

Research Projects

Burn Severity Mapping Using Simulation Modeling and Satellite Imagery - Satellite image-based burn maps can be quickly generated to provide a landscape view of relative fire severity, while fire effects simulation models provide biotic context to the effects of the burn.

Canopy Fuel and Tree Biomass Data - This data set contains destructively sampled canopy fuel and tree biomass data from five study sites in the Interior West.

Climet FireBGCv2 Simulation Design - The FireBGCv2 simulations for completion of the CLIMET project are structured to assess the differences between weather and fire regimes on characteristics of six watersheds (i.e., landscapes) across three National Parks in the Pacific Northwest, USA.

Communicating Forest Management Science through Visualized, Animated Media Presentations - This study examined the effectiveness of using computer visualization and animation to share results of vegetation change and fire spread models with the public.

Crown Fuel Variability and Surface Fire - In this project we use a physics based numerical fire behavior model, FIRETEC, to assess the impact of spatial variability in tree crowns on surface fire behavior.

Fire management tools: EMDS (Ecosystem Management Decision Support) - A decision making model was developed for the Pacific Northwest to identify Region wide fire hazards and prioritize fuels treatments.

Firefighter Safety Zones - A safety zone is a preplanned area of sufficient size and location that provides freedom from danger, risk, or injury to fire personnel from a fire without the needed protection of fire shelters.

FIREHARM - A computer program is being developed to describe fire hazard and risk across landscapes for fuel treatment prioritization and implementation.

FireStem - computer model designed to aid fire managers in predicting tree mortality based on fire behavior and intensity.

FIREWORKS - Effectiveness of Hands-on Education in Fire Science. This research examined changes in understanding that followed use of hands-on learning activities about wildland fire.

FLEAT A software platform is being evaluated that estimates the ecological benefits and drawbacks of a wildfire using a simulation of fire severity that is then used to determine departure from historical landscape conditions.

FUELDIST - A ten year study to estimate litterfall and decomposition rates of forest fuels after major stand-replacement disturbances in the Northern Rocky Mountains to predict changes in fire hazard and risk.

Fuel3-D - is designed to both facilitate fundamental fuel and fire science research and to provide detailed guidance to managers in the design and evaluation of fuel treatments.

FUELVAR - This study explores the variability of a number of fuel characteristics across major fuel components that comprise northern Rocky Mountain forest fuelbeds to describe, model, and map fuels for fire behavior and effects prediction.

iMast - The primary objective: to investigate the effects of masticated fuels on various ecosystem processes and characteristics

Real-time Satellite Observations - The RMRS Fire Sciences Laboratory is developing advanced methods and instrumentation for measurements of smoke particulates in real-time.

Remote Sensing Fire Chemistry - The Remote Sensing Lab is using data collected from the Terra and Aqua satellites. Data is collected up to twelve times daily as the satellites pass within our view.

Restoring Whitebark Pine Ecosystems - The goal of this study is to identify methods that increase regeneration success

and promote vigorous growth of whitebark pine stands.

Synthesis of Old Growth Prescribed Burning - This project will synthesize the literature and current state of knowledge of burning duff mounds and the impact on tree mortality.

Thermal Imaging Research - The Fire Chemistry group is interested in the remote sensing and prediction of emissions from wildland fires.

Utah Fire History - Fire regimes forest structure of Utah; eastern Nevada: A multi-scale history from tree rings.

Wildland-Urban Fire Research - Wildland-urban ignition research indicates that a home's characteristics and the area immediately surrounding a home within 100 to 200 feet principally determine a home's ignition potential during a severe wildland fire.

Wind Wizard - Gridded wind is a method that can provide information about the effect of topography on local wind flow at the 100-300 ft scale.

WindNinja - A computer program that computes spatially varying wind fields for wildland fire application.