Enhancing Wildfire Preparedness: A Collaborative Approach

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Abstract

The primary goals of this project are to utilize a unique collaboration to identify high-risk areas susceptible to wildfires, enhance cooperation among stakeholders, and establish a monitoring and early warning system by analyzing vegetation life cycles through remote sensing and advanced geospatial techniques. Anticipated outcomes include reduced infrastructure damage and service disruptions during wildfires, improved public safety through timely information dissemination, strengthened collaborative efforts, increased community resilience through proactive measures, and enhanced operational efficiency in responding to evolving wildfire scenarios.

Methods
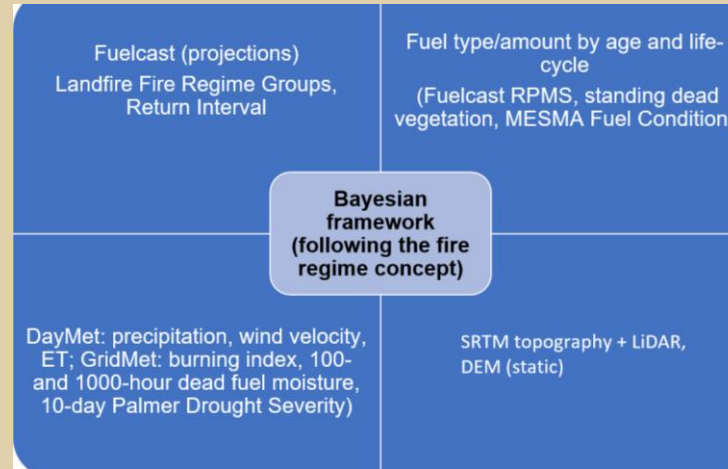
The project evaluates infrastructure vulnerabilities. It also involves creating a custom algorithm (VBI) to analyze vegetation life cycles using satellite data, spectral signature decomposition (MESMA), and machine learning techniques. This will result in a Bayesian predictive model to estimate the accumulation of dead vegetation that could be easily ignited.

Conclusions

Escalating wildfire risks in Southern California Edison's (SCE) service area require proactive strategies to safeguard infrastructure, ensure public safety, and minimize disruptions to energy distribution. This collaborative project between CIRES scientists and SCE stakeholders aims to enhance SCE's preparedness and response capabilities and minimize Public Safety Power Shutoffs (PSPS).

Collaborative efforts accelerate development and implementation of real-world solutions and contribute to more resilient communities and ecosystems.