Wildland Fire Risk Assessment of Western Military Installations

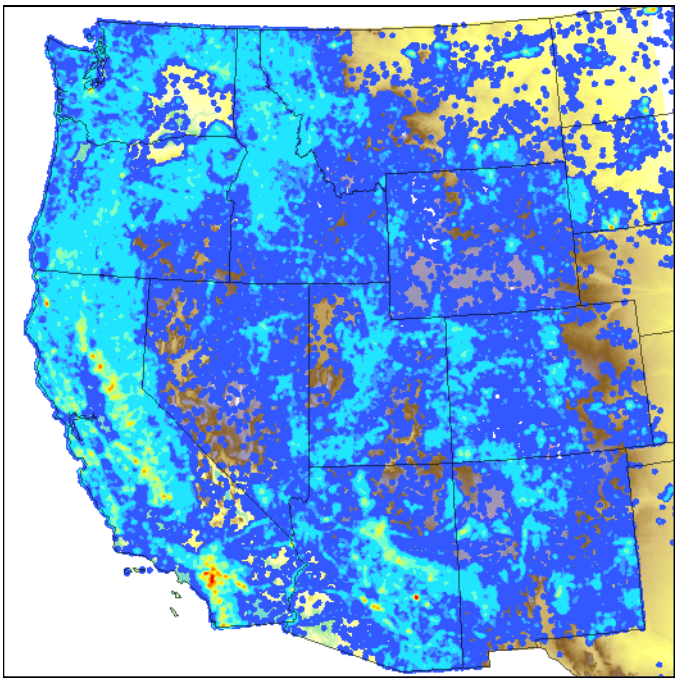
04-230

Background:

Wildland fires in the U.S. have grown in size and intensity in the past ten years, particularly in the West. The causes of this trend are complex and varied, but the result is a new era of large-scale, high severity fires threatening people, property, and natural resources. As a major landholder in the West, the U.S. Military has a vested interest in the future of wildland fire management. The complexities of firefighting on military installations present a situation in which pre-emptive management reaps considerable rewards relative to reactive emergency responses. However, funds to achieve objectives are limited and knowing where to focus pre-fire management is essential. To date, the DoD has not made a coordinated effort to address this issue. This study examined this critical gap from a strategic (Western U.S.) perspective, with emphasis on prioritizing installations based on their exposure to wildland fire risk.

Objective:

Our objective was to provide a ranked list of all sizable DoD installations in the western U.S. based on each installation's exposure to wildfire risk as well as eight input factors. We analyzed a total of 118 installations, all over 1,000 acres.



Ignition Index for the western United States based on all recorded fire starts in United States during the period 1986 to 1996.

Summary of Approach:

Wildfire risk is often defined as the hazard that vegetative fuels pose. This is correct, but incomplete. In fact, risk is comprised of three factors - the probability of an event occurring, the possible severity of the event, and the potential for losses. In the case of wildfire, these can be defined as ignitions, hazards, and values. Thus, fuels are but one aspect of risk. We included estimations of ignitions; fuels, climate, topography, obstructions to fire progress, firefighter access (hazards); and infrastructure, erosion, and rare species (values) to estimate the risk wildfire poses. Each of these estimates originated from national scale data and was processed to achieve indices which can be compared.

Benefit:

Funding for fire management, or any program, is limited and efficient disbursement is key to maximizing returns. By ranking installations throughout the western U.S., information is available to more judiciously apply funds to those installations in greatest need.

Accomplishments:

The strength of this study is its comprehensive nature. Installations are ranked based on equal criteria across the region. Therefore, 'flagship' installations are not the only ones ranked highly. This project determined installations most at risk occur in the Southwest and California, almost without exception. The reasons for these results are only partly attributable to the fuels situation, however, as high resource values are also a major factor. Many installations throughout the West have severe fuel buildups, but only those installations with a combination of risk factors are at highest risk.

In order to facilitate decision-making, a secondary product ranks all of the installations for each of eight inputs as well as each of the three major components of risk – ignition, hazard, and value.

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