

Political and Economic Drivers of Wildland-urban Interface (WUI) Development in California

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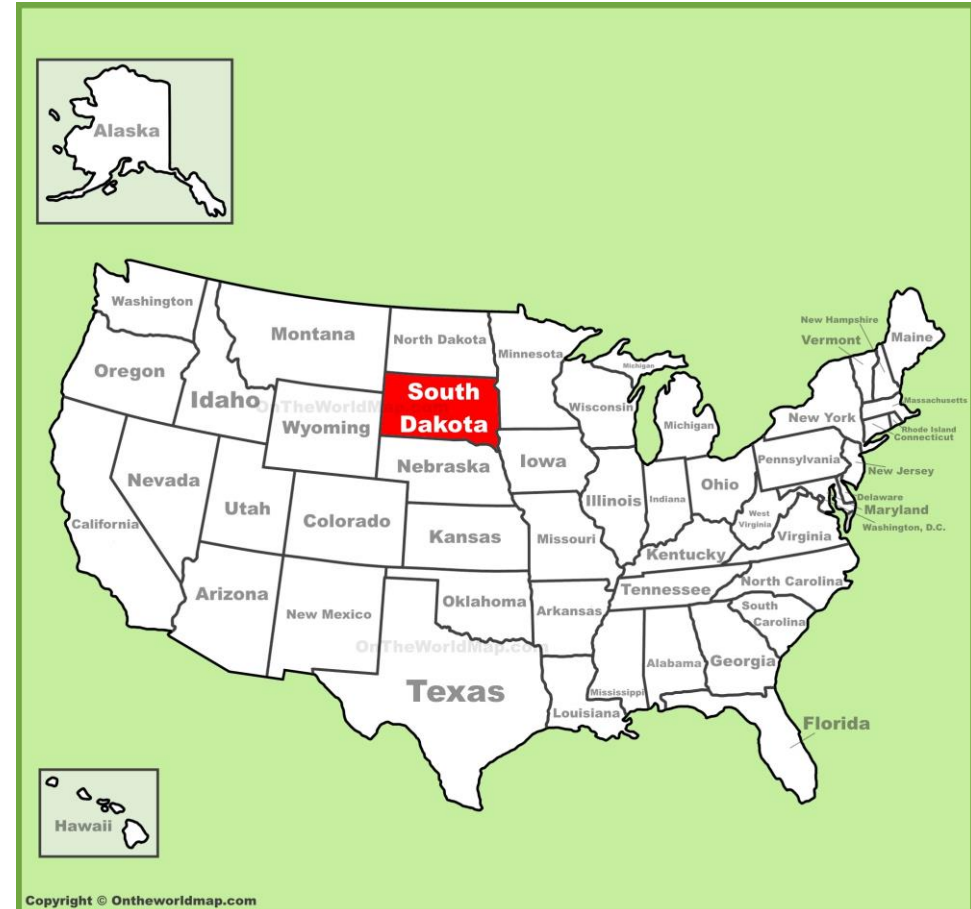
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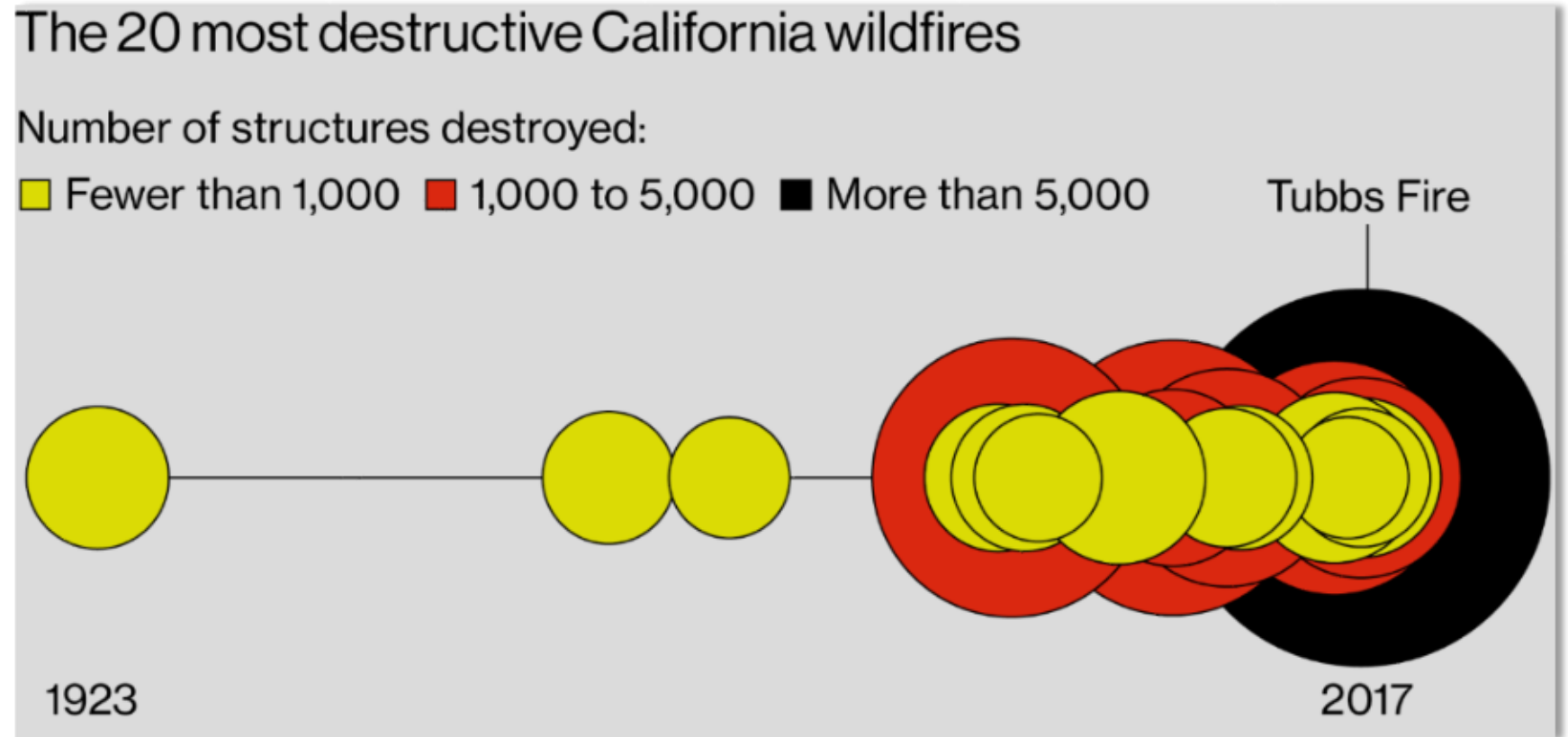
The Wildland-urban Interface: recent trends

- **Wildland–urban interface (WUI)**
 - the area where houses and wildland vegetation meet or intermingle¹
- **Fastest-growing land use type in the contiguous United States¹**
 - 12.6 million new houses since 1990 (41% increase)
 - WUI area increased from 189,000 km² (33%) between 1990-2010, or roughly the size of South Dakota



The Wildland-urban Interface: recent trends

In California, the increase in WUI has coincided with an increase in the frequency and magnitude of destructive wildfires



Most 'wildfires' are caused by humans

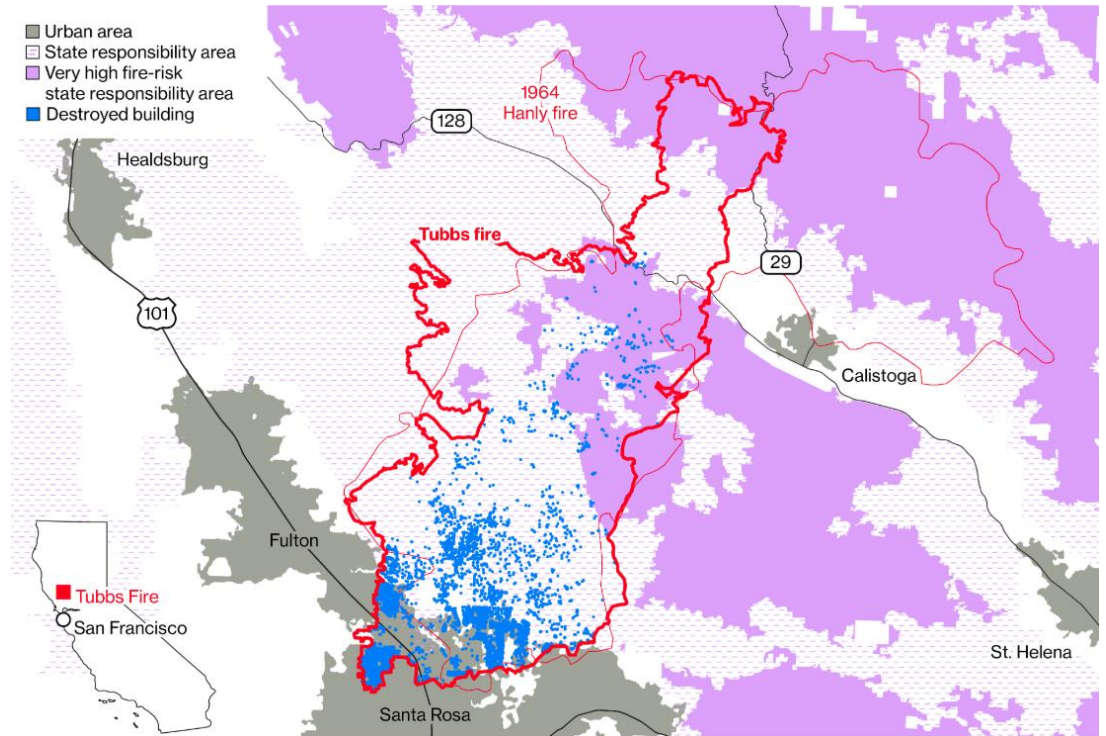
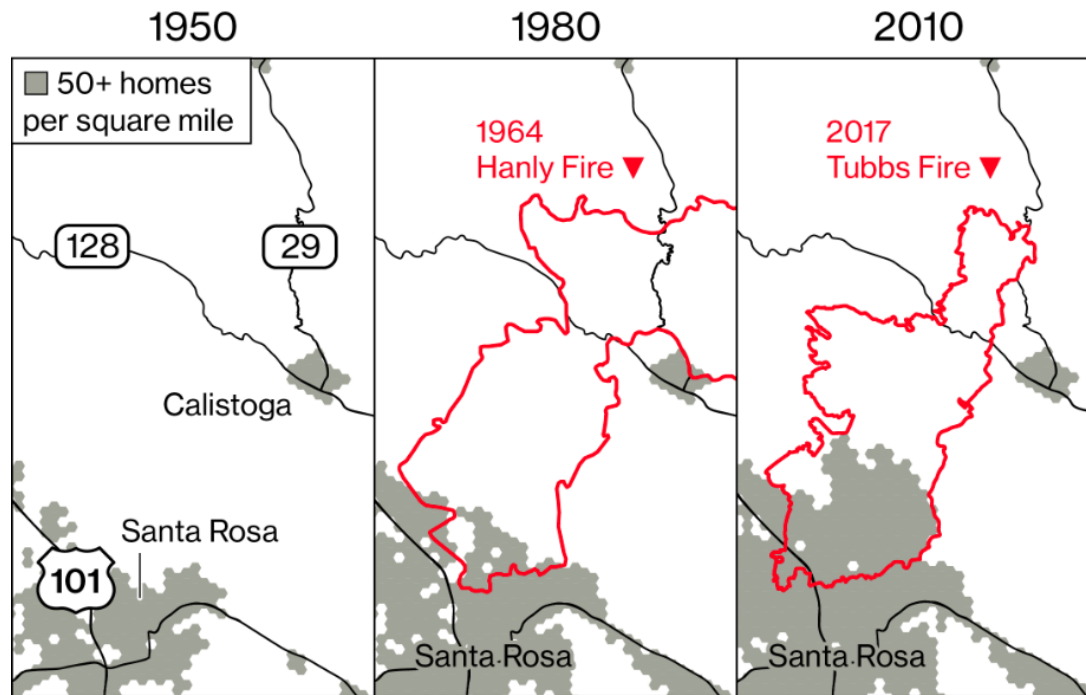
- Vehicle sparks
- Lawn mowers
- Faulty residential electrical connections
- Powerlines
- Target shooting
- Fireworks
- Cigarettes
- Debris burns
- Campfires
- Power equipment
- And Lightning

The more people live in flammable places with lots of vegetation, the more fires there are.

Growth of urban footprint in Sonoma County, CA

More Homes, More Fires

Housing density has increased in an area prone to wildfires.



Severe burns increase flooding risk

- Santa Barbara: deadly mud flows into urban areas due to both severity of the Thomas Fire burn and location of dwellings (burned 280,000 acres)
- 13 dead
- ½ in of rain in 5 minutes at times
- 101 artery shut down for a couple of weeks



Scene from Hot Springs Road in Montecito, CA following debris and mudflow due to heavy rain on Jan 9, 2017.

Source: Mike Eliason, Santa Barbara County Fire PIO

Wildfires and Stormwater Contamination

- Thomas Fire in Los Angeles National Forest
 - Burned an area that had not burned in decades
 - Historic deposition from air pollution – particularly copper, lead and zinc – mobilized in storm flows that then affect aquatic species and drinking water
- Mobilization of contaminants poses significant clean up issues in the debris basins and in drinking water³, and is rarely understood by the public

Wildfire and Flooding in the West

- Wildfire in the west is largely driven by human activities
 - The more people live in flammable places with lots of vegetation, the more fires there are.
- Climate change – more warming – will only exacerbate the possibility of ignition from human activities
- High precipitation events on burned lands cause floods that carry contaminated flows of water and mud
 - flooding hazards for adjacent urbanized areas
 - soil and water contamination
- **Yet, land development continues to be approved in the WUI.**

**Why do we keep building houses in
places that burn and flood?**

Policy and Land Use

- Land use is a local prerogative
- Since the post war period suburban development has predominated land use patterns
 - Plenty of land
 - Rise of merchant builders and lending infrastructure
 - Cheap gas and materials
 - Selling a way of life
 - White flight
 - Greenfield development easier



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LOOK FOR THE ARCH

Pressures to develop due to high costs of housing

- High costs of housing in CA => increased pressure to develop on the urban fringe and beyond
- While infill development is no more costly per square foot, the transaction costs can be very high and there is huge resistance to densification
- Full cost accounting is not conducted, so real cost of ex-urban development is rarely evaluated against that of infill where infrastructure already exists



Who benefits from WUI development?

- Home-owners
 - Affordability
 - Aesthetics
 - 'The American Dream'
- Local governments
 - In CA, Proposition 13 (1978) limits annual property tax increases
 - As such, local governments depend on the construction of more homes to boost revenue
 - The 340-home Esperanza Hills development in Orange County, CA (pictured right), will generate \$8.25 million a year in property taxes



Firefighters spray water on a burning home on Nov. 15, 2008 in Yorba Linda, California, during the Freeway Complex Fire. (Photo by Sandy Huffaker/Getty Images)

Risk is generalized to state and federal taxpayers, firefighters and insurance companies

- Building boom has expanded fire risk
- An estimated 1m new homes will be built in CA's high risk wildfire zones by 2050.
- FEMA spent **\$1.9b** on CA's 2017 wildfires in 2018
- **\$11.8b** in insurance claims were filed in CA for the Oct and Dec 2017 wildfires.
- Of the 3,000 buildings destroyed by wildfire between 1970 and 1999, **94%** were rebuilt in the same place².

Limitations to state influence over land use

- **State Responsibility Area Fire Prevention Fees**

- 2011 CA state legislature levied fee on people who live in 'state responsibility areas' zones outside of cities where state is responsible for fire fighting ~ \$150.00 ea.
- 800,000 households responsible for the fee protested – Governor scrapped it July 2017.

Limitations to state influence over land use

- **Sustainable Communities and Climate Protection Act of 2008 (SB 375)**
 - Requires regions to develop a "Sustainable Communities Strategy" (SCS) integrating transportation, land-use and housing policies to meet regional GHG reduction targets
 - SCS mandated by SB 375 are not required to be consistent with local General Plans, allowing WUI development to continue
 - “Net Zero Newhall” will involve the construction of 21,500 homes on previously undeveloped land in LA County’s urban periphery



Cycle of Destruction

- Allowing people to build in danger zones results in a predictable cycle of events
- ‘Perverse incentives’:
 - Financial benefits accrue to local governments while costs associated with fire protection are borne by state and federal taxpayers
 - Longer-term costs to communities – decreased home values, higher insurance costs, lost tax – are obscured



Conclusion

- Land use decisions continue to drive hazards for humans.
- Until land use zoning and planning change, these dangers will not abate.
- Landscape architects have an important role to play in planning and zoning decision making. While changing residential landscapes to be more fire resistant in the WUI will help, it is largely insufficient.
- Further, too often the vegetation prescribed by fire protection agencies is inappropriate to address the flammability issue and contributes to the proliferation of non native, flammable plant material.

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