Open Source Next Generation Wildfire Models

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CPUC – Policy + Innovation Coordination Group

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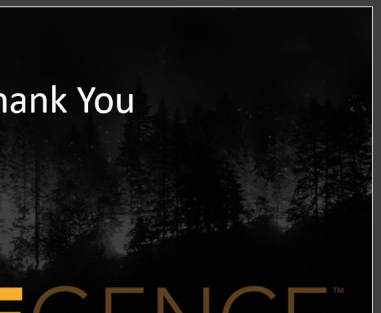
Free and open access to the next generation of wildfire risk models for grid resiliency

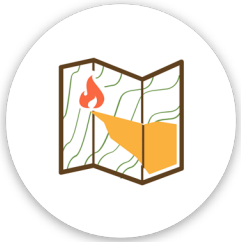


Research Collaborators

Collaborating across four workgroups

Spatial Informatics Group

PRINCIPAL INVESTIGATOR (PI) & PROJECT MANAGER (PM)

WG1	WG2	WG3	WG4
UCAR, USF	Berkeley, University of California	REAX Engineering	University of California Merced
			
EXTREME WEATHER	**FIRE BEHAVIOR**	**NEAR-TERM FORECAST TOOLS**	**LONG-TERM SCENARIO ANALYSES**
Janice Coen	**Scott Stephens**	**Chris Lautenberger**	**Leroy Westerling**

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Science → Models → Tools → Implement → Impact

FIRE BEHAVIOR

FORECAST TOOLS

ELECTRIC UTILITIES

NEXT GENERATION WILDFIRE MODELS

SAFE, RELIABLE, COST EFFECTIVE AND RESILIENT GRID

EXTREME WEATHER

SCENARIO ANALYSES

5TH CLIMATE CHANGE ASSESSMENT, CA

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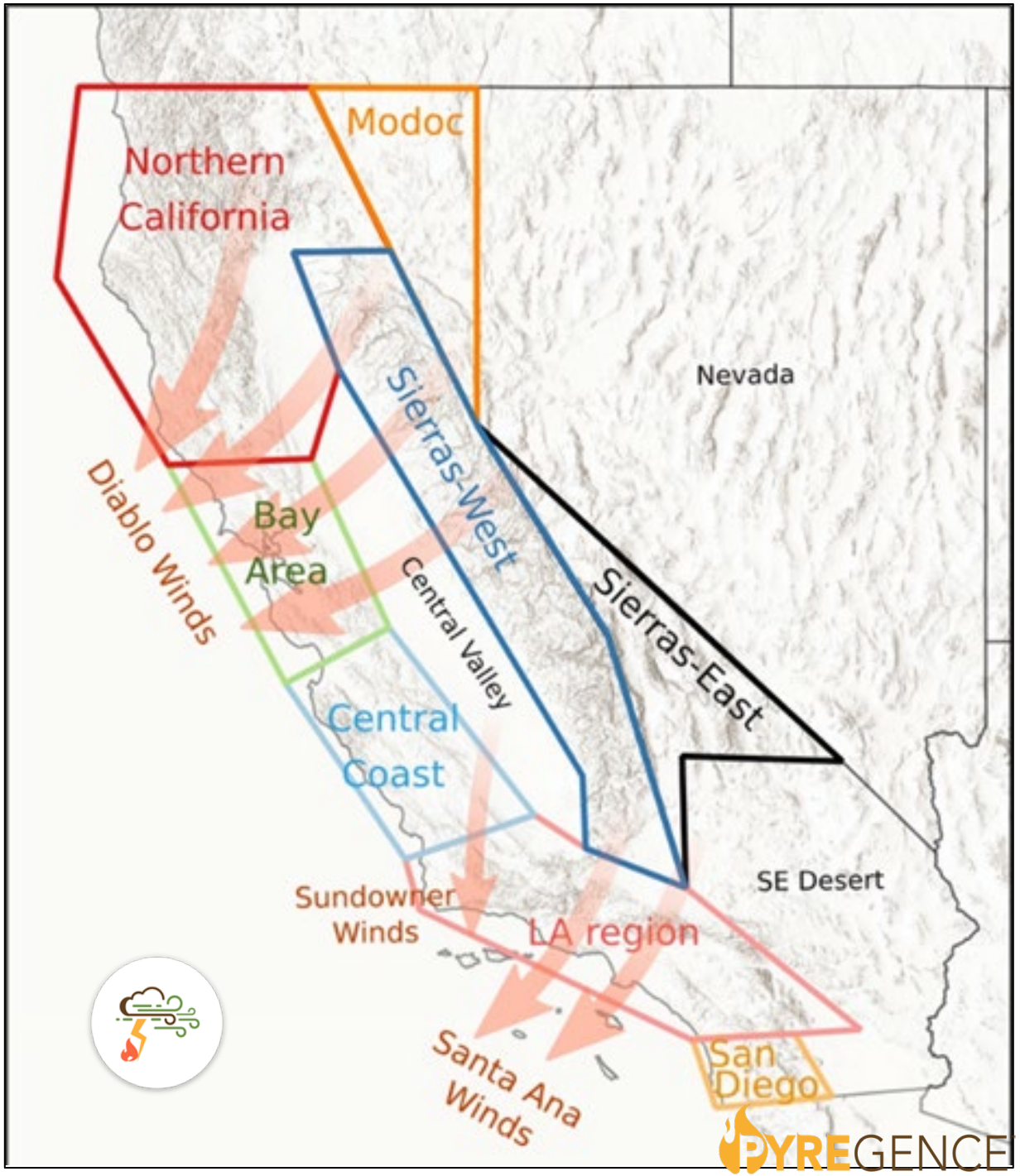
What have we learned from wildfire ignition and spread risk analysis from the fires in 2018, 2019 and 2020?

- Defined eight different fire weather regions.
- Rapid fire growth is episodic with most fire growth occurring on a few days.
- Identified 1-3 large-scale weather patterns per region that set the stage for rapid fire growth.
- Also used fine-scale weather modeling to understand the mechanisms that created past extreme fires and identify spots prone to exceptionally high winds that have been problematic to the utility grid.
- Will be investigating spread characteristics associated with 2020 fires.

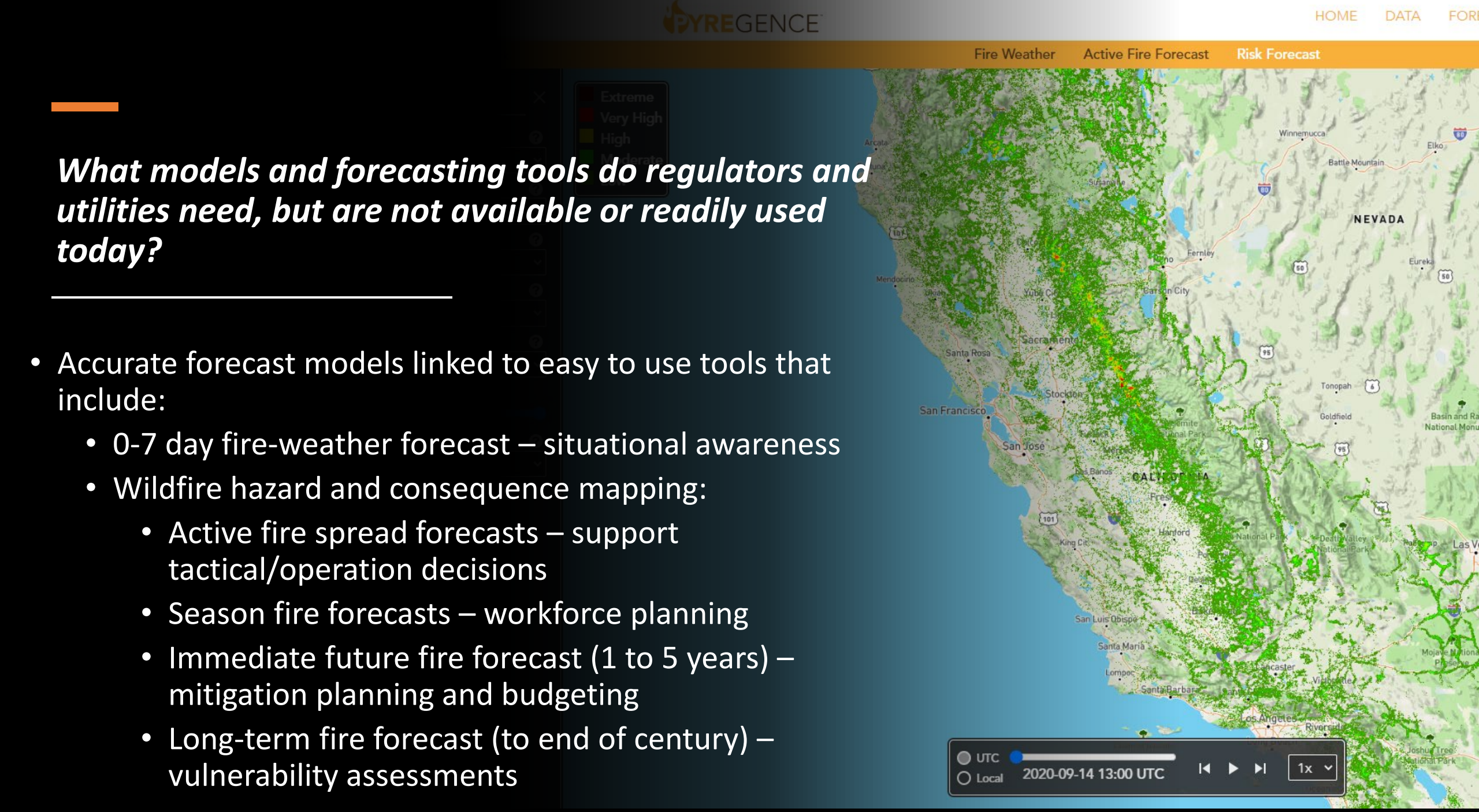


How are DACs and Low-Income community specific needs incorporated into wildfire modeling and management strategies?

- Developing improved near and long-term wildfire forecast models
- Including capability to assess potential wildfire consequences to utility assets, structures and communities (including DACs)
  - Wildfire damage
  - Air quality
- Free and open access to forecast tools

What models and forecasting tools do regulators and utilities need, but are not available or readily used today?

- Accurate forecast models linked to easy to use tools that include:
  - 0-7 day fire-weather forecast – situational awareness
  - Wildfire hazard and consequence mapping:
    - Active fire spread forecasts – support tactical/operation decisions
    - Season fire forecasts – workforce planning
    - Immediate future fire forecast (1 to 5 years) – mitigation planning and budgeting
    - Long-term fire forecast (to end of century) – vulnerability assessments



Thank You