

# Human-caused wildfire ignition risk and potential spread modeling for informing public-safety power-shutoff events

Meredith G. L. Brown  
 ([merbrow@sandia.gov](mailto:merbrow@sandia.gov)),  
 Richard Garrett, Phil Kay

**Abstract**  
 Forecasting wildfire risk is typically done with respect to vegetation and weather conditions. However, 84% of wildfires are started by humans, either accidentally or intentionally. Past studies have sought to use human-relevant data to explain human-caused wildfire behavior, but not to forecast risk at a granular level (e.g., identifying specific potential causes). Such a forecasting capability, along with a model for the potential spread of wildfires that is informed by remote sensing data, can be used by utility companies, state and local municipalities, land/resource managers (USFS, BLM, etc.), or critical infrastructure owners to inform management and public safety actions.

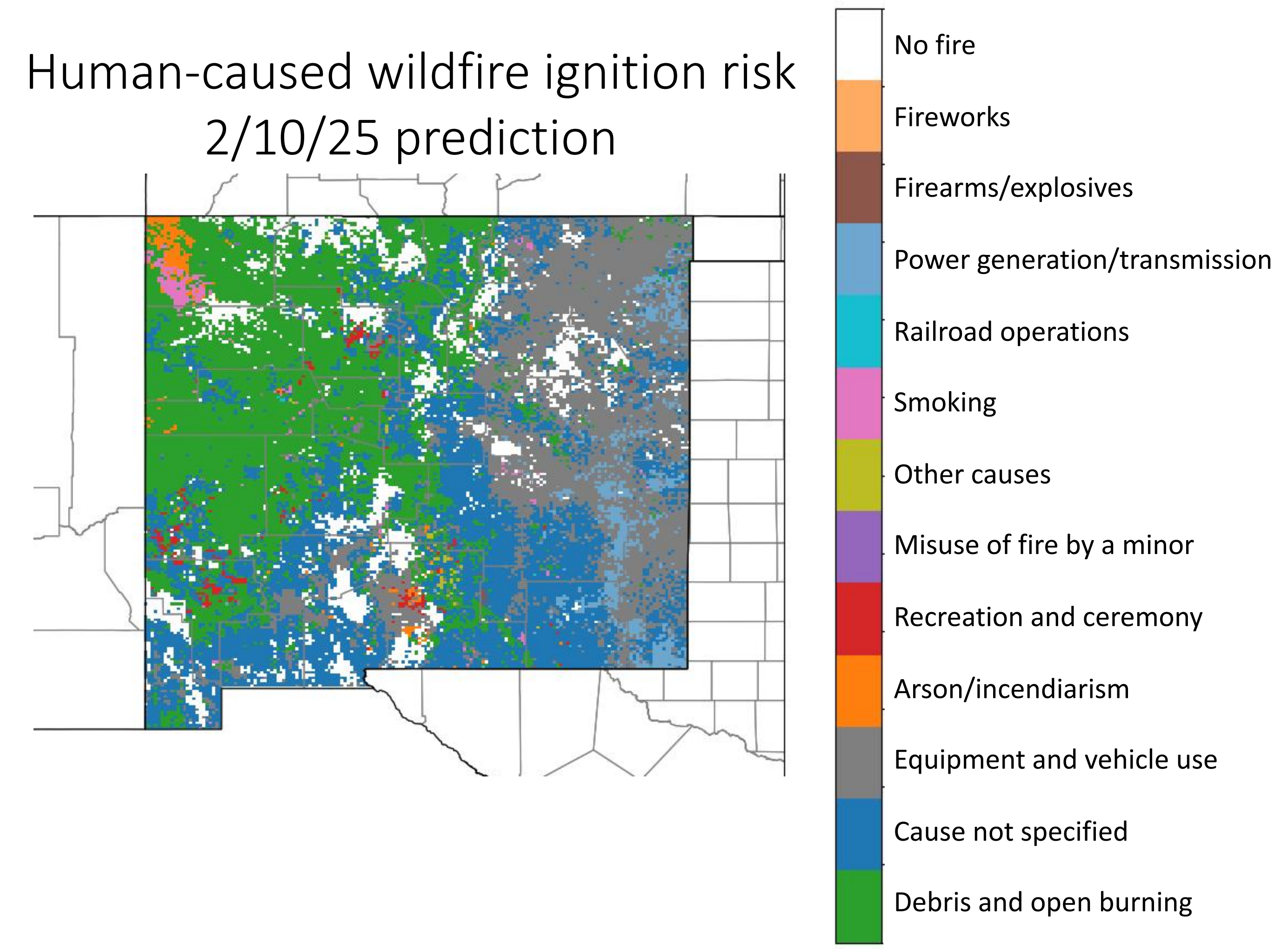
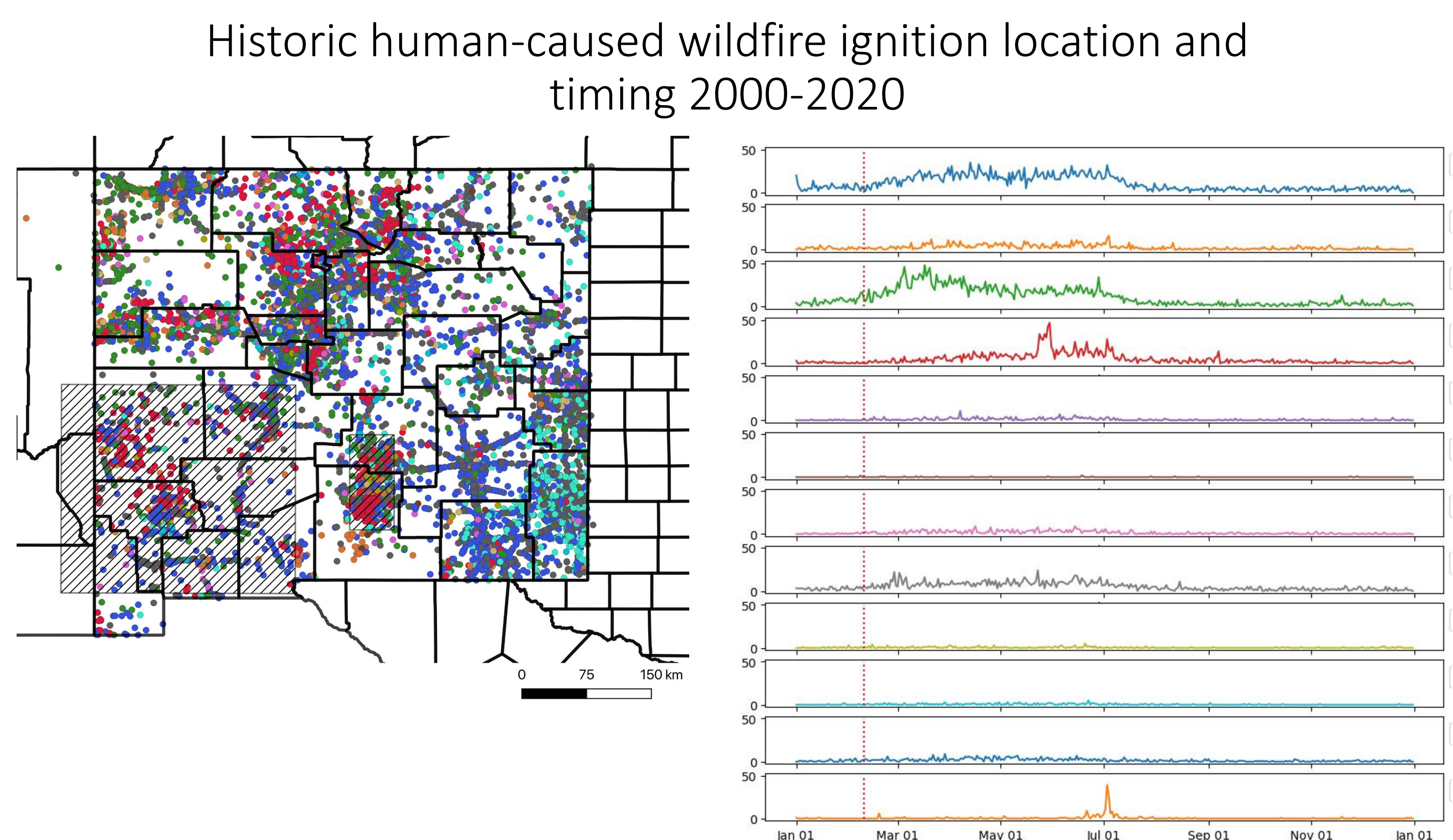
- Random Forest method to produce daily human-caused ignition risk map
- Pixel-based metric forecasts spread risk based on weather forecasts
- Developing maximal area wildfire spread model to predict near daily potential spread

Takeaways

- Risk maps provided to utilities to inform public safety power shutoff decisions
- Maximal area approach aims to improve on pixel based potential spread model

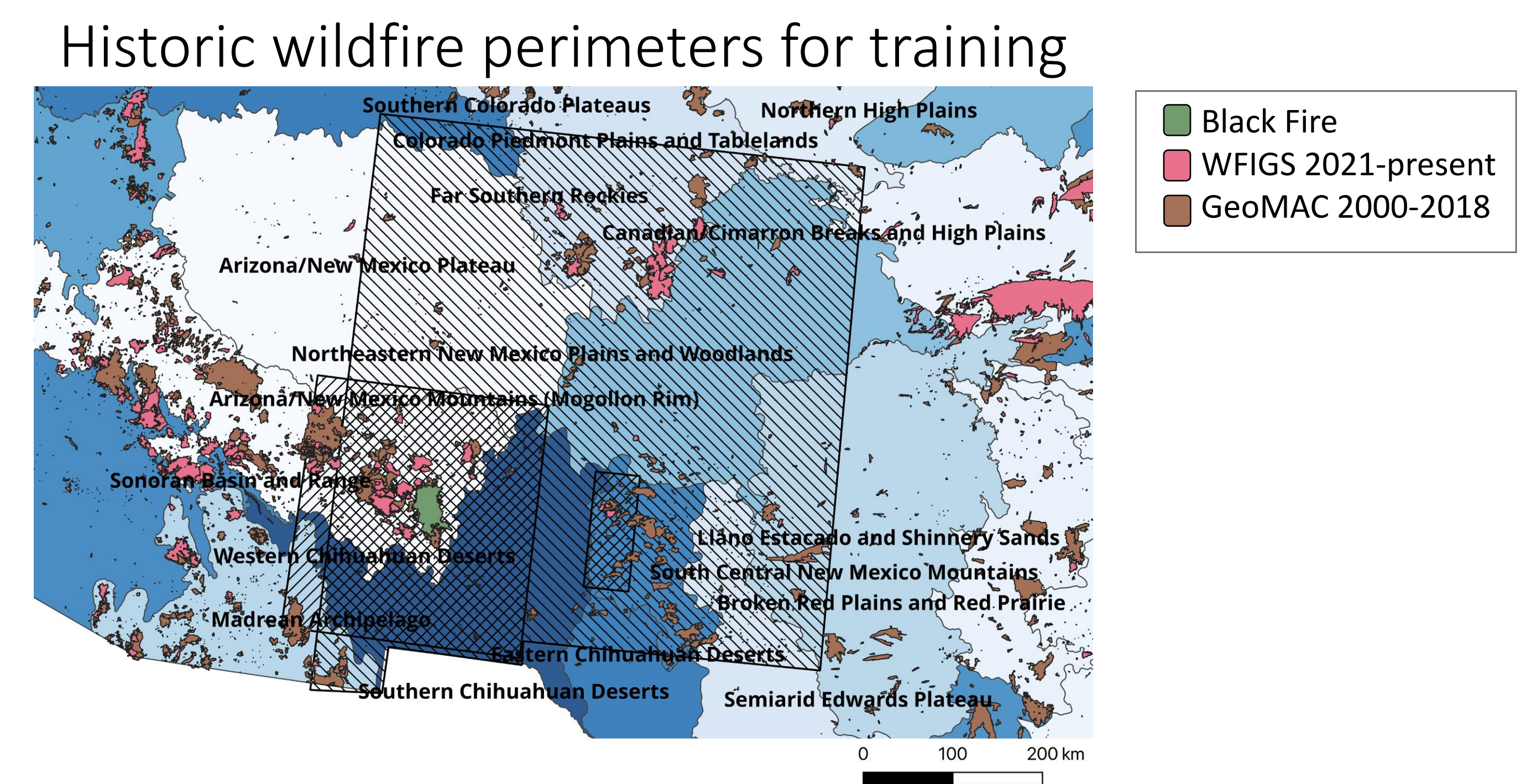
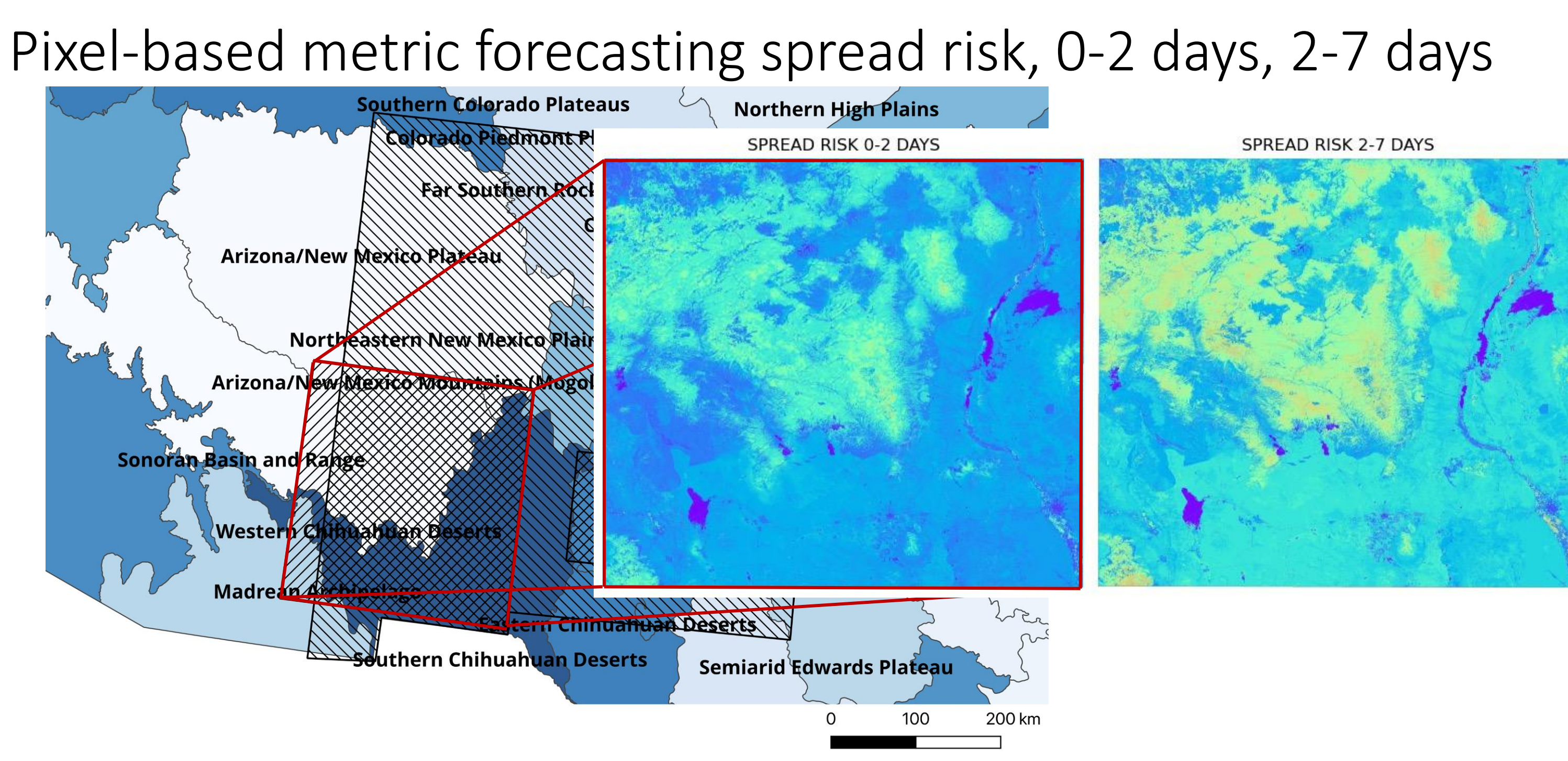
## 1 Human-caused wildfire ignition

## Map daily forecasted human-caused ignition risk



## 2 Wildfire potential spread

Goal: predict pixels around a wildfire at high risk of spread in following 12-24 hours



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 SAND No.: SAND2026-20728C