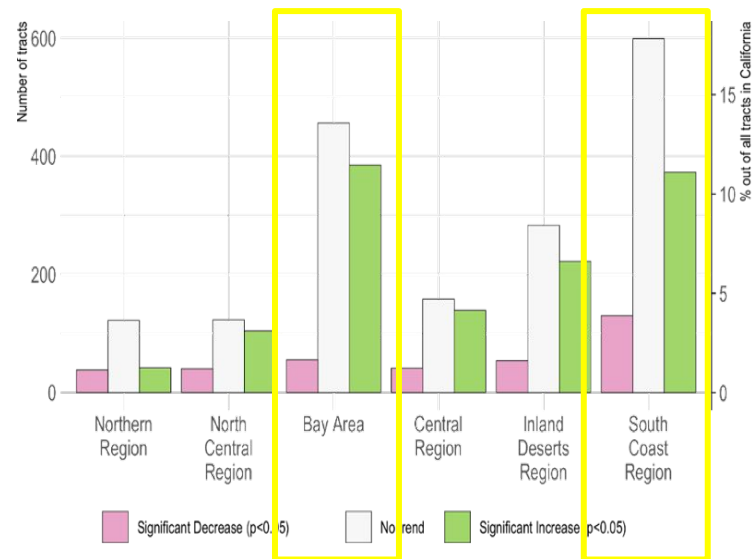
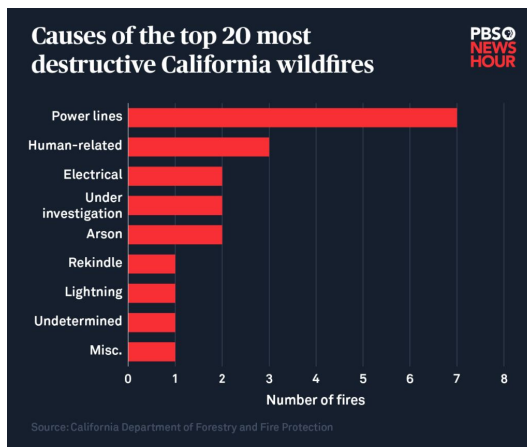
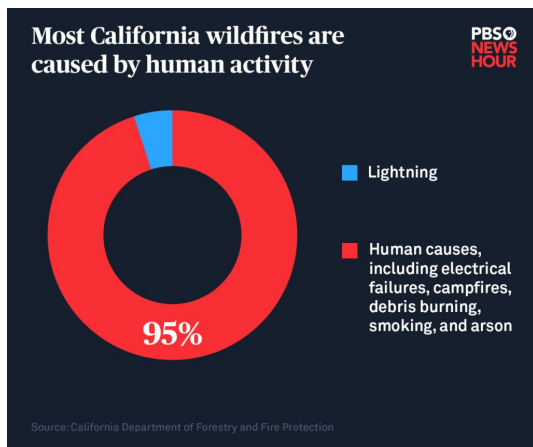


# **High spatial and temporal resolution census data reveal communities at risk along the wildland-urban interface (WUI) in California, USA**

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# Why does population increase inside WUI (high risk area of wildfires) matter?



# Project Description

Predict the **rate of population increase** from 2010 to 2019 in California at the census tract level based on

- Home values and home affordability (income, income to mortgage ratio)
- Demographic indicators (ethnic diversity, renting/owning ratio, etc.)

# Feature Dataset

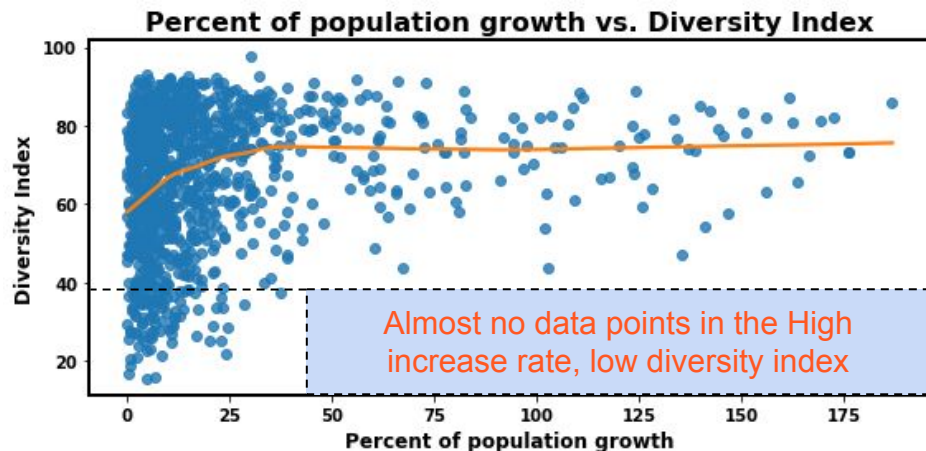
Feature Name	Description	Feature Name	Description
<b>House affordability index</b>	Derived based on income to mortgage ratio	<b>Median home value</b>	Median of home value inside a census tract
<b>Rent-own ratio</b>	# of residents renting vs. # residents owning	<b>Diversity index (DI)</b>	How ethnically diverse is a census tract (high DI, highly diverse)
<b>Wildfire hazard potential (WHP)</b>	Multi-year average of wildfire risk	<b>Per capita income</b>	Mean income for every person
<b>Wildfire risk to homes</b>	Multi-year average wildfire risk to homes and properties	<b>Median household income</b>	Median of household income inside a census tract

# Stakeholders

This analysis can be utilized by

- **Insurance companies** to decide the potential area for marketing as more people are now living in high-risk wildfire area
- **Emergency response agencies** to adjust responding plans to meet the needs of communities with a fast pace of population increase, especially those with high wildfire risk
- **Real-estate developers** to determine new developing projects
  - Option 1: develop in area where median home values are high to make more profit in a relatively competitive market
  - Option 2: develop multi-level apartment complex or condos in area where rent-own ratio is high
  - Option 3: develop in area (or purchase land) where homes are more affordable (high House Affordability Index) to meet needs in a currently less competitive, but with high potential of growth in the future

# Key findings



- Population increase tend to occur in more ethnically diverse area (upper figure)
- Median home values and per capita income are lower in more ethnically diverse area (right figures)

