



Research Brief for Resource Managers

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Fire Suppression is Necessary in California Chaparral

Keeley, J.E. and C. J. Fotheringham. 2001. Historic fire regime in southern California shrublands. Conservation Biology 15:1536-1548.

In a 1983 paper in the journal *Science* (284: 1829-183) it was claimed that fire suppression in southern California over the previous hundred years caused the loss of the "natural" burning pattern. This supposedly resulted in an accumulation of large expanses of old fuel and was thought to be the reason behind large contemporary conflagrations. This conclusion was based on differences in fire size north and south of the U.S.A. / Mexico border and the supposition that differences in fire suppression policy was the only possible explanation for these patterns. Keeley and Fotheringham examined the basis for this assumption.

One observation is that the 1983 *Science* paper greatly inflated differences in fire size north of the border by including in the analysis two of the largest fires known from USFS records, but outside of the sample procedure. This biased the data since such records were not available south of the border.

Besides fire suppression policy there are a multitude of other factors that could account for different fire regimes on either side of the border. One important difference is in the emphasis on fire prevention. Mexico has historically lacked an organized effort at fire prevention and as a result the number of fires south of the border is many times greater than in southern California.

Management Implications

- Differences in fire sizes north and south of the US/Mexico border have been greatly inflated.
- Factors that could have a greater impact on fire size than past fire management policy include profound sociological, topographical and climatic differences in southern California and northern Baja California.

Sociological differences include the highly urban population in southern California but a much larger rural population and small ranches that have played a significant role in fragmenting fuels in Baja California, contributing to smaller fires. Topographic differences are also profound between the two regions in ways that might contribute to differences in fire size. Furthermore, the incidence of Santa Ana winds, which are responsible for large fire events north of the border, diminish with distance south of the border and account for smaller fires concentrated in summer in Baja. In addition, the latitudinal decrease in precipitation likely produces lower rates of fuel production south of the border.

It is concluded that there is a wealth of information on factors affecting fire size in southern California that make it unnecessary to base fire management in the region on questionable comparisons with Baja California.