



Extreme Wildfire Activity in California

LA Wildfires – Jan 2025



- Santa Ana winds “A high-speed river of air” with mountain gusts 70-90 mph
- No meaningful winter precipitation
- Two previous wet winters

Palisades Fire—CAL FIRE Flickr

LA Wildfires – Jan 2025



- Palisades + Eaton Fires:
 - 30 Fatalities
 - 16,251 Structures destroyed
- Pre-positioned assets prior to the fires: 110 engines & associated personnel
- Peak response
 - >16,000 personnel
 - >1490 engines
 - >80 aircraft

Palisades Fire—CAL FIRE Flickr



2020 FIRE SIEGE



2020 FIRE SIEGE



**CLAIMED THE LIVES OF
28 CIVILIANS
AND THREE FIREFIGHTERS**



**DESTROYED
9,248 STRUCTURES**



**CONSUMED
OVER 4.2 MILLION ACRES**

Camp Fire– November 2018



- 85 Fatalities
- 18,804 Structures Destroyed
- 153,000 acres
- Northern California, Sierra Nevada Foothills

Top 20 Largest California Wildfires



<i>FIRE NAME (CAUSE)</i>	<i>DATE</i>	<i>COUNTY</i>	<i>ACRES</i>	<i>STRUCTURES</i>	<i>DEATHS</i>
1 AUGUST COMPLEX (<i>Lightning</i>)	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1
2 DIXIE (<i>Powerlines</i>)	July 2021	Butte, Plumas, Lassen, Shasta & Tehama	963,309	1,311	1
3 MENDOCINO COMPLEX (<i>Human Related</i>)	July 2018	Colusa, Lake, Mendocino & Glenn	459,123	280	1
4 PARK FIRE (<i>Arson</i>)	July 2024	Butte, Plumas, Shasta & Tehama	429,603	709	0
5 SCU LIGHTNING COMPLEX (<i>Lightning</i>)	August 2020	Stanislaus, Santa Clara, Alameda, Contra Costa, & San Joaquin	396,625	225	0
6 CREEK (<i>Undetermined</i>)	September 2020	Fresno & Madera	379,895	858	0
7 LNU LIGHTNING COMPLEX (<i>Lightning / Arson</i>)	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
8 NORTH COMPLEX (<i>Lightning</i>)	August 2020	Butte, Plumas & Yuba	318,935	2,352	15
9 THOMAS (<i>Powerlines</i>)	December 2017	Ventura & Santa Barbara	281,893	1,060	2
10 CEDAR (<i>Human Related</i>)	October 2003	San Diego	273,246	2,820	15
11 RUSH (<i>Lightning</i>)	August 2012	Lassen	271,911 CA / 43,666 NV	0	0
12 RIM (<i>Human Related</i>)	August 2013	Tuolumne	257,314	112	0
13 ZACA (<i>Human Related</i>)	July 2007	Santa Barbara	240,207	1	0
14 CARR (<i>Human Related</i>)	July 2018	Shasta County & Trinity	229,651	1,614	8
15 MONUMENT (<i>Lightning</i>)	August 2021	Trinity	223,124	28	0
16 CALDOR (<i>Under Investigation</i>)	August 2021	Alpine, Amador, & El Dorado	221,835	1,005	1
17 MATILIJA (<i>Undetermined</i>)	September 1932	Ventura	220,000	0	0
18 RIVER COMPLEX (<i>Lightning</i>)	July 2021	Siskiyou & Trinity	199,359	122	0
19 WITCH (<i>Powerlines</i>)	October 2007	San Diego	197,990	1,650	2
20 KLAMATH THEATER COMPLEX (<i>Lightning</i>)	June 2008	Siskiyou	192,038	0	2

Air Quality Impacts



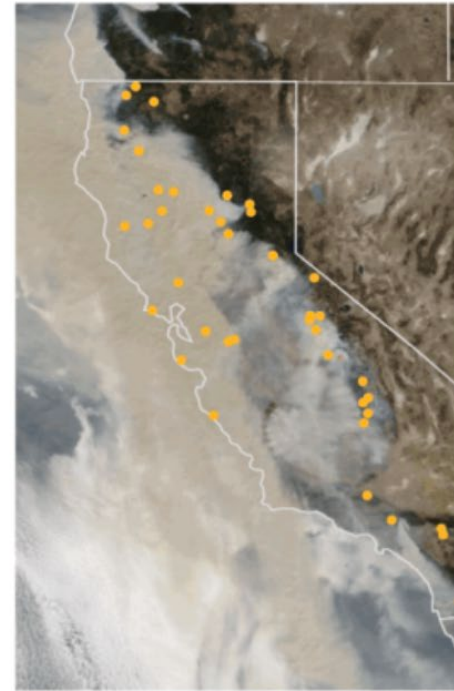
San Francisco, September 9, 2020 Credit: iStockPhoto

Smoke over California

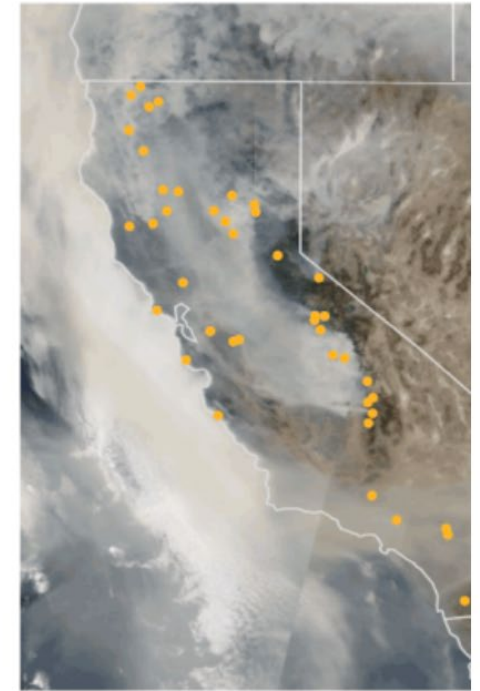
● = wildfire



Sep. 6, 2020



Sep. 8, 2020



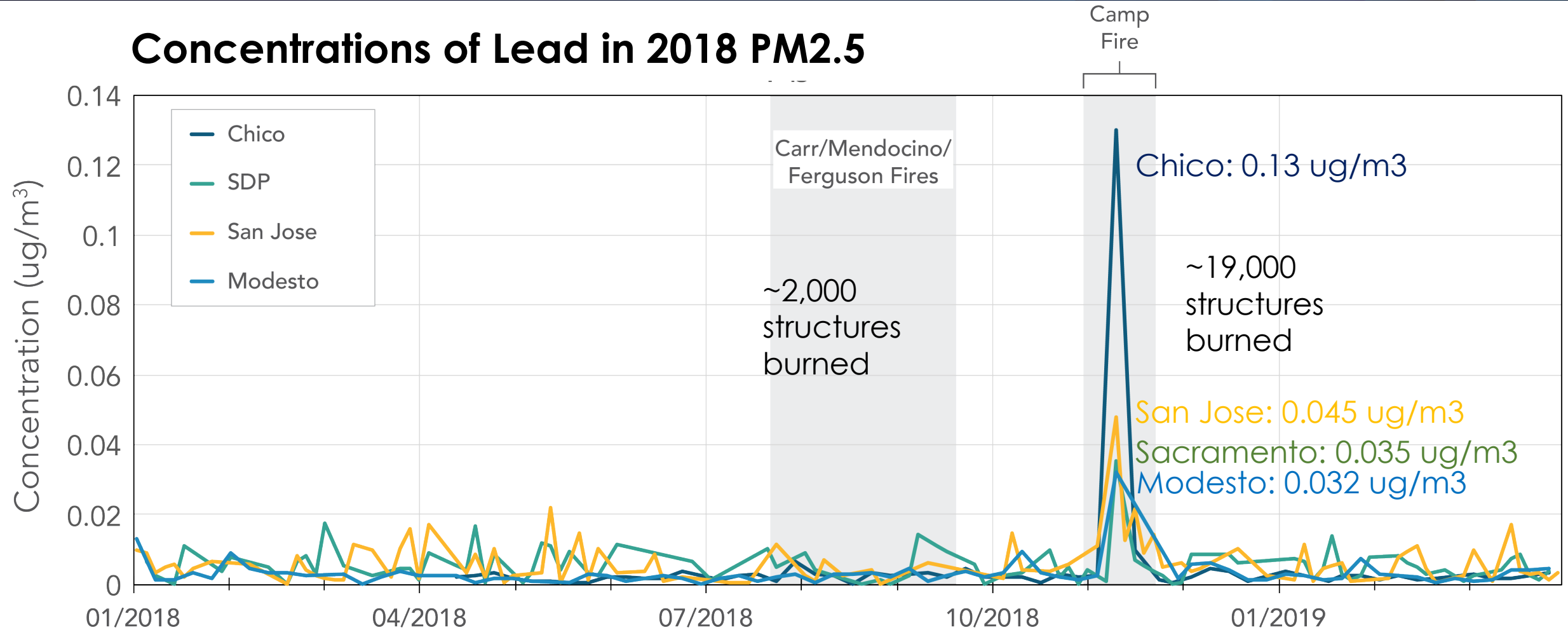
Sep. 12, 2020

(Swetha Kannan / Los Angeles Times)

Air Quality Impacts

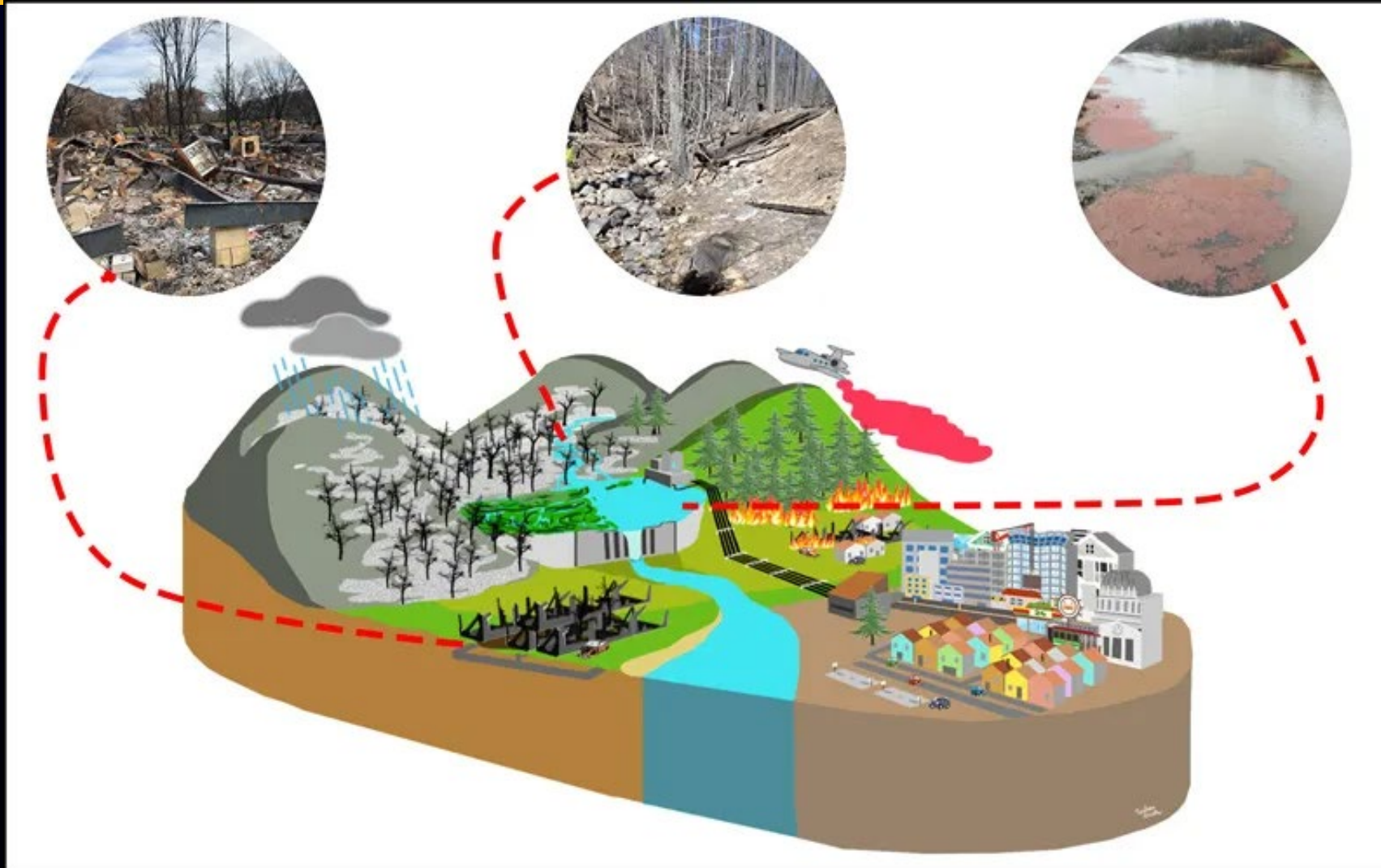


Concentrations of Lead in 2018 PM2.5



Source: California Air Resources Board

Water Quality Impacts



Source: Chow, A. T.-S., T. Karanfil, and R. A. Dahlgren (2021), Wildfires are threatening municipal water supplies, *Eos*, 102, <https://doi.org/10.1029/2021EO161894>.

New Firefighting Resources



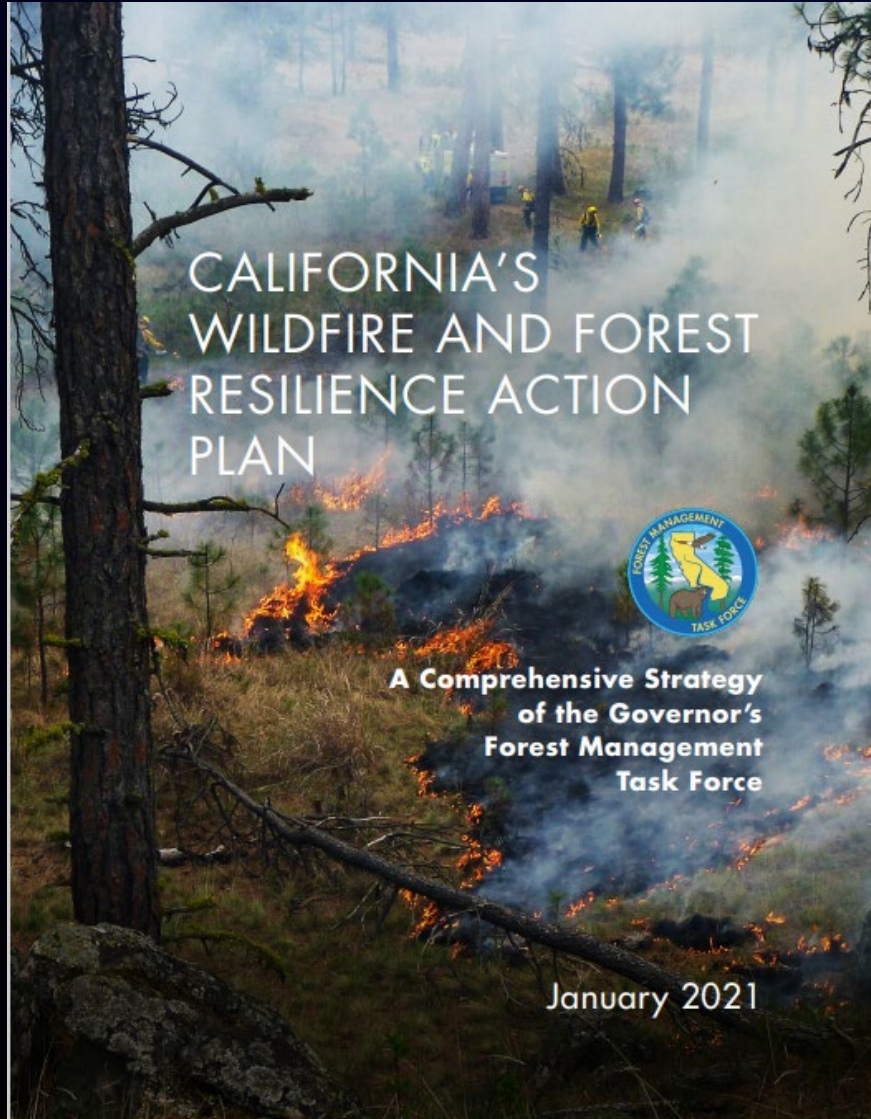
- More firefighters
- Expand and updated aircraft fleet
- New technology

ALERTCalifornia



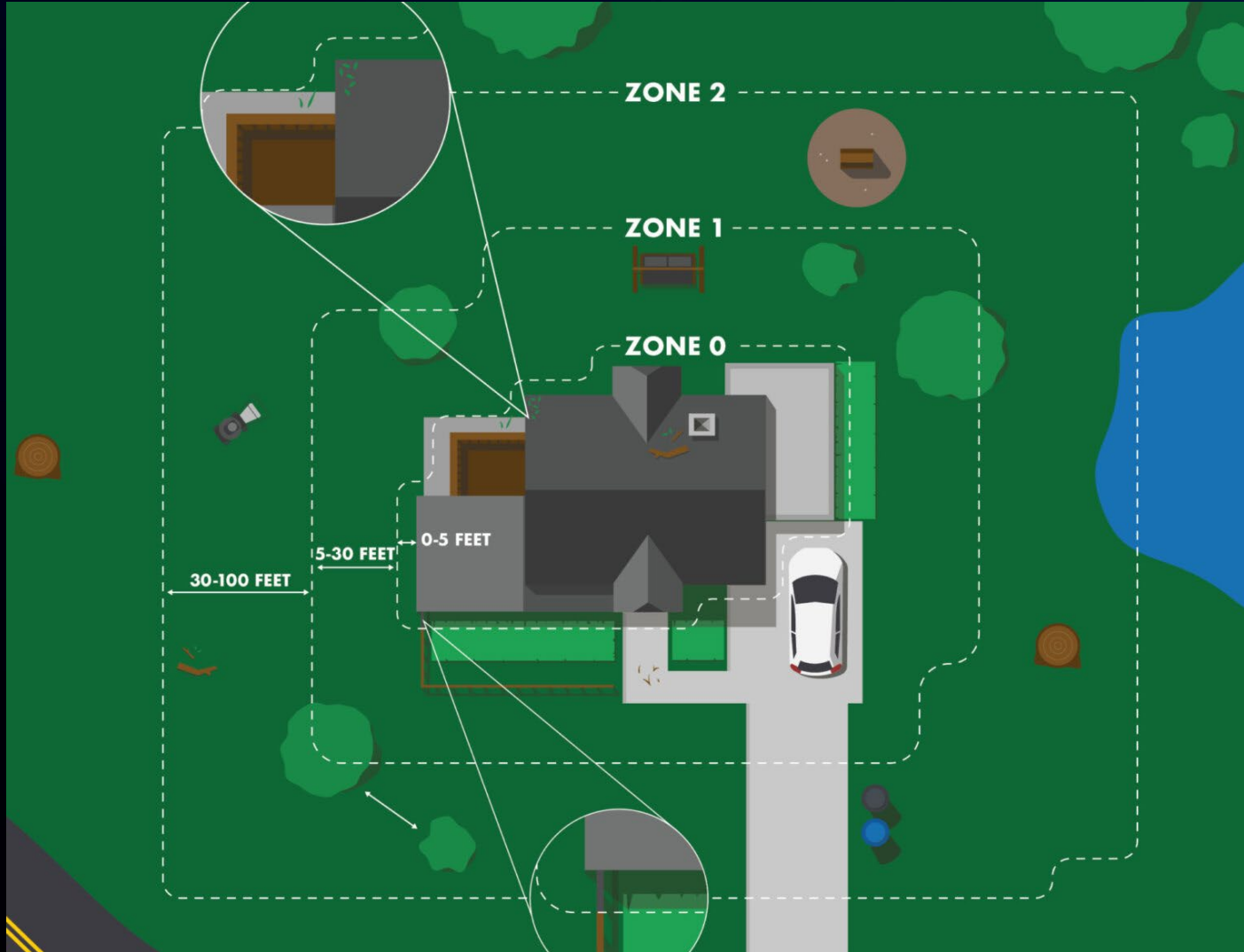
- UC San Diego, CAL FIRE partnership
- Assisted by Artificial Intelligence from Digital Path

Governor's Wildfire & Forest Resilience Task Force



- Purpose: Implement an **interagency** framework for establishing healthy and resilient forests and communities that can withstand and adapt to wildfire, drought, and climate change.
- Focus: Facilitate and track progress on the ~100 deliverables in the *Wildfire & Forest Resilience Action Plan*.
- Goal:
 - 1 million acres/yr of wildfire resilience treatments by 2025
 - Includes 400,000 acres of beneficial fire

Fire-Adapted Communities



- Updated building codes
- Grant programs for home hardening
- Defensible space standards and inspections



Questions