Meadows and Grazing in the Sierra Nevada:
Mapping Meadows on Public and Private Lands throughout the Sierra Nevada

Mountain Meadows in the Sierra Nevada

Prepared by Stuart Brown

July 7, 2010
Introduction

The goal of the Mountain Meadows and Grazing Project is to quantify the costs and benefits of meadow restoration on private and public lands, as they relate to grazing. As a sub-task we have developed a GIS-based map of meadows on private and public land (defined below as Public Conservation Trust lands, PCT) in the Sierra Nevada. We also highlight limitations of available data.

Products

1) **ESRI Shapefile** of Sierra Meadows. The associated database file includes the proportion of each meadow that is found on public land (PCT lands) as well as the number of acres on public land. The database file also includes all of the fields produced by the California Department of Fish and Game (CADFG) in their original meadow delineations (including meadow acreage, elevation, slope, and previous studies, when available).

2) **Summary Tables** – Information on public and private meadows organized by county and by watershed. Excel files with these data are also available.

3) **Google Earth KML files** – KML files can be downloaded and viewed in Google Earth. One file shows all Sierra Meadows (larger than 5 acres) grouped by the proportion of each meadow on public land. Another layer shows the watersheds (hydrologic units) for the Sierra.

4) **Produced Maps** – This document contains maps of meadow ownership. Meadows shown in red are mostly private; green shows public meadows.

The Data

For this analysis we used a meadow layer delineated by the California Department of Fish and Game – Resource Assessment Program using data from 2004 and 2005. Previous experience ground-truthing meadows in the Yuba watershed have led us to conclude that this delineation of Sierra meadows is superior to the delineation created by the USDA Forest Service – Pacific Southwest Remote Sensing Lab. For this analysis, we excluded meadows smaller than 5 acres and set a northern limit of the Pit River and Surprise Valley Watersheds. The public lands layer (Public Conservation Trust Land layer) was created by California Resources Agency Legacy Project in 2003. This layer identifies Public Conservation Trust lands administered by government agencies (federal, state, and local), land trusts, and non-governmental organizations.

Limitations

While we have found the CADFG Meadow Delineation to be the best currently available delineation, ground-truthing conducted last year by AR in the Yuba watershed have led us to conclude that this delineation of Sierra meadows is superior to the delineation created by the USDA Forest Service – Pacific Southwest Remote Sensing Lab. For this analysis, we excluded meadows smaller than 5 acres and set a northern limit of the Pit River and Surprise Valley Watersheds. The public lands layer (Public Conservation Trust Land layer) was created by California Resources Agency Legacy Project in 2003. This layer identifies Public Conservation Trust lands administered by government agencies (federal, state, and local), land trusts, and non-governmental organizations.

The public (PCT) land layer used in this analysis was created in 2003, and may be outdated in certain areas. Accurate and current landownership data is available for each county through county assessor’s offices. For county-wide GIS layers the counties often charge up to $1000. For information on specific parcels one can often find the information for free from the county assessors, although the process varies from county to county. Parcel numbers are available with Google Earth Pro. Landowner contact information is only available through the county assessor’s office.
Figure 1. Sierra Meadows layer delineated by the California Department of Fish and Game (2004-2005) as part of the Mountain Meadow Project. Only meadows greater than 5 acres were considered. Meadows are represented by the percent of each meadow on public (Public Conservation Trust, PCT) land. PCT land layer was developed for the California Resources Agency’s Legacy Project 2003.
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Figure 5
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