



Sometimes we don't realize that

Wildfire is a natural occurrence in Central Texas and important to maintain a healthy, balanced, and truly natural ecosystem.

Nature wants Central Texas to burn.

The land around us burned periodically long before we settled here.

And there will be more fires in the future.

We're going to have to learn to live with it, cause it's not going away.



The native plants and animals of Texas have evolved over time to become **fire-adapted**.  
And they had to, in order to survive.  
And if we want to survive, then we need to learn to adapt too.



And that brings us to the concept of a fire-adapted community.

Members of a fire-adapted community understand that:

1. We live in a fire-prone area... and fires are going to happen despite our best efforts.
2. Taking responsibility and working together is critical to mitigating risk.

and



3. If risks to people can be mitigated, then the inevitable fires don't have to be catastrophic fires.



Here are a couple of national programs that support efforts at a community level to mitigate wildfire risks by adapting.



When I first began learning about wildfires, and about how to reduce the risk of harm from fires, it was back in 2011 - the year wildfires hit Texas harder than ever.

And initially I viewed wildfire safety and environmental protection as two competing objectives. Where there would have to be some kind of give and take, where the outcome would be a tolerable middle-ground or compromise.

BUT - after I had been involved for a while - a lightbulb went off. I realized I had been looking at this wrong. These two objectives don't have to battle it out.

Instead of focusing on just wildfire safety, or just environmental protection, we can shift the objective.

--CLICK--

And these two can work together and complement each other in a way that achieves both objectives, if we aim for a landscape that is **resilient and healthy**.

How can we achieve a healthy and resilient landscape. Well it takes some thought, some

planning, and a lot of diligent maintenance. Let's get into some of the nuts and bolts on ways to pursue a healthy resilient landscape, and review some of the ideas that were discussed during our assessments this morning.

## Harden the Structure



First things first – the HARDEN THE STRUCTURE

A Firewise property starts with the ridgeline of the structure and moves outward.

If you want to protect a home from burning, then start with the home! The farther you move out from the home, the less effective your actions are at reducing risk. So hardening a structure should always be the first step.



## Harden the Structure - Gutters



- Cleaning out rain gutters is a good example of home hardening, and an easy place to begin your risk reduction efforts.
- The accumulation of leaves in a gutter can be prone to ignition, particularly from falling hot embers when there is a fire nearby.

## Harden the Structure - Gutters



- And after the gutters are clean, you might consider installing some type of gutter guard so they don't become a fire hazard as quickly.

## Harden the Structure – Roof Surfaces



- Similar to the gutters, some roof surfaces also accumulate a lot of leaves and debris.
- If we don't want this house to burn, then we should remove the kindling stacked on top of it.
- This high-risk situation can be remedied with a ladder, a broom, and about 5 minutes of time.

## Harden the Structure – Crawl Spaces



- Leaves and debris also tend to collect under decks and balconies, in the crawl spaces like this one.

## Harden the Structure – Crawl Spaces



- But there's a pretty simple way to prevent debris from accumulating in these areas - using 1/8" metal screening.
- Similar to the gutter guard, screening can keep flammable leaves and debris out during normal conditions, and during a wildfire it can stop dangerous embers from blowing into the crawlspace and potentially igniting the deck.

## Harden the Structure – Crawl Spaces



- Common wood lattice won't keep much out from under crawlspaces. Flammable debris and embers can sneak past the relatively large lattice openings.
- However, the lattice could be used in tandem with the 1/8" metal screening as reinforcement to help hold the screen in place.

## Harden the Structure – Attic Vents



- Embers are notorious for intruding homes through attic vents. Once inside the attic, they can smolder for days before eventually igniting and burning up a home.
- Installing 1/8 inch metal screening across the vent opening, from inside the attic is a good way to keep embers out.
- The gable vent in this picture does have a protective screen installed; and that black stuff you can see in the vent is ash from the embers that it stopped from coming inside this attic.

## Harden the Structure - Decks



Next, looking at the decking materials:

- There are many different types of non-combustible decking materials made from PVC and wood fiber. These are very fire resistant – and all around durable and long-lasting.
- These decking materials are also better for the environment when compared to the more common pressure-treated deck boards that can leach toxins over time.
- Now, I know it's not realistic to expect you all to go home and replace your wood decks with composite decking this weekend, but try to remember deck material flammability if you're ever designing a new deck.



## Harden the Structure – Privacy Fences



- Common wooden privacy fences bake in the sun year after year and become very dry and ignitable.
- In a wildfire scenario, they often act like **wicks** that can carry fire directly to the home. Especially where the fence connects to the house and passes under an eave of the roof.

## Harden the Structure – Privacy Fences



- But that wick can be interrupted before it gets to the home by inserting pillars made from noncombustible materials like rock, brick or wrought iron.

So after seeing some structural hardening examples like these, you can start to get a sense of how effective they are at reducing wildfire risk.

But obviously there is also a major vegetation management component to wildfire risk. So let's look at some of those strategies next.



Moving outward from the structure to the vegetated landscape brings us to the concept of defensible space.

A lot of times people hear the term “defensible space,” or “Firewise Landscaping” and they imagine a yard that is stripped of all vegetation. A parking lot. But this doesn’t have to be true. Folks don’t need to cut down trees and rip out all their plants to be safe from fire.

So then what is defensible space?

This home survived the 2011 Steiner Ranch fire, probably because it has an effective defensible space.

Defensible space is a protective buffer around the structure, typically 30’ outwards in all directions, but that distance can vary depending on other factors.

The buffer space contains limited flammable materials and serves as a barrier to stop a wildfire from approaching, or in the case of falling embers, defensible space can prevent a new fire from starting near the home.

This critical area also can provide space for firefighters to work in while they try to protect your home.

On many of Austin's smaller lots, there may not be 30' of space to work with before you bump up against a property line. I only have about 6' to the property line on either side of my home. In this case, your efforts should go out to the property line. To extend risk reduction efforts farther, try collaborating with your neighbors.

To highlight some key components of an effective defensible space, we've created this little poster and there are copies of it available for you to take in the lobby.

## Limit Fuel Continuity Good Examples



Probably the most important goal of defensible space around the home is to limit fuel continuity. And when we use the term “fuel,” we mean anything that is available to burn in a fire, including plants and structures.

Limiting fuel continuity will help stop a fire from spreading to, or from, the home.

In order to stop a fire from spreading to or from the home, it is important to limit fuel continuity. In gardening and landscaping circles I often hear the phrase “the right plant in the right place” and that certainly applies to Firewise landscaping.

The idea of limiting fuel continuity should be assessed from a horizontal perspective, as well as vertically.

--CLICK--

To break up horizontal (or lateral) fuel continuity:  
establish groups of landscape islands, where plants and trees are isolated in beds and a safe distance from the home.

--CLICK--

Create fuel breaks with landscape features such as rock pathways, stone walls, healthy trimmed lawns or driveways.

--CLICK--

To break up *vertical* fuel continuity, create separation between ground-level vegetation and tree canopies or structures.

You can prevent a surface fire from becoming a crown fire by limbing up trees so that the lowest branches are at least 6 feet high, and removing shrubs and other intermediate ladder fuels that would enable a fire to spread upwards.

--CLICK--

In densely wooded areas with a tall and closed canopy, you can create a shaded fuel break by removing ladder fuels and limbing up the trees. This method can be effective at slowing or stopping the spread of fire if it hasn't already reached the canopy.

Within tree canopies, it is a good idea to thin trees to reduce their bulk canopy density and the overall amount of fuel that's up there, while still retaining a closed canopy where possible. Closed tree canopies will cast shade to retain moisture in the landscape.

## Limit Fuel Continuity Good Examples



Trees located inside the defensible space can be retained. But if they are kept, extra caution should be exercised.

Tree limbs shouldn't touch structures, and removal of ladder fuels under the canopy becomes more important than ever.

Trees inside the defensible space should be considered part of the home's footprint, part of what you are defending, and the defensible space buffer should extend out around the tree.

## Limit Fuel Continuity Bad Examples



After seeing some good examples, let's check out a couple of bad examples where fuels are continuous.

This image shows the classic ladder fuel conditions, where a small ground fire can jump into the canopy within seconds.



## Limit Fuel Continuity Bad Examples



And here we see fuels that are so continuous it's hard to tell where the vegetative fuels end and the structural fuels begin.

## Account for Slopes



Topography can also be a major factor in creating defensible space.

Homes located on a slope, or at the top of a hill are at greater risk because fire tends to burn uphill.

In these situations, defensible space should extend farther downslope and a more aggressive vegetation management plan is a good idea.

Building a retaining wall, with non-combustible materials, at the down-slope edge of the defensible space can be very effective at preventing a fire spreading any farther uphill.

This retaining wall likely saved a residence in Oak Hill during the 2011 Pinnacle wildfire.

## Account for Slopes



On the contrary, this situation looks very risky. With fine grasses and shrubs providing continuous fuel up the slope and to the wooden deck and home.

## Plant Selection



What about fire resistant plants?

You may have come to today's symposium hoping to leave with a list of Firewise plant species. And if so, I'm sorry to tell you - I don't think you're getting a list.

But there's a pretty good reason for that:

A list of firewise plants would give folks a false sense of security.

Because no plant is fire-proof.

And under extreme conditions, all plants will burn.

So, instead of giving you a list, I going to talk about certain plant characteristics that can make them more or less flammable.

First, a plant's moisture content is the single-most important factor governing its flammability.

Succulents like this are an excellent example of a high moisture / low flammability plant because they retain water in their leaves and stems. This one appears to have been scorched, but did not ignite.

## Plant Selection



On the other hand, plants with high concentrations of oil, wax, or resin are generally more volatile, and will burn more intensely.

Examples include: conifers, cedars, rosemary, yaupon holly and agarita.

If you desire these plants in your yard, they should be placed outside of the defensible space.

This rosemary bush in front of the big window is a weak link in the home's defensible space and could someday result in a fire breaking the glass and entering the home.

## Plant Selection



Firewise plants do not accumulate or shed large amounts of litter, leaves or fine branches – this material can burn easily when dry.

And this Pampas Grass looks particularly dangerous stuffed up under the eave of the roof.

## Plant Selection



Native and adapted plants are best-suited for our climate and are more likely to survive extreme weather, even including wildfire.

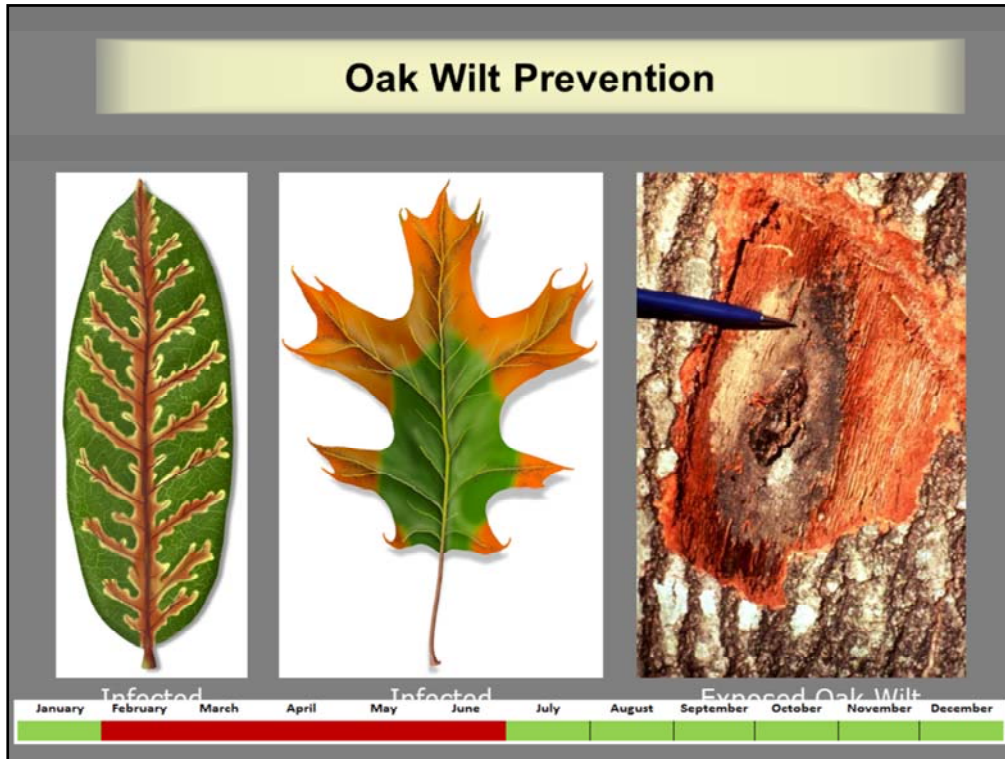


## Plant Selection



And it's important to keep a landscape well-irrigated, as watering restrictions allow.

During extreme drought and watering restrictions, owners should prioritize the plants they wish to save, providing supplemental water to those nearest the home first.



Red Oak and Live Oak trees in our area are threatened by Oak Wilt, a contagious tree disease induced by a type of fungus that can be transmitted by a beetle or contaminated pruning tools.

A few quick tips for avoiding oak wilt:

- Don't prune live oaks and red oaks between the beginning of Feb and the end of June – that's when the beetle is most active.
- Always seal fresh wounds, pruning cuts, and stumps with pruning sealant or latex paint – immediately, at all times of year.
- And clean pruning tools with a light bleach solution between trees.

## Dead Wood, Snags and Brush Piles



Keeping any dead wood around is not a very good idea for most of Austin's small properties. But for larger properties, I recommend trying to preserve some of these deadwood features. Deadwood is very beneficial to wildlife. It can provide cover, breeding sites, and food for birds, insects, small mammals and reptiles. By some estimates, dead wood provides habitat for up to 20% of animals in our ecosystem!

And it's good for soil too. When dead wood eventually falls and decomposes, it returns nutrients to the soil and aids in soil retention.

As long as these features are located outside of defensible space, and away from roads and other human activity, it might be worth keeping them around.

## Threatened and Endangered Species



January February March April May June July August September October November December

The unique environment here in Travis County is home to about 25 threatened and endangered species, such as the Golden Cheeked Warbler shown in this picture, another song bird named the Black-capped Vireo, different salamanders and lots of cave-dwelling bugs. There are several preserve systems in Austin that are setup to protect critical habitat for these animals. And it's not uncommon for that habitat to extend across preserve boundaries and onto private property. It's important for residents to know that TES habitat is protected by state and federal law – even when located on private property!

This Warbler is in its breeding season right now - and Central Texas is the only place in the world where they breed. It's habitat is characterized by mature cedar trees with a mix of oaks and some other hardwood deciduous trees.

And of all 25 threatened and endangered species in our area, this bird's protected habitat is probably the most likely to interfere with fire management plans in Austin. Fortunately, the U.S. Fish and Wildlife Service released a set of guidelines that allows property owners to legally reduce vegetation in the protected habitat, primarily by thinning the understory and creating a shaded fuel break. A link to those guidelines is provided in the booklet. One important note on the federal guidelines though: vegetation management can NOT be done in habitat areas during the bird's breeding season: March through August.



Fortunately, this aligns pretty well with oak wilt season – so projects impacting both warbler habitat and oaks can safely be scheduled for the fall or winter.

But when it comes to working in threatened or endangered species habitat, this can get pretty serious – so my recommendation is to contact the Texas Parks and Wildlife Department for specific guidance before starting any work.

## Brush Disposal



Creating and maintaining a Firewise landscape can quickly generate a lot of brushy waste that requires disposal. Once cut, this material can become an even greater fire hazard, if it is not stored and disposed of properly. Let's look at some of the disposal options.

## Brush Disposal



In this picture, a resident has dumped brush over their back fence into a greenbelt. Talk about a huge wildfire risk!

XXX

Not only is this unsafe, it's also a form of illegal dumping and violators can face fines up to \$2,000.

## Brush Disposal



How about just burning it in a pit – this looks pretty safe, a decent distance away from trees and structures, they even have some rocks bordering their fire pit.

XXX.

Nope. In Austin city limits, open burning of brush is not allowed.

So you can't throw it over the fence, and you can't burn it – how can we get rid of this stuff?



## Brush Disposal



A convenient option for Austin residents is to use the City's curb-side brush pickup.

The City hauls yard waste and composts it to create nutrient-rich soil. Residents can get rid of bundles of brush each week on their trash collection day - including limbs up to 5' long and 3" in diameter.

For bigger limbs, the City schedules curb-side large brush pick-up twice a year. It's a great idea to try and synchronize the large brush pickup date with plans to trim trees, clean up the yard and maintain that defensible space.

## Brush Disposal



You could also chip the trimmings and redistribute the mulch on site. I've seen some HOAs rent a chipper to promote a Firewise clean-up day along entire streets. Just remember, mulch can be flammable too, so use it with caution in your defensible space and keep it moist so that it does not become dry and easily ignitable.

## Brush Disposal



A safe option is to promptly haul the brush material off-site. I recently learned that about a free brush drop off available for residents at the City's Resource Recovery Center on Todd Lane.

I've also heard there are some local third-party-recyclers for vegetative waste.

The one I'm most familiar with is Organics-by-Gosh located out east on FM969. They accept trailers of brush for \$15 which they turn into mulch.

## Brush Disposal



If you have someone haul brush or any other type of waste, they should be a licensed waste hauler with the City. The Austin Code Department setup this license a few years ago to cut down on illegal dumping. The City provides a link to licensed waste haulers which is included in the booklet. If an unlicensed hauler illegal dumps your stuff, you can be held liable.

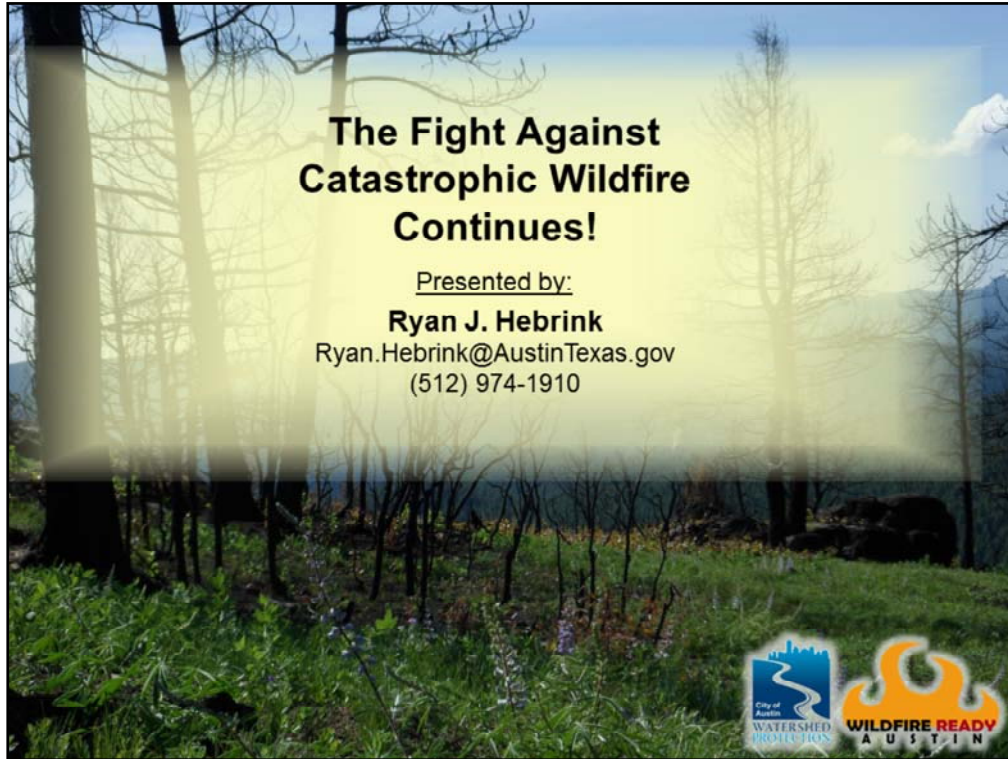
## Brush Disposal

Austin Community Landfill  
9900 Giles Road  
512-272-4329

Texas Disposal Systems Landfill  
3016 FM 1327  
512-421-1363

Travis County Landfill  
9600 FM 812  
512-243-6300

And, although not the most environmentally friendly disposal method, local landfills will also accept vegetative wastes. Here are a few in our area.



And that concludes my presentation. Thanks so much for listening. Don't forget to refer back to your guide booklet for details as you implement your risk reduction strategies.

If anyone has questions, I'm happy to take them now, or feel free to find me during the break. You're always welcome to call me or e-mail me, my contact info is shown here.