

# What if We Didn't Suppress Fire?

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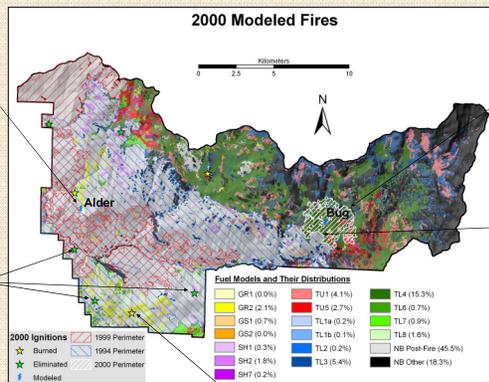


The suppression of lightning ignited wildfires removes one of the most important natural processes from fire dependent ecosystems, yet resource specialists currently have no way of measuring or monitoring the effects of these management actions. Using Yosemite and Sequoia-Kings Canyon National Parks as case studies, we retrospectively and chronologically modeled suppressed lightning ignitions. We use the results of this analysis to illustrate the effects past fire suppression decisions have had on these study areas.

## South Fork Merced Watershed, Yosemite National Park

The simulated spread of the 2000 Alder ignition was limited to ~7 ha because it occurred in an area of isolated fuels that remained after the 1994 modeled fires.

Some initial attack efforts would not have been necessary if previous lightning-ignited wildfires had been allowed to burn. These ignitions fell on non-burnable areas created by earlier fires.



Modeling suggests that the 2000 Bug ignition would have grown to ~725 ha.

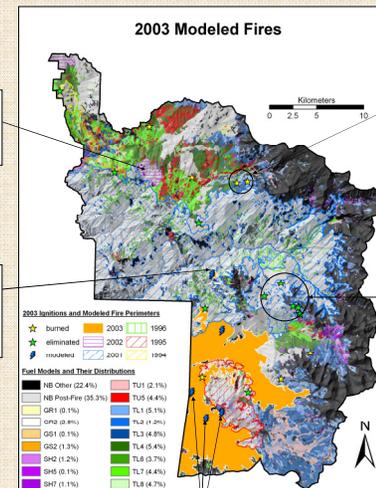
1994 fires would have impacted Bug's spread, halting its expansion to the southwest.

Other suppressed wildfire ignitions would fall in areas of isolated or sparse fuels if prior fires had been allowed to burn.

## Upper Kaweah Watershed, Sequoia-Kings Canyon National Park

The southwest spread of this 2002 ignition was blocked by the impacts of a 2001 modeled fire.

The simulated spread of the 2003 Buckeye ignition was limited to ~31 ha because of the 2001 modeled fires.

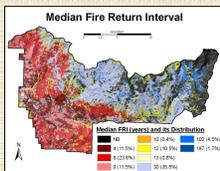


Had earlier fires been allowed to burn, the decision to suppress these ignitions may not have been necessary.

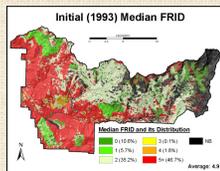
Some initial attack efforts would not have been necessary if previous lightning-ignited wildfires had been allowed to burn. These ignitions fell on fuel limited areas created by earlier fires.

1995 fires would have slowed the eastward spread of the 2003 fires.

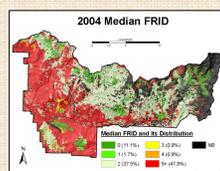
Fire Return Interval Departure (FRID) is one way to describe deviation from natural conditions. The FRID that would have resulted had these ignitions been allowed to burn was compared to what actually resulted as a consequence of their suppression. Even within the short 11 year period simulated, we found that the impacts on FRID are substantial:



The median time between successive fires in a natural fire regime. Based on vegetation classification.



The number of Fire Return Intervals missed as of 1993. Based on the time since last fire.



2004 FRID from actual fire history. Nearly 50% of the burnable area falls into the 5+ category.

