

LANDFIRE Product Application Summary

Differences in wildfires among ecoregions and land management agencies in the Sierra Nevada region, California, USA

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Application Location: Sierra Nevada, Southern Cascades, and Modoc Plateau of California

Objective

Compare fire statistics to determine changes of contemporary fire regimes vis-a-vis historic fire regimes so as to inform fire management practices on US Forest Service lands.

Project description

Recent research has indicated that in most of the western United States, fire size is increasing, large fires are becoming more frequent, and in at least some locations percentage of high-severity fire is also increasing. These changes in the contemporary fire regime are largely attributed to both changing climate and land management practices, including suppression of fires and past timber harvesting, over the last century. Fire management, including suppression and using wildfire for resource benefits, varies among federal land management agencies, yet ***no published studies have directly compared fire statistics between federal land management agencies in our study area.*** The primary response to wildfire on Forest Service areas over the last several decades has been full suppression, while the National Park Service has more readily used wildfire for resource benefits.

In this work fire perimeters and satellite-derived estimates of fire severity were used to ***compare fire statistics*** for wildfires (fire size, percentage of high-severity fire and high-severity patch size) among ecoregions, forest types, and land management agencies 1984–2009 in the Sierra Nevada, Southern Cascades, and Modoc Plateau of California, USA.

LANDFIRE products used

LANDFIRE Biophysical Settings (BpS) vegetation layer was used to broadly stratify the study areas to then compare fire severity data (data available online at www.landfire.gov) between Forest Service and Park Service lands.

Value of the work to the natural resource management/conservation community

High-severity patch size and percentage of high-severity fire, regardless of forest type, were less in Yosemite National Park than on Forest Service lands. Yosemite fires were smaller on average than fires on Forest Service lands on the east side of the Sierra Nevada, southern Cascades and Modoc Plateau. Depending upon whether fires that crossed boundaries were included or not, mean size of Yosemite fires was either smaller or not significantly different from Forest Service fires on the west side of the Sierra Nevada.

Even under current conditions, it appears that fire management practices that emulate those used in Yosemite could moderate effects of past land management, restoring and helping to maintain old forest conditions within the greater Sierra Nevada region, including the southern Cascades and Modoc Plateau.

Links, photos, additional materials

Report publication: http://www.fs.fed.us/research/publications/psw/psw_2012_collins003_miller.pdf

Video webinar:

[LANDFIRE Data Applications for Research in Fire Ecology and Forest Management](#)

PDF of webinar presentation: <http://bit.ly/1mq6OGS>