; native/exotic; forage/unpalatable; invasive/not. Also report total species per site and mean species per transect.

Metadata

Any coordinate-based data will be given in electronic format and include metadata using standard, internationally accepted metadata protocol.

Background

The Central Coast Rangeland Coalition ("CCRC") was formed--with no money--about 5 years ago on a ranch in San Juan Bautista at a meeting of self-designated representatives of ranchers, scientists, conservationists, government (principally the NRCS) and non-profits. The CCRC has recently completed--with about $75,000 from NRCS, TNC, and a private foundation--its first effort at monitoring the effects of various management practices applied to various conditions of rangelands, both private and public. Those participating--there are 15 sites being monitored--are committed to repeat monitoring over a 5 years period, and in total manage approximately 200,000 acres of rangeland on the Central Coast. (The sites being managed are, of course, much smaller.)

CCRC's Statement of Purpose reads as follows:

"THE CENTRAL COAST RANGELAND COALITION ("CCRC") BELIEVES THAT HEALTHY CENTRAL COAST RANGELANDS ARE INDISPENSABLE TO THE ENDURING HEALTH AND ECONOMIC PROSPERITY OF THE PEOPLE AND COMMUNITIES LIVING THERE.

CCRC ENGAGES IN ECONOMIC, SCIENTIFIC, COMMUNICATION AND POLITICAL ACTIVITIES INTENDED TO DEVELOP AND MAINTAIN CENTRAL COAST RANGELAND POLICIES THAT ASSURE THE HEALTH OF CENTRAL COAST RANGELAND COMMUNITIES."

References

Guenther, K. 1998. Residual dry matter (RDM): monitoring photo guide. Wildland Solutions Field Guide Series.

Herrick, J.E., J.W. Van Zee, K.M. Havstad, L.M. Burkett, and W.G. Whitford. 2005. Monitoring manual for grassland, shrubland, and savanna ecosystems, Vol. 1: Quick start. U.S.D.A.-A.R.S. Jornada Experimental Range, NM.

Oster, Ken. (pers comm. 2007) Area 2 Soil Scientist Templeton Service Center, USDA Natural Resources Conservation Service; 65 Main Street, Suite 108; Templeton, CA; 93465; (805) 434-0396, x111 Ken.Oster@ca.usda.gov. Mr. Oster, an expert in soils, extensively advised the protocol and is willing to work with further refinement, training, and development.

NRCS. 2006. Inventorying and Monitoring Grazing Land Resources. In: *National Range and Pasture Handbook.* U.S.D.A. Washington, D.C. Chapter 4, 50 pp.