

Managing Hurricane Impacts on Wild Fire Fuel Loads in Southern US Forests

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In 2005, hurricanes damaged five million acres of southern forest lands and destroyed almost 20 billion board feet of timber. Most of this low value wood will not be salvaged, but left to decompose where it fell. For the next several years, this debris will pose a significant risk as a potential source of wild fire fuel. NOAA climate models suggest that the current meteorological cycle will cause increased annual hurricane frequency for 15 to 20 years, so additional increases in fuel loads are likely across the region. Forest hurricane clean-up is expensive and time consuming. Land managers need accurate information regarding the location of hurricane-caused forest damage and management options for reducing forest damage risk due to future hurricanes. This paper examines climatic, management, and tree species conditions that affect the severity of hurricane impacts to southern US forests by overlaying maps of hurricane damage from hurricanes Katrina and Rita with USDA Forest Service inventory data. Our analysis considers tree species, stand age, stocking level, basal area, crown class, elevation, slope, soil saturation, and past disturbance events, and examines where and how these factors have predisposed forest stands to past hurricane damage and mortality. Climate scientists predict that global warming will increase hurricane intensity by approximately 20 percent in the coming decades. This paper presents alternative climate and forest management scenarios to investigate how forest damage and subsequent wild fire risk could change in the coming 20 years.

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