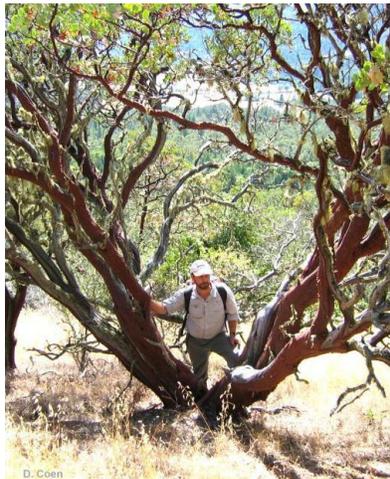




July 15, 2011

A comparison of pre-settlement vegetation and fire regimes with current patterns in oak woodlands and shrublands of southwest Oregon

This is a quick summary of the recently completed JFSP research project, 06-3-1-35. This study presents important findings on the role of fire in chaparral and oak woodlands in southern Oregon and was summarized by Dr. Molly Hunter.



Project objectives

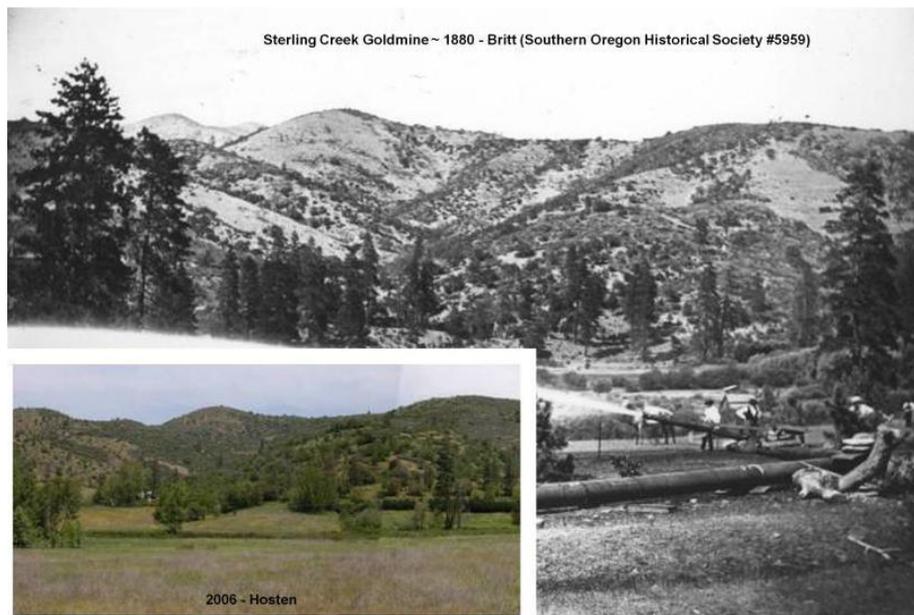
- Examine historical vegetation patterns, particularly in fire-dependent systems
- Examine changes in vegetation between pre-suppression era and the present
- Examine age and size structure of vegetation as indicators of past fire regimes
- Examine current fire regimes
- Examine the degree to which current fuel reduction practices reflect past fire regimes

Notes/interesting findings

Study has shown that fire suppression does not seem to have altered chaparral vegetation structure. Fuel treatments may be justified in these systems to reduce hazard, but they are not likely to meet restoration objectives. Dense oak woodlands were common at the time of Euro-American settlement. Thus, current dense stands are not necessarily a product of fire exclusion. The authors suggest variable thinning treatments in oak woodlands to encourage regeneration.

Specific Findings

- Chaparral shrubs had a range of structures and responses to environment and fire in SW OR. While CA chaparral populations are typically even-aged, most stands unburned >30 years were uneven-aged due to recruitment without fire and survival through fire. Current fuels treatments appear unlikely to reproduce stand structures observed in mature chaparral or in post-wildfire stands.
- Peak establishment of living Oregon white oaks generally occurred during 1850-1890, sometimes occurred in the early 1900's, and recruitment rates were low post-fire suppression (~1956). Ages of sapling-sized oak trees ranged from 5 to 164 yr. Wide variability in stand characteristics likely reflects the diversity of mechanisms that shaped them; a uniform thinning approach is unlikely to foster this variability.
- Maps created from GLO surveys indicate that about 43.2% of the landscape was in upland closed forest. Riparian and wetland closed forest constituted 1.4%, woodland comprised 41.2%, savanna made up 2.1%, shrublands were mapped at 0.8%, and prairie comprised 11.1% of the landscape. Prairie and shrublands were, however, poorly documented in the GLO records, and surveyors were inconsistent in commenting on shrubs or grass openings in the understory. Savanna may also have been undermapped.
- It is widely believed that fire suppression has negatively impacted historically open vegetation types in SW OR. However, a variety of historic records on oak, chaparral, grassland, and conifer vegetation indicate a more diverse pattern of vegetation change only partially explained by fire exclusion. Soils, Native American and modern land use and fire suppression all likely shaped current vegetation. Some open areas have become tree-dominated, but some have not changed over time.



Then and now 1850 - 2006

Suggested future work

- Regeneration in long-unburned chaparral. It is not clear if senescence is a possibility in chaparral in southern Oregon. If it is, then prescribed fire may be necessary.
- Ecological effects of fuel treatments in chaparral and oak woodlands.
- Effectiveness of fuel treatments in chaparral in mitigating fire hazard.
- Factors that influence oak regeneration, particularly moisture availability. This would help determine whether or not fuel treatments are necessary to encourage oak regeneration.

Related work

Fire Science Brief 87: To Thin or Not To Thin: Assessing the Consequences of Fuel Reduction Treatments for the Non-coniferous Ecosystems of Southwestern Oregon

http://www.firescience.gov/projects/briefs/03-3-3-36_FSBrief87.pdf

How to access this project's deliverables

<http://www.firescience.gov/>

In the upper left corner of the JFSP website click on the button **Project Search**

On the next page at the bottom you will see **Search by Project ID**

Select **06-3-1-35** from the provided pull-down list and you will see the original proposal and as you scroll down will find the deliverables associated with the project.

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