



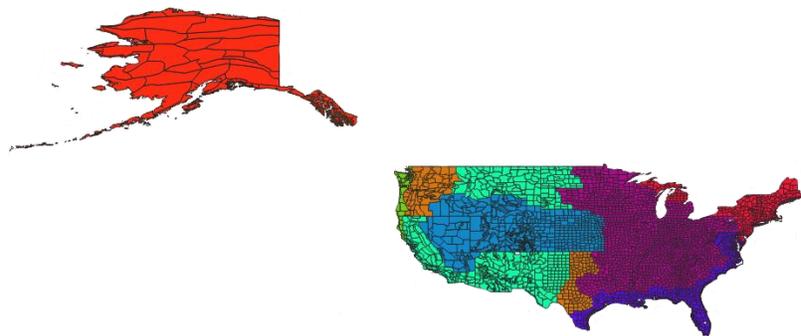
INVESTIGATING THE WEATHER CONDITIONS NEAR WILDFIRES

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Each year wildland fires across the United States impact recreational land use, urban structures, and the safety of wildland firefighters. Understanding the weather surrounding wildfires is vital to preventing dangers associated with them and can be useful in developing effective ways to combat wildfires. Currently fire weather forecasters provide detailed weather information to support wildland firefighting operations with research underway to improve those forecasts. The objective of this project is to improve understanding of fire weather conditions by collecting and analyzing weather data near wildfires and how weather conditions affect fire behavior. A particular focus has been to investigate two local fires in Utah: (1) the Trail Mountain Fire, which started after a prescribed burn in central Utah escaped containment due to unexpected high winds and (2) the Dollar Ridge Fire, which accounted for the loss of over 70 structures and 56,000 acres of burned land near Strawberry Reservoir.

Another major goal of the project is to help advance web applications that can potentially be used to assist firefighting operations by displaying the geographic locations in which red flag conditions are occurring. Red flag conditions are the weather and fuel conditions that may increase the potential for a wildfire to start or for wildfires to experience significant growth. In order to update the web application, current fire weather operation plans developed by U.S. federal agencies were referenced. The varying red flag criteria across the U.S. were documented and compiled into an interactive QGIS map that could be transitioned into web applications that display current weather conditions and map areas that are experiencing red flag warning criteria.

Region	RH	20' Winds
Northern Rockies		
California	<=15%	>=20mph
Southwest		
Great Basin		
Rocky Mountains	<=15%	>=25mph
Inland Northwest		
Central Texas	<=20%	>=15mph
Alaska	<=25%	>=15mph
Southern Coast	<=25%	>=20mph
Inland South		
Great Lakes	<=25%	>=15mph
Northwest Coast	<=30%	>=15mph
New England	<=30%	>=25mph



QGIS Red Flag map with criteria legend.