
U.S. Fire Administrator's Summit on Fire Prevention and Control

National Emergency Training Center
October 11, 2022



U.S. Fire
Administration



A background image showing three firefighters in full protective gear, including helmets and oxygen tanks, standing in front of a fire. The image is overlaid with a semi-transparent blue filter.

Wildland Urban Interface (WUI) Codes and Standards

**Karl Fippinger, CEM, PMP
Vice President, Fire and Disaster Mitigation
International Code Council**

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THE WILDLAND URBAN INTERFACE

The zone of transition between unoccupied land and human development. It is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

- U.S. Fire Administration

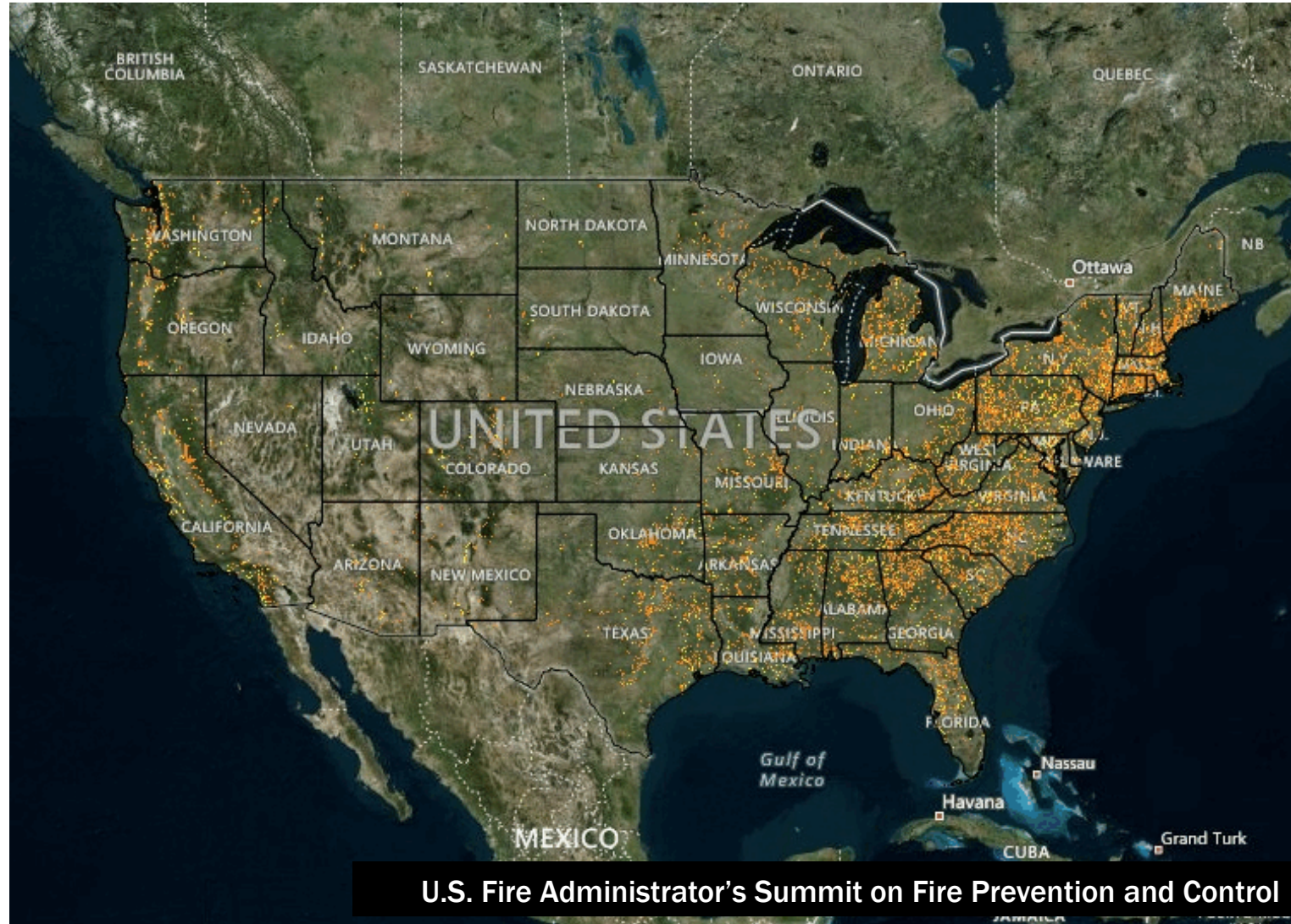


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WILDLAND URBAN INTERFACE GROWTH IN THE UNITED STATES

From 1990-2010:

- The wildland urban interface grew by **33%** to over **190 million acres**.
- The number of homes in the wildland urban interface **expanded by more than 41%**.
- The wildland urban interface continues to grow by approximately **2 million acres per year**.
- **99 million people**, or **1/3 of the U.S. population** now live in the wildland urban interface.



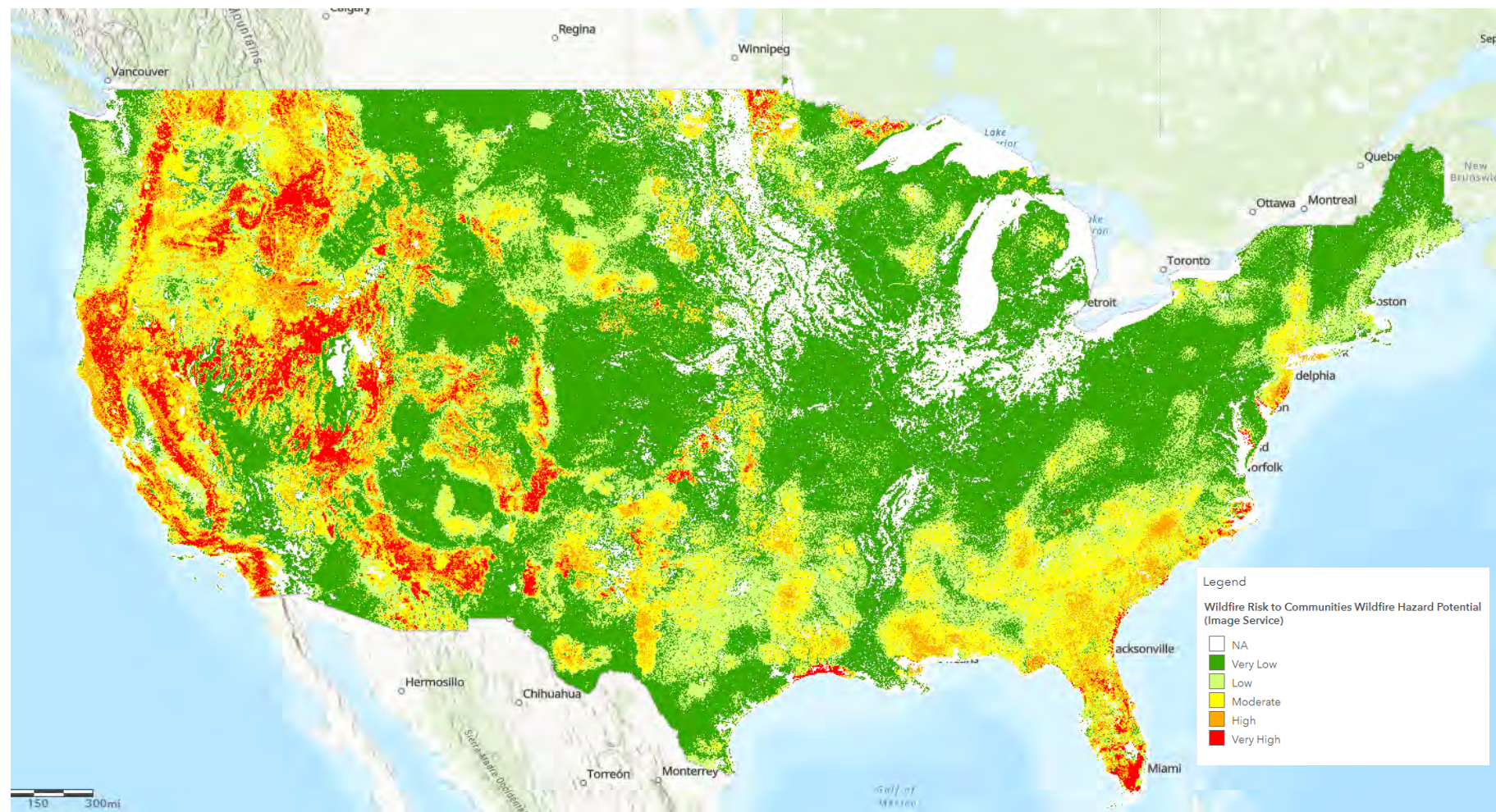
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WILDFIRE RISK TO COMMUNITIES

At risk from
wildfire:

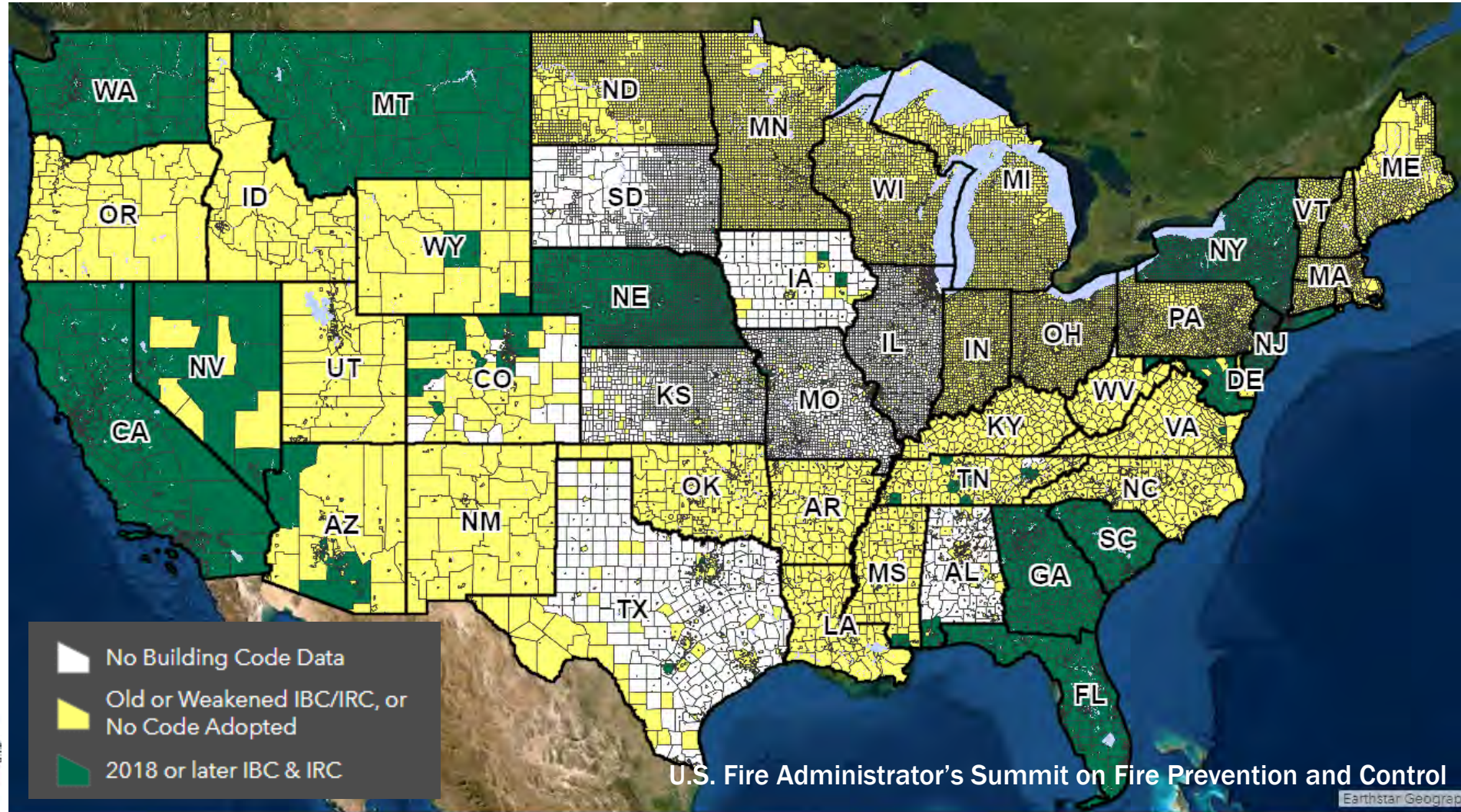
+46 million
residences

+70,000
communities



NATIONAL BUILDING CODE ADOPTION TRACKING

According to FEMA, only 25% of hazard-prone jurisdictions in the U.S. adopt the latest two editions of hazard-resistant building codes.



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Earthstar Geograph



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KEY CONCEPTS FOR REGULATING THE BUILT ENVIRONMENT

Parcel Level | Neighborhood Level | Community Level

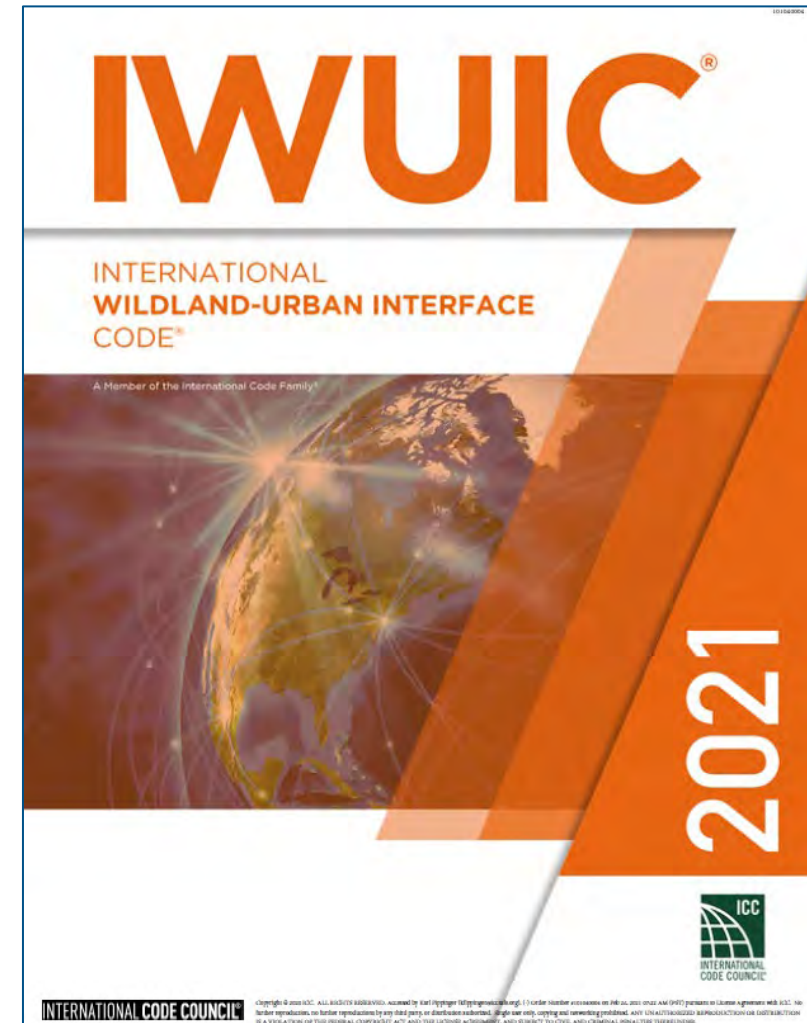
- Ignition-Resistant Construction
- Defensible space
- Emergency Vehicle Access
- Water Supply
- Fire Sprinklers



IWUIC ADOPTION

The IWUIC is adopted:

- Statewide in only 5 states
 - MT, NV, PA, UT, WA
- 94 counties across 24 states
- New federal buildings over 5,000 s/f built on federal lands since 2016



CREATING SAFER AND MORE WILDFIRE RESILIENT COMMUNITIES

A landmark 2008 building code designed for California's fire-prone regions requiring fire-resistant roofs, siding and other safeguards appears to have protected more than 100 homes in the path of the 2018 Camp Fire.

- McClatchy analysis of the 2018 Camp Fire in California

51% of the 350 single-family homes built after 2008 in the path of the Camp Fire were undamaged.

By contrast, only 18% of the 12,100 homes built prior to 2008 escaped damage.



CONTACT INFORMATION

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A photograph of three firefighters in full protective gear, including helmets and oxygen tanks, standing in front of a large wildfire. The image is overlaid with a semi-transparent blue filter. The firefighter in the center is seen from the back, looking towards the flames. The other two firefighters are partially visible on either side.

Wildfire Disasters: A Wicked Problem

Michele Steinberg
Wildfire Division Director
National Fire Protection Association®

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We've got a wicked problem on our hands!



A wicked problem is:

- Difficult to clearly define
- Multi-causal
- Incomplete, contradictory and changing requirements
- Socially complex – no clear solution
- Solving one aspect may reveal or create other problems
- Isn't the responsibility of any one entity



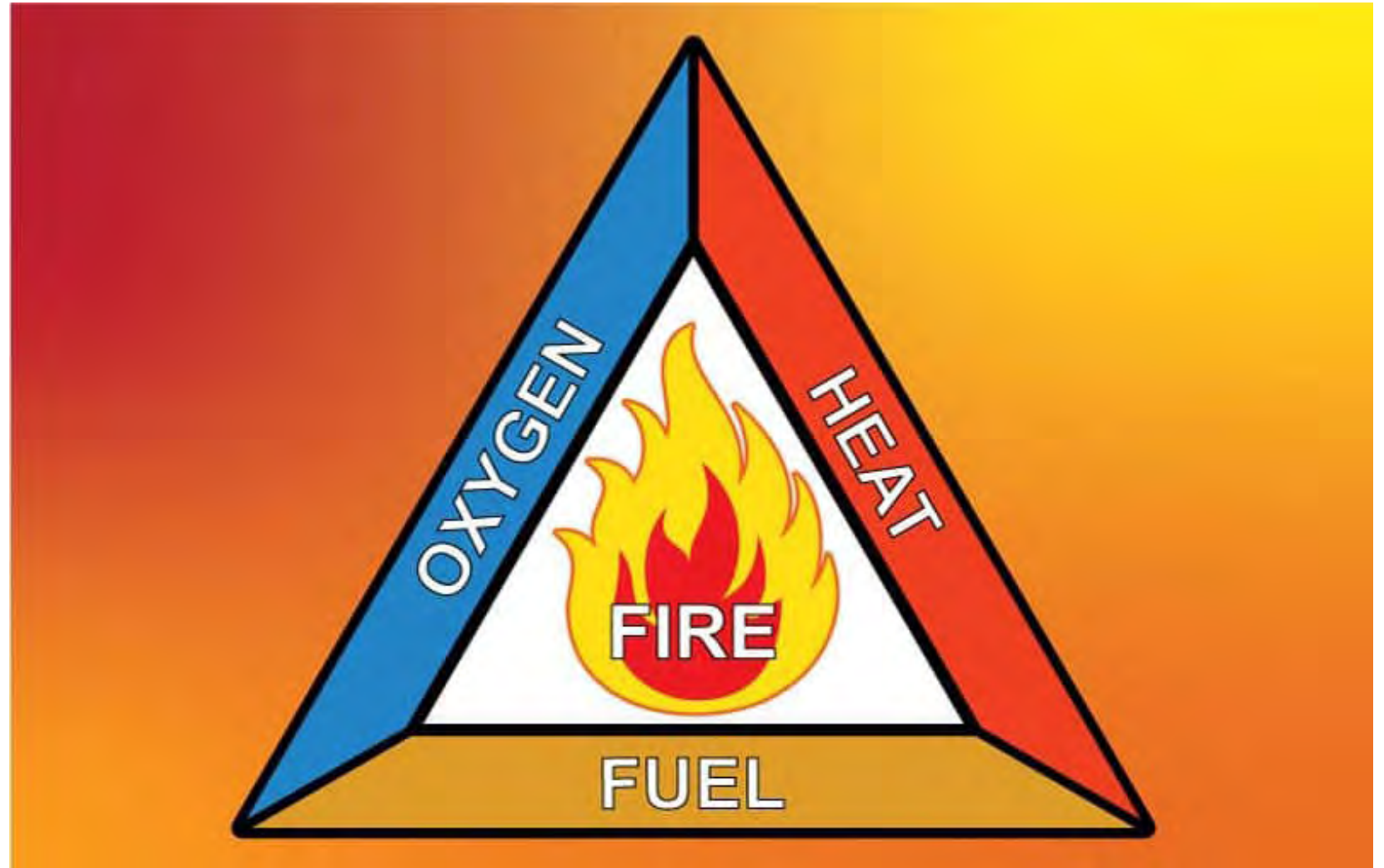
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The Problem is getting *WORSE*

- A volatile climate
 - Extreme droughts, hotter temperatures
 - Bouts of heavy precipitation grows vegetative fuel
 - Water impacts
- Land use and management decisions
 - Growing population and construction wildfire-prone areas
 - Overgrowth of forested lands due to over-suppression

Michael Frye
michaelfrye.com

What can we control?



Homes as fuel – location, design, materials, immediate surroundings



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CAL FIRE Damage Inspection Program Data

Year	Damage	Structure Type						Total	% of Residential Structures Damaged/Destroyed	% of All Structures Damaged/Destroyed
		Single Family Residences	Multifamily Residences	Mixed Residential Commercial	Nonresidential Commercial	Other Minor Structures	Infrastructure			
Since 2014	Destroyed (>50%)	26874	282	15	938	10104	16	38229	93.32%	93.05%
	Major (26-50%)	137	6	0	24	133	7	307	0.49%	0.75%
	Minor (10-25%)	368	6	3	48	173	2	600	1.29%	1.46%
	Affected (1-9%)	1402	24	2	131	376	12	1947	4.90%	4.74%
	TOTAL	28781	318	20	1141	10786	37	41083	100.00%	100.00%

Total	2014	2015	2016	2017	2018	Since 2014
Structures Destroyed	240	3141	1223	10922	22703	38229
Structures Damaged	8	112	72	1139	1523	2854
Structures Damaged/Destroyed	248	3253	1295	12061	24226	41083



Fire Department Needs – Wildfire and WUI

- 87% are responsible for WUI/wildland firefighting.
- 78% of departments who perform WUI/wildland firefighting operations have **unmet needs** in training.
- Two-thirds of departments have **unmet needs** in the area of wildland personal protective clothing.



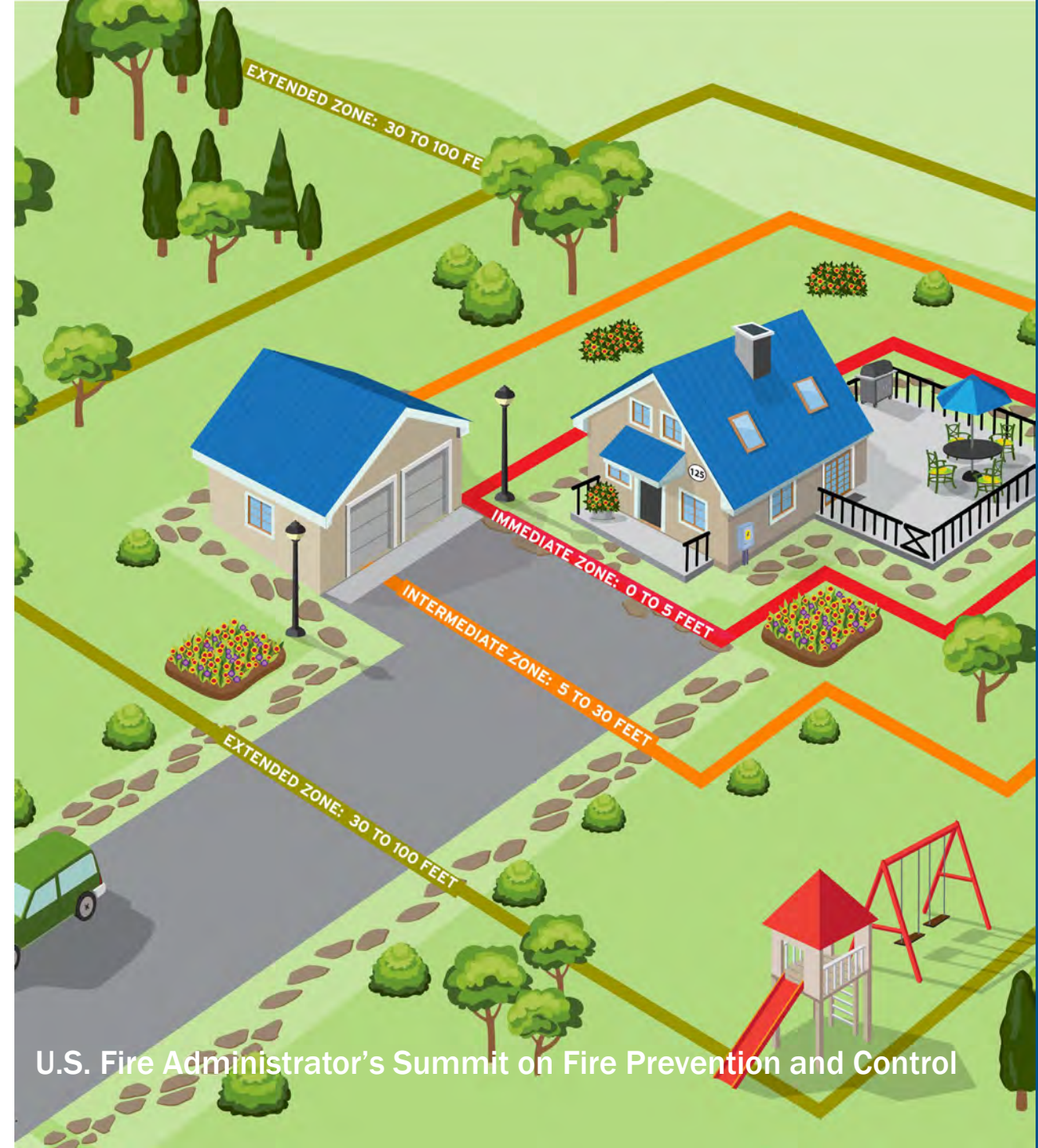
Land use and management contribute to wildfire disasters



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Federal Fire Safety Management Agency

Home Ignition Zone

- What happens here is critical to structure survival
- Home materials and surroundings dictate its ignitability
- There are things we can do to prevent home ignition



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Wildfires are inevitable; disasters are not



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Thank you

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The background image shows three firefighters in full protective gear, including helmets and oxygen tanks, standing in front of a large fire. The scene is filled with thick smoke and bright orange flames. The image is overlaid with a semi-transparent blue filter.

Responding to the Interface

Training to prepare structural firefighters for WUI

Rick Swan

U.S. Fire Administrator's Summit on Fire Prevention and Control

BACKGROUND

- We are all aware of the issues surrounding wildland fire in the urban interface.
- By the very nature of the name, these fires will occur in and around communities mostly protected by structural firefighters.
- Fact
 - In the U.S., there are approximately 25,000 wildland firefighters.
 - There are over 35,000 professional firefighters in California alone.



DALLAS, TX. – JULY 25, 2022



U.S. Fire Administrator's Summit on Fire Prevention and Control

LAGUNA NIGUEL, CA. – MAY 12, 2022



U.S. Fire Administrator's Summit on Fire Prevention and Control

MARSHALL, CO. – DECEMBER 30, 2021



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2015 AND 2021 NFPA NEEDS ASSESSMENT

- **87%** responding say they perform WUI firefighting
- **78%** of those responding have not received formal training in WUI firefighting
 - Smaller departments do not have access to specialized WUI firefighting operations
- **66%** cannot equip ALL their emergency responders with wildland firefighting protective equipment
- **97%** cannot handle an incident involving more than 5 structures on their own



A GAP IN THE TRAINING MODELS

- **National Wildfire Coordination Group (NWCG) S-215**
 - Designed for Wildland Firefighters
 - 24 hours of in-person classroom training
 - S-130 (40), S-190 (8 online) and L-180 (4 online) prerequisites (FFT1)
 - Prescribed classroom sites
- **Responding to the Interface**
 - Designed for Structural Firefighters
 - 16 hours of in-person training
 - 8 hours classroom review, 8 hours field training and exercises
 - 10 hours of on-line training
 - Available for any community

CONCLUSIONS

- **Almost 90%** of fire fighters responding to Urban Interface Fires are structural fire fighters.
- **More than 75%** of those surveyed do not provide formal Urban Interface Fire training.
- There is a training GAP for structural fire fighters for standardized Urban Interface Fire Training.
- NWGC S-215 (Fire Operations in the Wildland Urban Interface Course) is a minimum requirement, and other organizations' equivalents should be considered.



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