**NASA DEVELOP National Program**

**** NASA John C. Stennis Space Center

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**Texas Disasters**

**Updated Abstract**

In recent years, the risk of severe wildfires has been increasing due to weather phenomena such as sequences of wet and drought years and recent urban expansion into wilderness areas that are vulnerable to wildfire. The Texas Forest Service is tasked with estimating and evaluating potential fire risk in order to manage and allocate resources for the prevention and containment of possible wildfires across the varied and dynamic Texas landscape. Some of the main components for assessing fire risk is understanding vegetative fuel types and fuel loads. NASA Earth Observations provide a platform for evaluating wildfire fuel across a large temporal and spatial scales. MODIS and Landsat OLI were used to calculate vegetation indices such as NDVI and EVI and produce fuel type and fuel load maps. The relative strengths of two satellite sensors were combined so that the temporal advantages of MODIS were applied to Landsat data, and the spatial advantages of Landsat were applied to MODIS data. This technique resulted in fuel maps that are more current and updatable than the products derived only from Landsat data. Fuel maps were created for the 2010-2011 fire season, which saw some of the worst wildfires in recent history, and for the 2014-2015 season to provide a current assessment of wildfire fuels. The Texas Forest Service will utilize these products in order to better understand and evaluate wildfire risks throughout the state.