Predicting Wildfire Behavior
Burning Risk Advisory Support System

BRASS provides the capability to predict wildfire behavior. It combines two state-of-the-art simulation models, and generates predicted burn areas from a point of ignition.
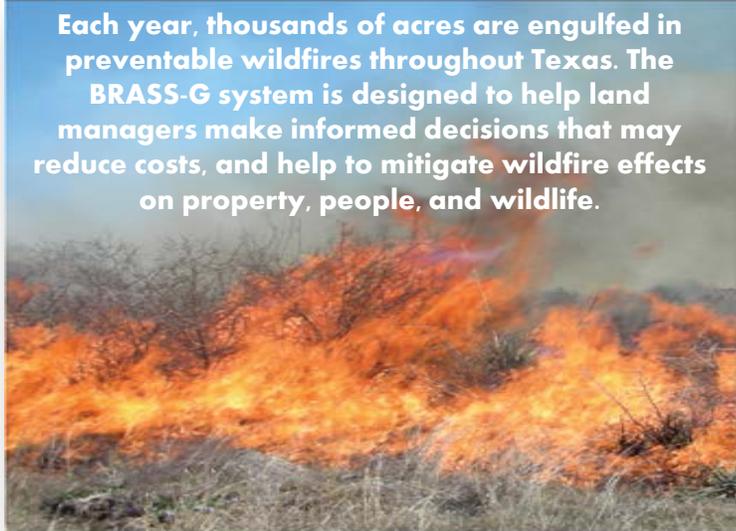
Gain a Strategic Advantage

Increase Efficiency:
- Increase awareness of fire-prone areas
- Determine where fire prevention projects are most needed
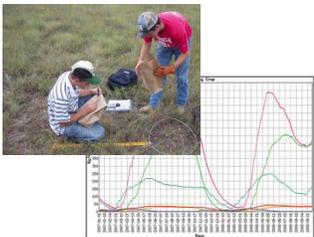- Decrease mobilization time for firefighters

Increase Safety:
- Determine how to best control a fire using fire behavior data
- Evacuate persons and properties in the path of a fire
- Strategically place fire fighters where they can be the most effective

Each year, thousands of acres are engulfed in preventable wildfires throughout Texas. The BRASS-G system is designed to help land managers make informed decisions that may reduce costs, and help to mitigate wildfire effects on property, people, and wildlife.
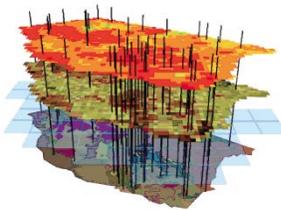
BRASS-G Modeling

Created in 2005, the BRASS system has been implemented on three US National Forests, as well as Fort Hood. The system is broken into two basic components:

1.) PHYGROW is a near-real time plant growth model that is updated daily; utilizing current and historical weather data from the National Oceanic and Atmospheric Administration (NOAA). The PHYGROW model is a highly respected vegetation growth model currently established in six foreign countries and eight US states.

2.) PHYRESIM is a burning risk model created by CNRIT through a derivation of two US Forest service models that has been specifically designed to work with vegetation outputs from PHYGROW.

PHYGROW Vegetation Monitoring

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Spatial Layers of PHYRESIM

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A fire-spread map from BRASS-G. Lines represent 30-min increments.

BRASS-MIL: Burning Risk Advisory Support System for Military Training Lands

- The BRASS-MIL system is designed to complement existing technologies in the Control Room. Working in conjunction with the Graphic Fire Desk (GFD), it produces a seamless process for visualization of fire spread down range.
- This technology parallels the Range Facility Management Support System (RFMSS) to assist in determining which active ranges are affected by fire and evacuees.

BRASS-G: Burning Risk Advisory Support System for Grass Lands

- The BRASS-G system is designed to provide the necessary data for local governments and private landowners to make better-informed fire management decisions, and to assist in the efficient mobilization of fire-fighting resources.

Product Delivery

- Fire conditions can be accessed via the Web to assist controlled burn crews, fire fighters, and other stakeholders in the fire management process.
- BRASS produces near real time data for vegetation production, animal grazing, fire spread rates, fire intensity, flame length, and burn areas at 30-minute intervals.
- The BRASS system is an invaluable tool for wildfire prevention, and prescribed burn planning, alike.
- Additional rangeland information such as drought prediction and historical rankings can be delivered via the Web.

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