

Sierra Nevada Adaptive Management and Monitoring Program

Work Plan Development Meeting: Dec 9

II. Project Overview: John Battles



Sierra Nevada Research Institute



Goal

The goal of this **research proposal** is to learn how to make adaptive management a practical means to understanding ecosystem behavior given the current plans to manage Forest Service lands in the Sierra Nevada.

Note that all relevant documents are available at our public website
<http://kellylab.berkeley.edu/snamp/>

UC's role (per MOU):

Form a UC Science team to function as a “neutral third party” with recognized expertise in this area.

UC Science team will work with Forest Service and stakeholders to develop a process that will:

Inform and contribute to the improvement in land management practices

- A. Restore/protect valued natural resources
- B. Reduce threats to these resources and the communities

Not our role to regulate, implement, mediate.

Our role is TO LEARN and TO SHARE what we learn.

What do we mean by Adaptive Resource Management?

Uncertainty and the need to learn

Adaptive management acknowledges uncertainty and the need to learn (Walters 1986; 1993). The term "adaptive" refers to learning about ecosystems in the course of managing them.

Inclusive knowledge base

Our adaptive management process incorporates scientist, stakeholder, manager knowledge and ideas, as well as scientific information, in the development of hypotheses and goals, and is designed to improve information about the ecosystem over time.

Expectation of change

We seek to engage scientists, stakeholders, and managers in a long-term relationship grounded in shared learning about the ecosystem and society, and we expect objectives to change as society, environment, knowledge, and science change (Tear et al 2005).

Steps in Adaptive Management/Monitoring

(How we think AM/M works)

- 1. Determine current management goals.**
- 2. Gather and synthesize existing knowledge to develop working models that guides initial predictions of management outcomes.**
3. Design and implement management in accordance with principles of experimentation.
- 4. Monitor and evaluate the results of the management action.**
- 5. Incorporate what is learned into the working model; re-evaluate options.**
6. Adjust management as indicated by results evaluation and re-assessment of project goals.

Current management goals -- priority

Modifying wildland fire behavior across landscapes in the Sierran National Forests. The preferred response is to apply strategic fuel management at the landscape level.

Key Elements to UC Science Team proposal

- A. Adaptive management should be implemented as a careful testing of hypotheses where the "experiment" is the management treatments.

- B. The process must include substantive and sustained participation of all interested parties.

- C. Any monitoring plan should address multiple aspects of ecosystem response

- D. The spatial and temporal scale of the monitoring regime must match that of the management regime. Thus firesheds, landscapes on the order of 1,000's ha in size, are considered the experimental unit in this proposal.

- E. Plan must encompass the complex physical, biological, and social gradients that exist along the Sierra Nevada.

Organization of UC Science Team

Four research themes

Participatory Process

Forest Ecosystem Health

Water

Wildlife

Basic research design

Work at spatial scale of firesheds

Paired sampling approach (one treatment/one reference)

Need more than one site in Sierra Nevada

Timeline to date

2/23/05. MOU signed by representatives of the following agencies (the MOU partners)

USDA, Undersecretary for Natural Resources and Environment

USDA, Forest Service

State of California Resources Agency

USFS, Pacific Southwest Region

USFS Pacific Southwest Research Station

USDI Fish and Wildlife Service California/Nevada Operations

University of California

4/15/05. Proposal submitted by UC to MOU partners outlining our third party role.

9/1/05. Start of Participatory Agreement to develop a detailed work plan.

2/28/06. Final work plan to be submitted to MOU partners.