

Firewise Landscape Design

Mark Baker, Wildland-Urban Interface Coordinator



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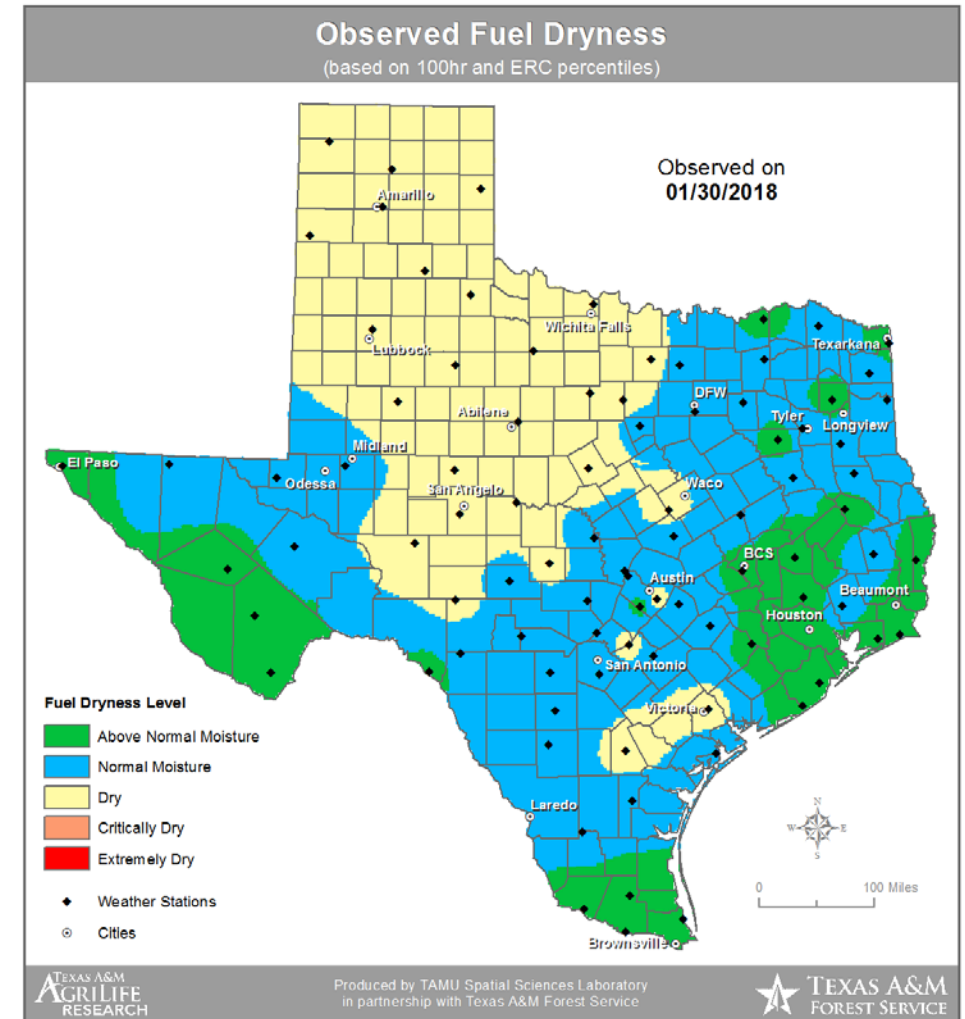
Overview

- Wildfire Risk
- Structure Ignition
- Design Guidelines
- Examples

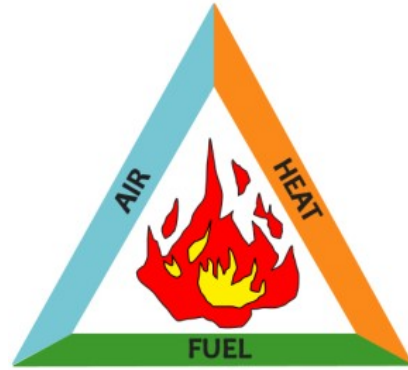


Wildfire Terms

- Wildfire fuels
 - Wildland Vegetation
 - Built environment structures and vegetation
- Wildland Urban Interface
 - Geographic line
 - Intermix
 - Occluded
 - Combined Fuels complex
- Risk
 - Likelihood and consequences



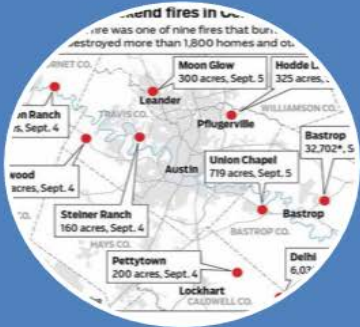
Fire Behavior



- Fuels
 - Fire needs fuel, air and heat or an ignition source
- Spread
 - Fuel moisture and configuration, weather
- Embers/ Firebrands
 - Wind driven from natural and built environment



Austin's Wildfire Threat



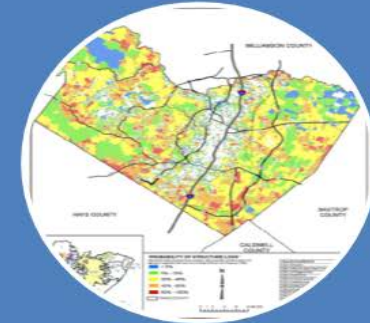
**Multiple
simultaneous
starts**



**Relatively
small
wildfires**



**Relatively
large losses**



**More
exposures
than available
resources**



Central Texas Wildfire Risk

- Historic events

- 2011

- Pinnacle, 100 acres, 10 homes lost, 12 damaged
 - Steiner Ranch, 160 acres, 23 homes
 - Leander, Pflugerville, Spicewood, Bastrop

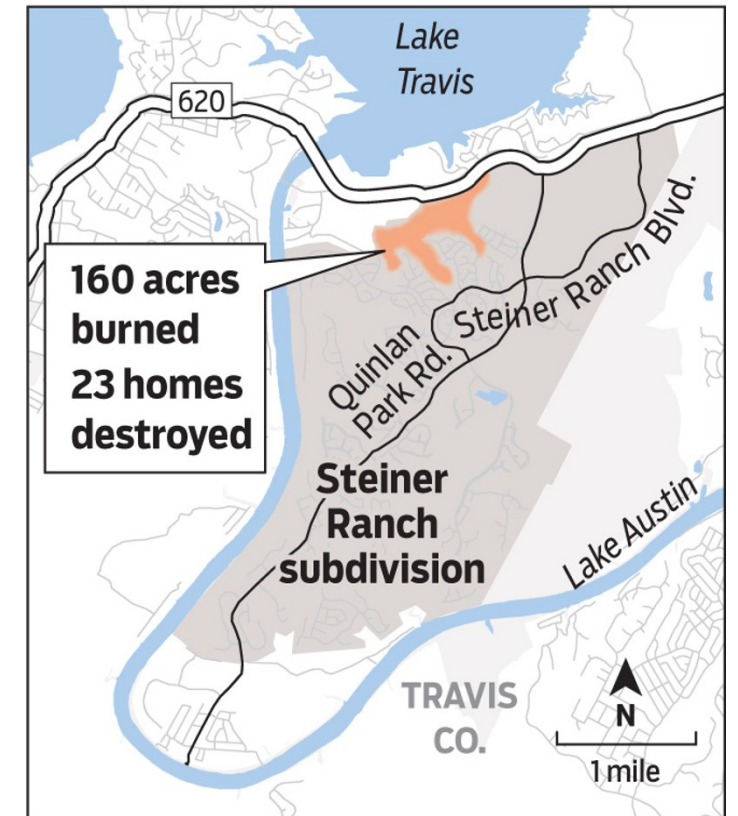
- Historic evidence

- Burn scars
 - Accounts, Davenport Ranch April 1961 – 4,000 acres
 - Plant adaptation

- Weather

- Drought and flash Drought
 - Dry fronts, tropical storms

Steiner Ranch fire



facebook.com/AustinFireDeptWildfireDivision/



Austin Fire Dept.-Wildfire Division added 2 new photos. ...

July 22, 2017 · 🌐

Fire activity in Central Texas continues. Today, **Austin Fire Department** firefighters were successful in limiting the growth of a wildfire within view of downtown that threatened a six-building, three-story apartment complex. Wildland Urban Interface (aka WUI) fires in a major metropolitan area don't have to get very big, relatively speaking, to threaten homes and other structures. Due to the lack of rain, live vegetation have dried out enough to result in extreme fire behavior even under mild weather conditions.



Austin Fire Dept.-Wildfire Division added 4 new photos. ...

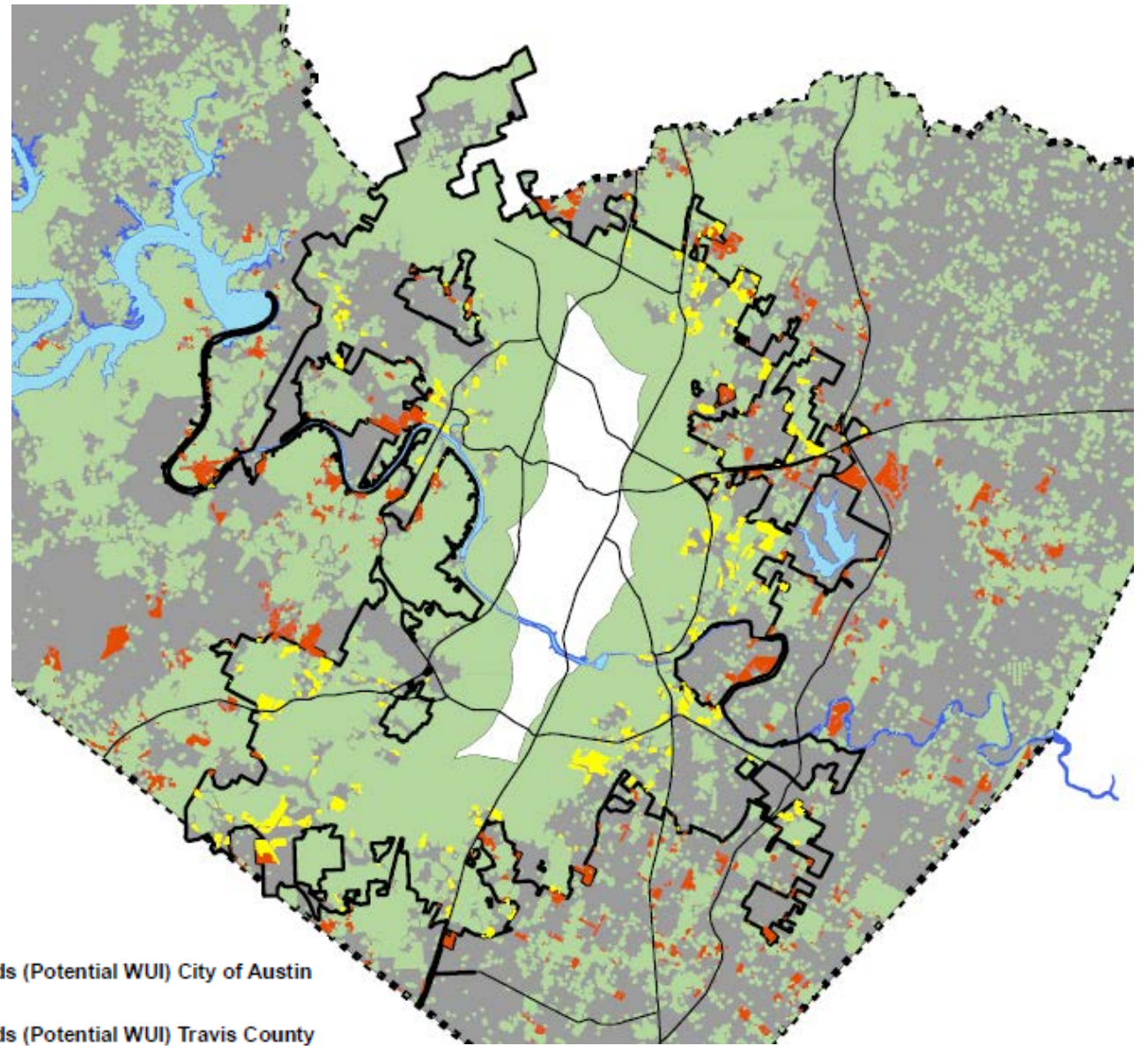
July 26, 2017 · 🌐

Another Wildland Urban Interface fire in Austin today. Crews were faced with 10 homes being threatened by a fast moving wildfire. Fires do not have to be big in an urban environment to directly threaten lots of homes. Due to the lack of significant rainfall even the "live" vegetation has become available to burn. Please be extremely careful with outdoor activities.



Risk Analysis

- Fuels
 - Proximity to wildland fuels
 - Spacing of structures
 - Spread by Embers
- Topography
- Weather
 - Wind
 - Humidity
 - Fuel moisture



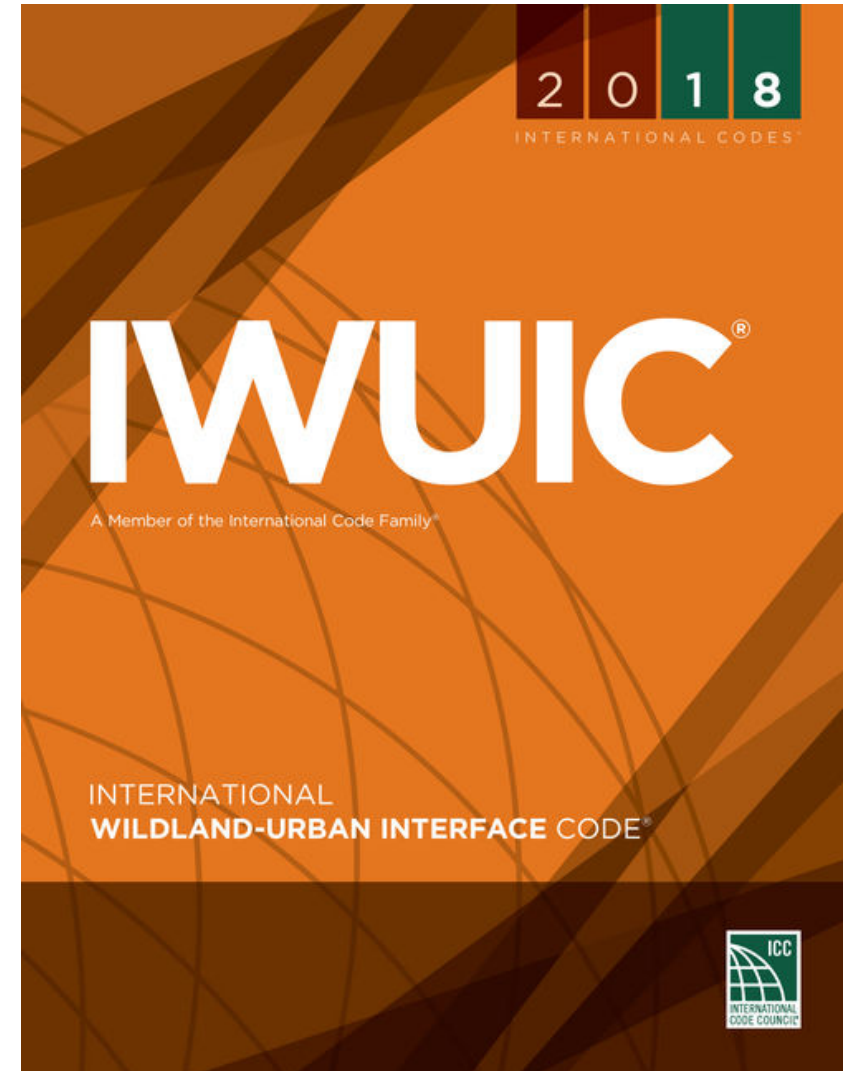
Common Denominators of Home Ignition

- **Embers** are the main reason homes ignite
- **Direct flame** impingement and radiation to combustible attachments
- **Windows**- non tempered, single pane, wooden or vinyl panes.
- **Landscape to Structure**- minimal fuels, low intensity, backing fires.
- **Secondary Fuel Sources** - firewood, door mats, patio furniture.
- **Structure to Structure** - (auto exposure) inadequate setbacks expose homes to high heat and ember production.

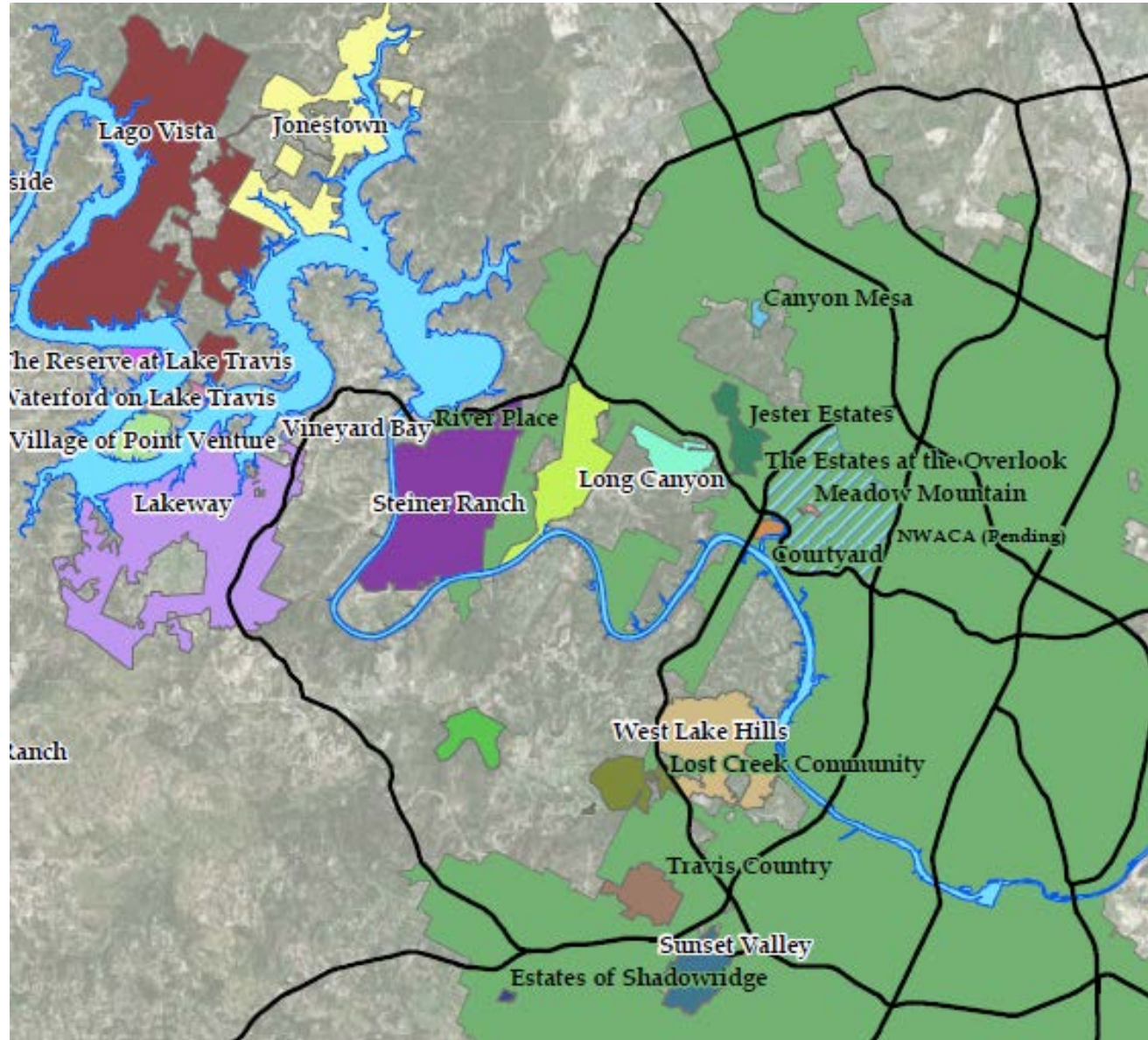


Wildland-Urban Interface Code

- Hazard Severity
 - Slope
 - Fuels
 - Structure Density
- Ignition Resistant Construction Level
 - Hazard Severity
 - Defensible Space
 - Water Supply
- Other Fire Protection
 - Access
 - Hazardous activities
 - Fire plans
 - Interior fire sprinkler system
 - Spark arrestors



Firewise USA Communities



Design with Wildfire in mind

Fuels Continuity

- Vertical – ladder fuels
 - below flammable structure components
 - Connection to aerial fuels
- Horizontal
 - Rate of spread, intensity
 - Barriers, slope



Design with Wildfire in mind

Fuels Arrangement

- Close to other fuels
- Maintain by size or density reduction
- Plant characteristics



Design with Wildfire in mind

Defensible/ Survivable Space Zones

- Immediate zone
 - Within 5 feet of Structure
- Intermediate Zone
 - 5 feet to 30 feet
- Extended Zone
 - Beyond 30 feet



General Considerations

- Fuels Volatility/ Flammability
 - High resin closed growth plants versus high moisture open growth
 - Structure attachments, materials, openings, corners
- Placement and proximity to flammable materials
- Raise tree canopies to reduce ladder fuel
- Maintain dry (cured) grass areas
- Barriers
 - Walkways
 - Retaining Walls



Good D-Space from the Standpoint of:

**Construction Materials, Short Grass, Low Shrubbery,
FireWise Plant Selection and No Ladder Fuels**



Excellent Defensible Space with Sidewalk Acting as a Firebreak

**Natural Xeric
Garden Areas
Bordered with Rock**



Gravel Walkway



Rock Planter



FireWise Xeriscape

Hmmmmmmmm....



What Do Think?

Any Suggestions?



FireWise Flower and Perennial Garden





Butterfly and Hummingbird Habitat Garden



Gravel Spacer

(Doubles as Splash
Guard for House)



**Windows
Unobstructed by
Vegetation**

Accidental FireWise Garden... We Just Got Lucky!!







Natives Grasses and Forbs Appeared After Initial Clearing





Arborist Wildfire Mitigation Qualification

Coming Soon

- What You Get Out of it
 - Course taught by experienced professionals
 - Take a peak into the world on how wildfires burn and how you can help your community by becoming a “pre- first responder”
 - Be included on a public list of fellow arborists who are Wildfire Risk Reduction Qualified
 - Exposure to state of the art wildfire simulation technology
- Business Development
 - Opening of a new market for professionals all across Texas
 - Cutting edge of the ground floor
 - Easy implementation with high potential returns

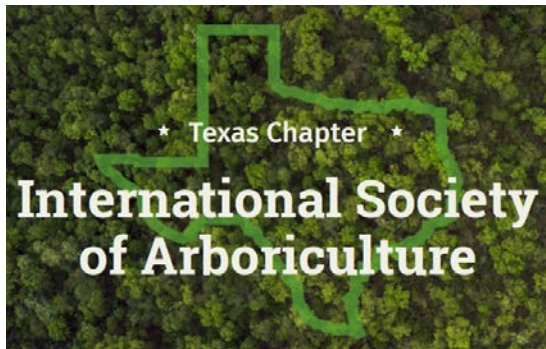


Mark Baker, Wildland-Urban Interface Coordinator

mark.baker2@austintexas.gov

512-751-6396

austintexas.gov/departments/wildfire-division
or search ATXFIRE



isatexas.com



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Preparing for Wildfires
<http://texasforests.tamu.edu/WildlandUrbanInterfacePrograms/>