Fuel treatment effectiveness over 10 years in California forests

Alicia Reiner[A,G], *Nicole Vaillant*[B], *Erin Noonan-Wright*[C], *Carol Ewell*[D], *Scott Dailey*[E] *and Jo Ann Fites-Kaufman*[F]

[A]USDA Forest Service, Adaptive Management Services Enterprise Team, 631 Coyote Street, CA 95959.
[B]USDA Forest Service, Pacific Northwest Research Station, Western Wildland Environmental Threat Assessment Center, 3160 NE Third Street, Prineville, OR 97754, nvaillant@fs.fed.us
[C]USDA Forest Service, Wildland Fire Management Research Development and Applications, 765 Hwy 10 West, Missoula, MT 59808, enoonan02@fs.fed.us
[D]USDA Forest Service, Adaptive Management Services Enterprise Team, 19777 Greenley Rd., Sonora, CA 95370, cewell@fs.fed.us
[E]USDA Forest Service, Adaptive Management Services Enterprise Team, 10811 Stockrest Springs Road, Truckee, CA 96161, scottdailey@fs.fed.us
[F]USDA Forest Service, Pacific Southwest Regional Office, 1323 Club Drive, Vallejo, CA 94592, jfiteskaufman@fs.fed.us
[G]Corresponding author. Email: alreiner@fs.fed.us

Abstract: Longevity of fuel treatment effectiveness to alter potential fire behavior is a crucial question for managers preparing plans for fuel hazard reduction, prescribed burning, fire management, forest thinning, and other land management activities. Results from this study will help to reduce uncertainty associated with plan prioritization and maintenance activities. From 2001 to 2006, permanent plots were established in areas planned for hazardous fuel reduction treatments across 14 National Forests in California. Treatments included prescribed fire and mechanical methods. After treatment, plots were re-measured at various intervals up to 10 years post-treatment. Very few empirically based studies exist with data beyond the first couple of years past treatment, and none span the breadth of California's coniferous forests. With the data gathered, this research aimed to meet three main objectives: 1) Determine the length of time that fuel treatments are effective at maintaining goals of reduced fire behavior by measuring effects of treatments on canopy characteristics and surface fuel loads over time, and modeling potential fire behavior with custom fuel models; 2) Quantify the uncertainty associated with the use of standard and custom fuel models; and 3) Assess prescribed fire effects on carbon stocks and validate modeled outputs. Data collection continues.

Additional keywords: fuel loading, forest stand characteristics, fire behavior modeling, custom fuel models, carbon

Citation:

Reiner A, Vaillant N, Noonan-Wright E, Ewell C, Dailey S, Fites-Kaufman JA. 2014Fuel treatment effectiveness over 10 years in California forests. pg. 298 *in* Wade DD & Fox RL (Eds), Robinson ML (Comp) (2014) 'Proceedings of 4th Fire Behavior and Fuels Conference', 18-22 February 2013, Raleigh, NC and 1-4 July 2013, St. Petersburg, Russia. (International Association of Wildland Fire: Missoula, MT)