



**Wolf Creek Ranch – Burnet County  
Wildfire Risk Assessment & Recommendations  
October 29<sup>th</sup>, 2024**

The Firewise USA™ Program teaches people how to adapt to living with wildfire in the wildland urban interface (WUI) while encouraging neighbors to work together to take action to prevent damage and losses. This program can be tailored for adoption by any community and/or neighborhood association that is committed to reducing risks from wildland fire.

One of the main objectives of the Firewise USA™ program is for residents to focus on the factors that they can directly control. Being aware of the threat wildland fire presents and developing a plan of action is the best first step any landowner can take. After that, further implementation of fuel management and mitigation techniques will reduce the change of home or structure loss in the event of a wildland fire.

The following wildfire risk assessment is intended to be used by Wolf Creek Ranch residents to develop an action plan that describes priorities and actions for risk reduction. The action plan developed from the information in this assessment should be implemented in a collaborative manner and should be updated and modified every 3 years.

**Assessment Process**

Wolf Creek Ranch is located in a wildfire environment. Wildfire is a part of every landscape's ecosystem and is inevitable—the only variables are when and where they will occur. This assessment addresses the wildfire-related characteristics of the community. It examines the area's exposure to wildfire as it relates to ignition potential. This assessment does not focus on specific homes but examines the community as a whole.

The field assessment addresses the ease with which structure ignitions can occur under severe wildfire conditions and how these ignitions might be avoided within the Structure Ignition Zone of affected residents. The assessment of the community should be reviewed and updated as needed, no less than every five years. Updates should highlight mitigation efforts and new property development.

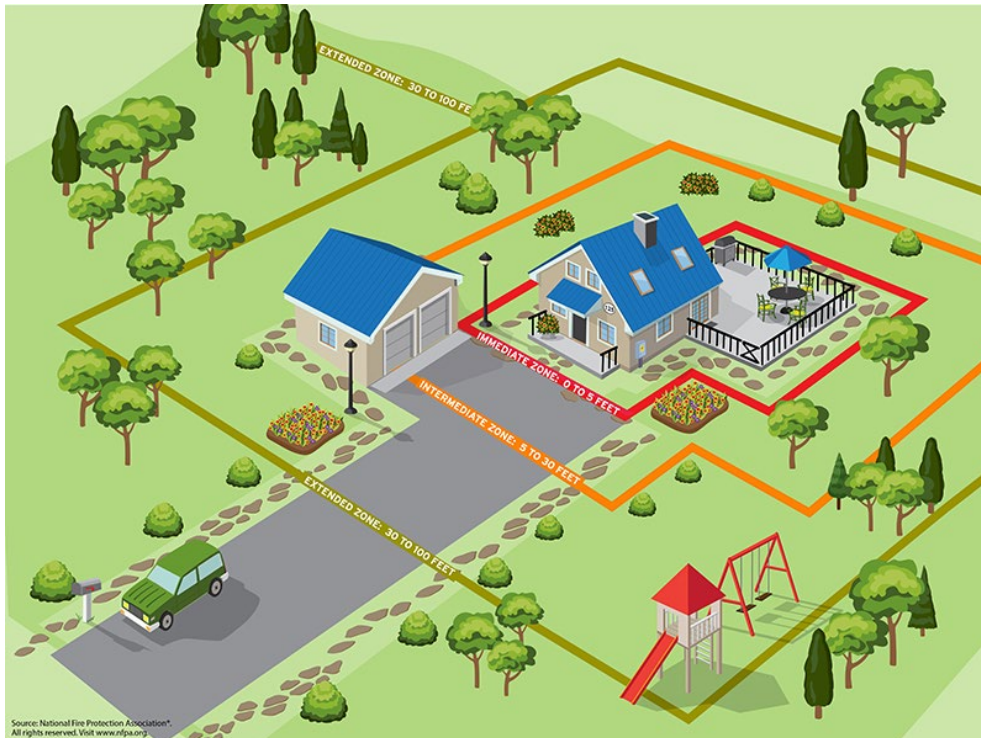
This assessment was conducted by Wildland Urban Coordinator Tessa Goeser of the Texas A&M Forest Service on October 29<sup>th</sup>, 2024.

**Definition of the Structure Ignition Zone**

A structure burns because of its interrelationship with its surroundings. To avoid home ignition, a homeowner must mitigate wildfire's potential relationship with the house. This is accomplished by interrupting the natural path fire takes within the structure ignition zone (SIZ).



This zone determines the potential for ignitions during a wildland fire; it includes a structure and its immediate surroundings up to 200 feet from the home. A SIZ often includes other structures, highlighting the need for action to take place on a community scale, instead of through piecemeal actions. Flammable items must be modified or removed from the area immediately around the structure to prevent flames from contacting it or embers building up adjacent to, or in it. Reducing the volume of live vegetation and ladder fuels will affect the intensity of the wildfire as it enters the SIZ.



Wildfire behavior will be dominated by the residential characteristics of this area—both the structures and the surrounding property. Diverting fire’s path through modification of material in the HIZ is an ongoing task that can result in avoiding home loss or damage. The good news is that by addressing community vulnerabilities, residents will be able to substantially reduce their risk of loss. Relatively small investments of time and effort reap great rewards in wildfire safety.

### **Characteristics of a Severe Case Wildland Fire that Threatens the Area**

Fire intensity and rate of spread depend on the fuel type (natural and manmade) and condition (live/ dead), the weather conditions prior to and during ignition, and the topography. Generally, the following relationships hold between fire behavior and the fuel, weather, and topography:

- Fine vegetative fuels ignite more easily and spread faster and at higher intensities than coarser fuels. In general, the more there is and the more continuous it is, the faster the fire spreads and the higher the intensities. Fine fuels burn out faster than coarser fuels.
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- The weather conditions affect the moisture content of the live and dead vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower the fuel moisture content. Lower fuel moisture produces higher spread rates and fire intensities.
- Wind speed significantly influences the rate of spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity.
- Topography influences fire behavior principally by the steepness of the slope. However, the features of the terrain such as narrow draws, saddles and so forth can influence fire spread and intensity. In general, the steeper the slope, the greater the uphill spread and intensity.

Anticipated wildfires in the Hill Country region of Texas are expected to be driven by the combination of high wind speeds, low relative humidity, and long periods of time with elevated temperatures. The combination of these weather characteristics with dry fuels such as grasses, shrubs, and trees, especially those in close proximity to a structure, can often lead to its loss. Embers are a characteristic of a wildfire that are not often considered by homeowners. Embers are small burning pieces of vegetation or wood that are carried by the wind ahead of a wildfire. Because embers are wind-driven, they can follow airflow into your home through unscreened vents. An ember shower from a wildfire can also create spot fires, which ignite gathered vegetation/debris on the roof, debris in gutters, patio furniture, rattan doormats, garden beds, and more combustible materials nearby. Ember showers can lead to structure loss even if the wildfire is not within the boundaries of the neighborhood. Wildfire researchers know that **embers are the leading cause of structure loss in a wildfire** from post-fire assessments.

### **Site Description**

Wolf Creek Ranch is located just 5 miles south of downtown Burnet, a charming small town known as the “Gateway to the Hill Country” One of the main attractions of the Wolf Creek Ranch area is its proximity to Lake Buchanan (approximately 10 miles to the northwest) and Inks Lake (about 15 miles to the southeast). The community consists of about 40 homes on multi-acre lots.

The region's climate and vegetation are influenced by its semi-arid conditions, rocky soil, and varying elevations, all of which contribute to the character of the landscape and the natural environment that residents of Wolf Creek Ranch enjoy. Burnet receives an average of about 28 to 32 inches of rainfall per year. Rainfall in the area is moderate but tends to be unevenly distributed throughout the year, with a significant portion of the precipitation falling during spring and fall months.

The vegetation at Wolf Creek Ranch is typical of the Texas Hill Country, with a mix of woodlands, brush, and riparian plant life. Dominant trees include live oaks, post oaks, cedar elms, and pecans, while shrubs like Ashe juniper (cedar), mountain laurel, and Texas sage thrive in the region's semi-arid climate. The area also features native grasses such as buffalo grass and a colorful array of wildflowers like bluebonnets and Indian paintbrush that bloom in spring. Along



Wolf Creek, you'll find willows, cottonwoods, and bald cypress, which are adapted to the moist conditions near the water.

### **Important Considerations**

The Firewise USA™ program acknowledges that there are many reasons and values that lead a person to live in the WUI and that there may be a desire for certain flammable components to exist on their property. It is important for residents to understand the implications of the choices they are making. These choices directly relate to the ignitability of their ignition zones during a wildfire.

There are 2 factors that dominate the potential for home ignition during a wildfire:

1. The ember resistance of a home.
2. The ability to keep large flames away from the home.

### **Observations and Recommendations**

The structures found within Wolf Creek Ranch's community are generally fire resistant and include adequate defensible space. Homes are also spaced out, reducing the risk of wildfire damage due to home-to-home ignition.

If building construction has not been upgraded to fire-resistant materials, structures may face a vulnerability in home survival during a wildfire. Encouraging homeowners to improve home hardening practices (e.g., replacing wood roofing, adding ember-proof vents) could significantly improve fire resilience.

The community's vegetation, especially juniper trees and native grasses, creates fuel for wildfires. Dry periods in summer and fall can exacerbate fire risk, as dense brush and dried vegetation become highly combustible. Higher risk native vegetation continues to play an important ecological role, but when present in the ignition zone or along evacuation routes, mitigation action should be taken.

Dead and dry fuel near the structure can impinge on windows and roof lines if an ember or flame were to ignite them. Replacing shrubs within the first five feet of a structure with a lower profile broad-leaf shrub, or a shade tolerant understory plant like Turk's cap, beautyberry, or inland sea-oats could reduce risks from an ember shower or surface fire to structures. As was evident in multiple yards in the community, oak trees often decrease the ability to grow turf grass, and shade tolerant species are being used. Typically, shade tolerant plants have higher moisture contents, which makes them harder to ignite, especially when a drought tolerant species.

"Limbing up" vegetative ladder fuel around a house is an excellent way to keep the yard attractive and reduce the risk of a surface fire being able to climb into the canopy. Keeping vegetation healthy, properly pruned, and removing dead vegetation and dead leaves on or near a house, is a





great way to keep your yard “lean, clean, and green.” Decreasing the competition for space and resources such as water and nutrients helps the remaining vegetation in the long run.



Example of proper “limbing up” of trees and a well-maintained lawn.

Wolf Creek Ranch has already taken some steps towards reducing wildfire threats including:

- a. Increased and continual community awareness of wildfire risk and preparedness
- b. Education and encouragement for residents to reduce vegetation surrounding their homes
- c. Community debris removal days

Improvements to certain aspects of the community should be considered to include (in no particular order):

- a. Removal of downed woody debris along roads
- b. Creating defensible space around homes
- c. Home-hardening techniques described in the “Successful Firewise Modifications” section

There are also many characteristics of the site that residents will be unable to, or would be very difficult, to change. Some of these include:

- a. Proximity to organized fire response
- b. Topographical features that adversely affect wildland fire behavior
- c. Characteristics of the predominate vegetation within and surrounding the community as a whole

One of the main goals of the Firewise program is for residents to focus on those items that they can control. Becoming aware of the threat wildland fire presents is the first and most important



step any landowner can take. After that, trying to work on the items that the owner does have control over, whether big or small, can reduce the chance of a home damage and loss in a wildland fire.

The Firewise program offers mitigation efforts of all complexity for landowners to choose from when looking to reduce their chance of loss. Mitigation efforts are covered in the Successful Firewise Modifications section of this assessment.

### **Other Comments**

Most homes within Wolf Creek Ranch display adequate defensible space and wildfire-resistant materials. An important consideration for this community is to maintain this. Continual practices such as appropriate watering, clearing garden beds, mowing, replacing dead plants with living ones, limbing up trees, and pruning shrubs as they grow, will allow the community to adapt with the landscape and be better prepared for wildfire.

### **Successful Firewise Modifications**

When adequately prepared, a house can likely withstand a wildfire without the direct intervention of firefighters. Further, a house and its surrounding community can be both fire-resistant and compatible with the area's ecosystem. The Firewise USA™ program is designed to enable communities to achieve a high level of protection against WUI fire loss even as a sustainable ecosystem balance is maintained. A homeowner and the community must focus attention on the SIZ to mitigate the wildfire's potential relationship with the house. The goal of fire-resistant landscaping is to keep fire as low to the ground and slow moving as possible. Flammable plants and materials should be kept away from the house where possible, and risk reduction activities should take place if not. Both vertical and horizontal separation of fuels should be maintained in the ignition zone and along evacuation routes. Fire resistant construction, combined with fire resistant landscaping, gives a home a better chance of surviving a wildfire. Some ways to "harden your home" from wildfire include:

- Using noncombustible roofing, siding, fencing, and decking materials – or modifying with noncombustible materials and decreasing physical contact with vegetation
- Installing 1/8<sup>th</sup> inch metal screens over vents and underneath decks
- Installing double-paned or tempered glass windows with metal frames
- Boxing in eaves with non-combustible material
- Installing metal gutters and gutter guards

### **Next Steps**

After reviewing the contents of this assessment and its recommendations, the Wolf Creek Ranch's Firewise Board will create agreed-upon, area-specific solutions to the recommendations and update their action plan document. The next Action Plan due for Wolf Creek is in 2025.



To maintain national Firewise USA™ recognition status, Wolf Creek Ranch’s Firewise Board will integrate the following standards into its plan of action:

1. Maintain a local Firewise board/committee comprised of residents and other applicable wildfire stakeholders. This group will collaborate on developing the site’s risk reduction priorities, develop a multi-year action plan based on the risk assessment, and oversee the completion of the annual renewal requirements needed to retain an “in good standing” status. Action plans are a prioritized list of risk reduction projects/investments for the participating site, along with suggested homeowner actions and education activities that participants will strive to complete annually, or over a period of multiple years. Action plans are developed by the board/committee and need updating at least every three years.
2. At a minimum, each site is required to invest the equivalent of \$33.49 per dwelling unit in wildfire risk reduction actions annually (the rate is based on the 2024 annual National Hourly Volunteer Rate; which is updated every year in April when the new amount is published). Qualifying expenditures include contractor costs, rental equipment, volunteer activities, grants, etc. Residents completing select home modifications, along with any qualifying work performed at their home and in the adjacent ignition zones can contribute related hours and/or costs towards meeting the sites collective investment amount.
3. Each participating site is required to have a minimum of one wildfire risk reduction educational outreach event, or related activity, annually.
4. Every year participating sites must submit an annual renewal to maintain their “In Good Standing” status. The annual renewal application can be accessed through the Firewise USA™ online management portal (<http://portal.firewise.org/>)