

# Natural Hazards



SIG has completed wildfire assessments on large landscapes, including the area around the Lake Tahoe Basin, and other public and privately owned forested ownerships. In addition, SIG can model fire weather, determine risk of infrastructure to wildfire, and provide research expertise, expert witness, and other fire related science support. Below you will find a few representative projects to illustrate our recent work. Please visit the website for additional detail.



## WILDFIRE HAZARD, RISK, & VULNERABILITY ASSESSMENTS

- Community Wildfire Protection Plans, including quantifying wildfire hazard and risk via modeling WUI &- non WUI areas
- Visualize wildfire risk modeling and develop risk management strategies
- Model wildfire weather to address climate change and management scenarios, and assess current and future vulnerability to wildfire (FLAMMAP, FARSITE, and GRIDFIRE)

## EMISSIONS ASSESSMENT

- Landscape level forest management alternatives through collaborative planning, and develop Community Wildfire Protection Plans (CWPP's)
- Evaluate treatment strategies and develop evacuation plants
- Quantify carbon pools and assess vulnerability to wildfire

## FUELS & TREATMENT MODELING

- Wildfire fuels and treatment scenario modeling
- Assessment of fuels treatment strategies and placement optimization
- Evaluate wildfire risk management strategies

## FOREST INVENTORY & BIOMETRICS

- Design & implementation of vegetation and fuels inventory/monitoring
- Data management, analysis and summary of vegetation and fuels data
- Create vegetation visualizations and develop growth & yield models (FVS)

## WILDFIRE RESEARCH & POLICY ANALYSIS

- Literature review, hypothesis generation, experimental design, statistical data analysis, spatial data analysis, and report production
- Evaluation of current wildfire policy and scenario modeling of alternative wildfire policies

## WILDLIFE INVENTORY & VULNERABILITY ASSESSMENTS

- Habitat mapping & connectivity evaluation
- Wildlife inventory and monitoring development
- Response to land use change and climate change

### STAFF CONTACTS

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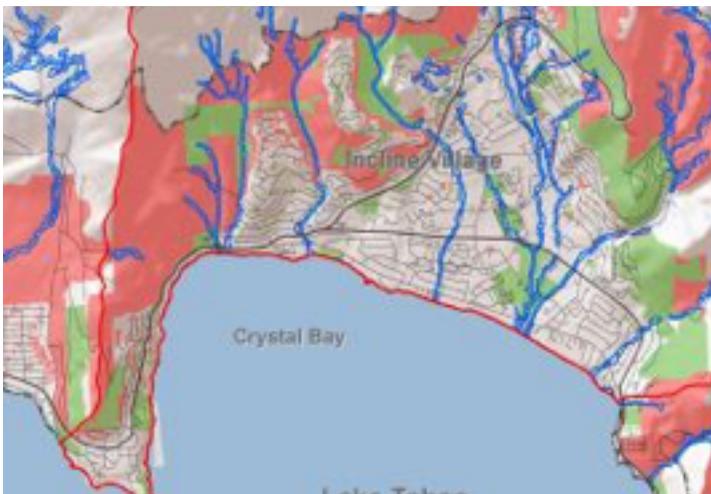
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## ASSESSMENT OF FIRE HAZARD/RISK IN THE WILDLAND URBAN INTERFACE (WUI) AND STREAM ENVIRONMENT ZONES (SEZS)

SIG analysts completed a fire hazard and risk assessment for the Pacific Southwest Research Station and The Tahoe Regional Planning Agency that encompassed the entire Lake Tahoe Basin. The analysis focus on potential fire behavior in Stream Environment Zones (SEZ's) and the wildland urban interface (WUI).

## INTEGRATED WILDLIFE ASSESSMENT PORTAL (IWAP)

In terms of public safety and protection of many goods and services, the most extreme fire hazard conditions are usually of greatest concern. Existing fire-related data products, however, do not account for a key mechanism causing the most severe conditions, especially, extreme wind events. Furthermore, fire hazard assessments are often performed without projections of how often a given location is expected to burn over the long term. SIG's IWAP is a geospatial tool that integrates 1) wildfire hazard (local fuels, topography, and weather conditions), 2) exposure of assets (structures, goods, and services) affected by wildfires, and 3) wildfire risk (return interval probabilities).

## DEVELOPING AN ANALYTICAL FRAMEWORK FOR QUANTIFYING GREENHOUSE GAS EMISSION REDUCTIONS FROM FOREST FUEL TREATMENT PROJECTS IN PLACER COUNTY, CALIFORNIA

Developed a methodology for The Pacific Southwest Research Station that uses scientifically based models for predicting changes in fire behavior and related emissions, in areas with and without hazardous fuels reduction treatments.



## EL DORADO COMMUNITY WILDFIRE PROTECTION PLAN

Spatial Informatics Group is working with the El Dorado County Fire Safe Council to develop a comprehensive Community Wildfire Protection Plan (CWPP) for the west slope of El Dorado County, California. The plan will be based on the results of a landscape scale community risk assessment and treatment prioritization strategy with emphasis on establishing logical fuel management areas that are integrated with the existin treatment network. Treatment projects will be designed to provide community protection at while estimating potential costs and provide communities with a standardized template to assist with funding and grant applications.