

Tejon Ranch Conservancy

P.O. Box 216
Frazier Park, CA 93225

January 23, 2009

Ms. Amy Burgard
Group Project Coordinator
Bren School of Environmental Science & Management
2510 Bren Hall
UC Santa Barbara, CA 93106-5131

Subject: Letter of Commitment for the Tejon Ranch Conservancy's Bren School Group Project Proposal, "Development of conceptual models and ecological baselines to support monitoring and adaptive management of Tejon Ranch, California"

Dear Ms. Burgard:

On behalf of the Tejon Ranch Conservancy, we are pleased to submit the subject proposal for a Bren School Group Project at Tejon Ranch. We view this as an exciting opportunity to work with a group of dedicated, high-caliber students and the Bren School faculty to develop important products and recommendations to inform the Conservancy's work. As such, we are committed to providing the student team all available data and information necessary for a successful project, with no restrictions on publishing their results upon completion of the project. In addition, the Tejon Ranch Conservancy is committing up to \$25,000 in funding for student summer internship stipends and expenses to ensure the student team can dedicate adequate time and resources to the project.

The Tejon Ranch Conservancy looks forward to working with the Bren School of Environmental Science & Management on this high profile project.

Sincerely,



Graham Chisholm
Board President
Tejon Ranch Conservancy

1. Development of conceptual models and ecological baselines to support monitoring and adaptive management of Tejon Ranch, California

2. Contact Information: Michael D. White, Ph.D., Conservation Biology Institute, 651 Cornish Drive, Encinitas, CA 92024, (760) 634-1590 (office), (760) 815-6328 (cell)

3. Faculty Sponsor: Frank Davis

4. Proposed Project

Problem statement

The 270,000 acre Tejon Ranch is the largest contiguous property under single, private ownership in California. Located at the confluence of 4 major biogeographic regions, the Ranch harbors a stunning diversity of plant and animal species and is considered an evolutionary “hotspot” (Figure 1).

In June 2008 the Tejon Ranch Company and a consortium of natural resource organizations signed the historic “Tejon Ranch Conservation and Land Use Agreement,” which dedicated 178,000 acres of the Ranch to permanent conservation while allowing development on 30,000 acres. The resource organizations have the option of purchasing the remaining 62,000 acres and are currently seeking funds to do so. The Tejon Ranch Conservancy was created as an independent, non-profit organization to “preserve, enhance and restore the native biodiversity and ecosystem values of the Tejon Ranch and the Tehachapi Range for the benefit of California’s future generations.”¹ By any standard, the Tejon Ranch Conservation and Land Use Agreement represents one of the most significant and forward looking conservation achievements in a state known for progressive conservation solutions.

One of the first obligations of the Tejon Ranch Conservancy (TRC) is the creation and adoption of a Ranch-wide Management Plan (RWMP) for the protected lands. The plan elements include: 1) identification of existing baseline natural resources conditions and conservation values, 2) establishment of conservation goals and objectives, 3) identification of opportunities for protection, enhancement and restoration of conservation values, 4) establishment of sustainable stewardship strategies and best management practices to be implemented through an adaptive management approach, 5) development of a public access plan, and 6) establishment of environmental education and outreach programs.

The RWMP will be developed by the TRC’s Science Program staff in consultation with the Executive Director and Board of Directors. A critical step in this process is formally conceptualizing conservation values, restoration and recreation opportunities and establishing baseline conditions in a scientifically credible manner, as well as communicating that information to TRC personnel and stakeholders. The Tejon Ranch Conservancy is seeking research assistance through a Bren MESM group project to produce these conceptual models and establish baseline conditions for the RWMP. This high-profile project will require multiple disciplinary perspectives (conservation planning, water resources management, environmental economics), analysis and synthesis of existing information, some gathering of new field data by paid summer interns, empirical data analysis, and written and visual communication of findings to a diverse audience.

Project objectives

The specific questions to be answered by this project are as follows:

- 1) What is the current state of knowledge regarding natural resources on Tejon Ranch, specifically hydrology, soils, upland vegetation community and habitat types, wetland and riparian habitats, habitat connectivity, and species known to be present on the Ranch? What are the key information gaps or uncertainties, particularly for the status of sensitive species and other conservation targets?
- 2) What is the historical and current human use of Ranch lands and waters and how is that reflected in the current distribution and condition of natural resources?

¹ Tejon Ranch Conservation and Land Use Agreement, p. 2.

- 3) What are the key drivers of current conditions on the Ranch and how do they operate to influence specific resources of concern? Examples include climate, air quality, fire regime, livestock grazing, hunting, and invasive exotic species. (The objective here is production of conceptual models to inform adaptive management and communicate with stakeholders.)
- 4) What are the key uncertainties in our understanding of ecological processes affecting resource status and trends?
- 5) What are desirable features and alternative approaches of a cost-effective adaptive monitoring and management system for evaluating trends and improving management of resources through time?

Project significance

This is a complex and important period of transition on Tejon Ranch from its long history of grazing, hunting and farming to conservation management, which will be overseen by TRC. A Multispecies Habitat Conservation Plan is now under review that covers 142,000 acres of the Ranch's most diverse biological areas and will provide permits for residential and commercial development adjacent to the Ranch's conserved lands. A State Park and a UC Natural Reserve are being considered for portions of the Ranch. A fledgling public access program is being implemented. This means that students will be part of a larger suite of applied conservation planning and management activities. They will be focused on a specific element of the land use agreement – baseline assessment for the RWMP – but in the process they will see firsthand the interplay of science, management, policy and stakeholder processes in the implementation of the conservation and land use agreement. Furthermore, their work will be foundational to the activities of the newly established Conservancy.

Background information

The idea of funding a Bren Group Project to support the baseline assessment for the RWMP evolved out of discussions between TRC Interim Science Director Mike White and Frank Davis, who is a member of the TRC Board of Directors. MW and FD vetted this idea with TRC's Board of Directors at a meeting in December 2008 and the proposal received unanimous support from the Board.

The group would work closely with Mike White, who has been involved in conservation planning for the Ranch for many years. Staff members of the Tejon Ranch Company have expressed their interest and willingness to work with group members to understand available ranch records and GIS data and to facilitate access to Ranch lands. To date, Mike has compiled most of the existing records and geospatial data and identified other historical data of interest but has had little time for analysis. Thus students will be engaged at the early stages of the baseline conditions assessment, formulation of an adaptive management framework and development of monitoring and public access programs.

Stakeholders

The primary stakeholders will be the staff and Directors of TRC, the Tejon Ranch Company (the landowner), and the resource organizations who negotiated the land use agreement (California Audubon, Natural Resources Defense Council, Sierra Club, Endangered Habitats League, Planning and Conservation League). Other important stakeholders include Tejon Mountain Village, LLC. (developer of the Tejon Mountain Village project), Centennial Partners (developer of the Centennial project), UC Natural Reserve System, California Dept. of Parks and Recreation, California Department of Fish and Game, U.S. Fish and Wildlife Service, and the citizen's of California that will be investing in conservation efforts at Tejon Ranch.

Possible approaches, available data, and deliverables

The size and complexity of Tejon Ranch make baseline assessment and conceptual modeling a challenging undertaking. We envision the following sequence of steps and deliverables to narrow the scope of the task and make it tractable given time and student capabilities:

1. Student orientation. MW and others will provide relevant materials and meet with students to give them an overview of the Ranch, the land use agreement, the RWMP, and ongoing activities. Students will tour the Ranch with MW and FD in Spring 2009.
2. Goal statement. Based on their understanding of the materials, students will articulate the broad goals for conservation and public access to help prioritize data acquisition and analysis. They will also articulate the broad goals and objectives for their work. These written documents will be reviewed and approved by MW in Spring 2009.
3. Data transfer. Early in Spring 2009 MW and FD will transfer available information and geospatial data to the group. Examples of available GIS data include recent, 1m color orthophotography, digital soils and topographic data, vegetation and forest inventory data, roads and fencelines, administrative boundaries, fire history, streams, and rare species occurrences. Other data, include grazing and hunting records, well and stream flow data, and air quality data.
4. Landscape analysis. Using available data, students will divide the Ranch into subsystems for conceptual modeling and baseline assessment. These subsystems will be mapped using available GIS data, their historic variability assessed, and their ecological characteristics summarized in a report during Spring 2009.
5. Preliminary field condition assessments. In summer 2009, with guidance from MW, student interns will establish permanent photoplots and assess range, wetland and riparian conditions across a representative set of environments in the subsystems of Tejon Ranch.
6. Conceptual models. During Summer and Fall 2009 students will develop conceptual models that capture conservation targets, key drivers, stressors and indicators for each of the subsystems. Key management-relevant uncertainties in the conceptual models will be identified. Models would be reviewed at a minimum by MW, FD, and resource managers from the Tejon Ranch Company. Models will be completed in Fall 2009.
7. Baseline Conditions Report. For each subsystem, students will summarize the extent, status and trends of resources, and its conceptual model, by end of Fall Quarter, 2009.
8. Preliminary design for cost-effective monitoring and adaptive management. Students will recommend a design and procedures for monitoring natural resource condition in relation to management activities and public use activities, to be completed by the project end date in Winter Quarter 2010.

5. Client. The Tejon Ranch Conservancy: C/o Michael White, Ph.D., Conservation Biology Institute, 651 Cornish Drive, Encinitas, CA 92024. mdwhite@consbio.org, 760-634-1590,

6. Client Commitments. See attached letter.

7. Anticipated Financial Needs. A total budget of \$27,000 is anticipated for the project, and the Tejon Ranch Conservancy has committed to provide \$25,000, assuming \$2000 will be provided to the group by the Bren School.

Summer internships (2-3 paid internships, \$20/hr, for 2 summer months)	\$20,000
Travel and other expenses (e.g., mileage, lodging, reproduction)	\$7,000
Total	\$27,000

8. Internship Opportunities: At a minimum, 2 summer interns for 2 summer months in 2009.

Fig 1. Tejon Ranch Map

