

Stone House Assessment Narrative



Topography

The Stone House community is situated in the northwestern foothills of the Santa Rita Mountains, at approximately 3,000 feet in elevation. The topography of the area is defined by gently sloping terrain interspersed with natural desert washes, which serve as both drainage channels during monsoonal events and potential pathways for fire spread under dry and windy conditions. The community lies within a transitional zone between developed residential areas and open desert wildland. The rolling slopes and shallow arroyos create complex fire behavior potential, especially in areas where fuels accumulate in topographic depressions. Fire can be channeled upslope rapidly due to the preheating effect, and prevailing winds can accelerate fire spread through these natural corridors. The slope aspect and terrain shape may further intensify fire behavior, particularly during high wind events common in southern Arizona's fire season. This terrain also contributes to fuel continuity. The presence of non-native invasive grasses such as buffel grass and fountain grass—especially along slopes, washes, and roadside easements—creates continuous fine fuels capable of carrying fire into and through the community. The combination of slope, wind alignment, and flashy fuels significantly increases the potential for ignition and rapid fire spread. Furthermore, the proximity of structures to vegetated areas on uneven terrain reduces effective defensible space in some locations. Properties adjacent to slopes or near the mouths of washes are particularly vulnerable due to increased ember cast and the potential for slope-driven flame movement. Mitigation strategies should prioritize fuel breaks along topographic features that may channel fire, targeted removal of invasive grasses, and enhanced defensible space on parcels located on or adjacent to slopes. Additionally, community engagement in Firewise practices is crucial in addressing topography-related vulnerabilities and improving overall landscape resilience.

Vegetation

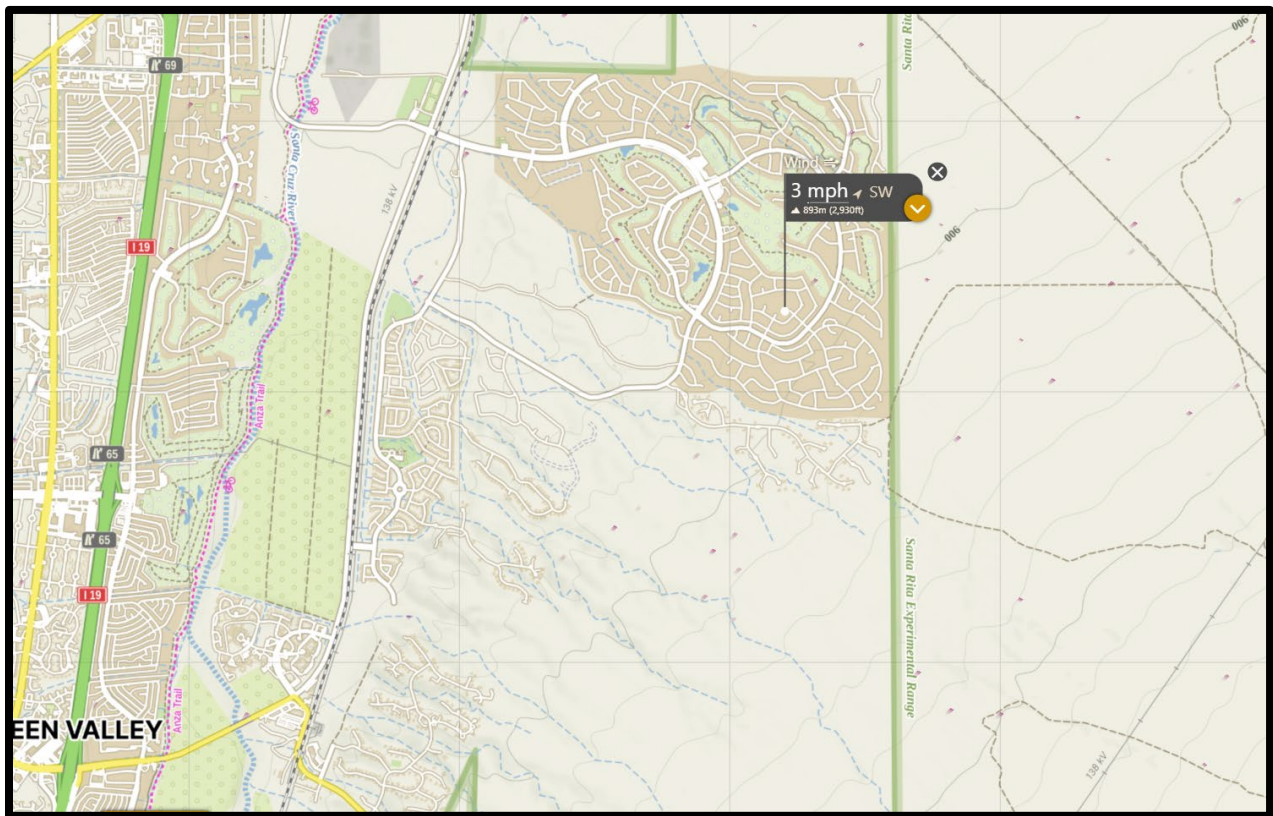
The Stone House community is characterized by a blend of native Sonoran Desert vegetation and ornamental landscaping associated with residential development. Native vegetation includes mesquite, Palo Verde, ocotillo, creosote bush, and various species of cacti. While many of these plants are adapted to arid environments and possess some fire-resistant qualities, they can still contribute to wildfire intensity under prolonged drought and high wind conditions. Of particular concern is the presence of invasive grasses such as buffel grass and fountain grass, which have established in open spaces, roadside easements, and along natural washes. These non-native species cure early in the season and create continuous, fine fuel beds that are highly flammable. Their presence dramatically increases the likelihood of rapid fire spread into and throughout the community, especially when aligned with wind and slope. Ornamental vegetation and unmanaged green waste around homes further contribute to structure ignition potential. Dense shrubbery, dry leaf litter, and ladder fuels in close proximity to buildings present a high risk during ember showers or surface fire movement. The overall vegetative makeup within the community presents a moderate to high wildfire vulnerability. Without routine maintenance, defensible space implementation, and invasive species management, the risk of ignition and structural loss remains elevated. Proactive measures such as fuel load reduction, removal of invasive grasses, regular landscape maintenance, and resident participation in Firewise USA® best practices are critical to improving vegetation resilience and reducing wildfire risk across the community.

Weather

The community experiences a typical southern Arizona desert climate, characterized by low annual precipitation, hot and dry summers, and seasonally high winds—all of which contribute significantly to wildfire risk. The region receives the majority of its rainfall during the monsoon season (July–September), but long dry periods in spring and early summer result in critically low fuel moisture levels. These pre-monsoon months—

April through June—represent the peak of fire season due to prolonged drought conditions, high temperatures often exceeding 100°F, and frequent red flag wind events. Strong downslope and channeling winds, especially through nearby washes and canyons, can exacerbate fire behavior by increasing flame lengths and pushing embers ahead of the fire front. Additionally, occasional winter freezes kill vegetation, contributing to seasonal fuel buildup when dead material is not cleared. In summary, the area's hot, dry, and windy conditions—particularly in late spring and early summer—create a highly volatile environment for wildfire ignition and spread. Preparedness and mitigation efforts must account for these seasonal weather patterns to effectively reduce wildfire risk.

Anticipated Fire Behavior



The Stone House community lies within a classic Wildland-Urban Interface (WUI) setting—where residential development meets undeveloped desert wildland. This positioning presents a heightened risk of wildfire impacts due to the interaction of vegetation fuels, sloped terrain, and human-built infrastructure. In this WUI environment, wildfires are anticipated to exhibit fast-moving surface fire behavior, primarily driven by the abundance of fine, flashy fuels such as buffel grass and fountain grass. These invasive species, common along washes, roadsides, and undeveloped lots, ignite easily and can carry fire rapidly through the landscape, often directly into developed areas. The presence of contiguous vegetation between wildland areas and homes increases the likelihood of structure ignition. The area's gently sloping topography and natural arroyos may act as fire corridors, channeling both flame and wind, and contributing to wind-driven uphill runs. During peak fire season, sustained southwest winds and dry fuel conditions can result in significant ember cast and spotting, with embers potentially igniting receptive fuel beds on roofs, gutters, or within landscaping—common ignition points in WUI zones. Without adequate defensible space and fuel separation, homes within the Old Stone House

community are susceptible to radiant heat exposure, direct flame contact, and ember intrusion. These factors, combined with limited access routes and dense parcel arrangements in some areas, create operational challenges for suppression efforts during an active wildfire event.

In summary, fire behavior within this WUI community is expected to be intense, fast-moving, and capable of threatening multiple structures in a short period, particularly under high-wind and low-humidity conditions common to southern Arizona’s fire season.

Recommendations

1) Assess the community’s preventative maintenance plan.

Embers from nearby wildfires often land on roofs, where they can ignite a blaze that quickly envelops the whole home. Continued education of homeowners on the importance of removing dead vegetation from the immediate zone will need to be an annual priority. Regular maintenance and spot checks should focus on roof tops, gutters, skylights, chimneys and eaves.

Roofs can be vulnerable to fire embers because of their large surface area and the accumulation of flammable debris. Embers are small, lightweight, glowing pieces of superheated material that can be carried miles away from a fire. When they land on dry debris, like leaves, pine needles, or twigs, they can ignite a new fire. This fire can then spread to the roof, roof sheathing, fascia, and adjacent siding.

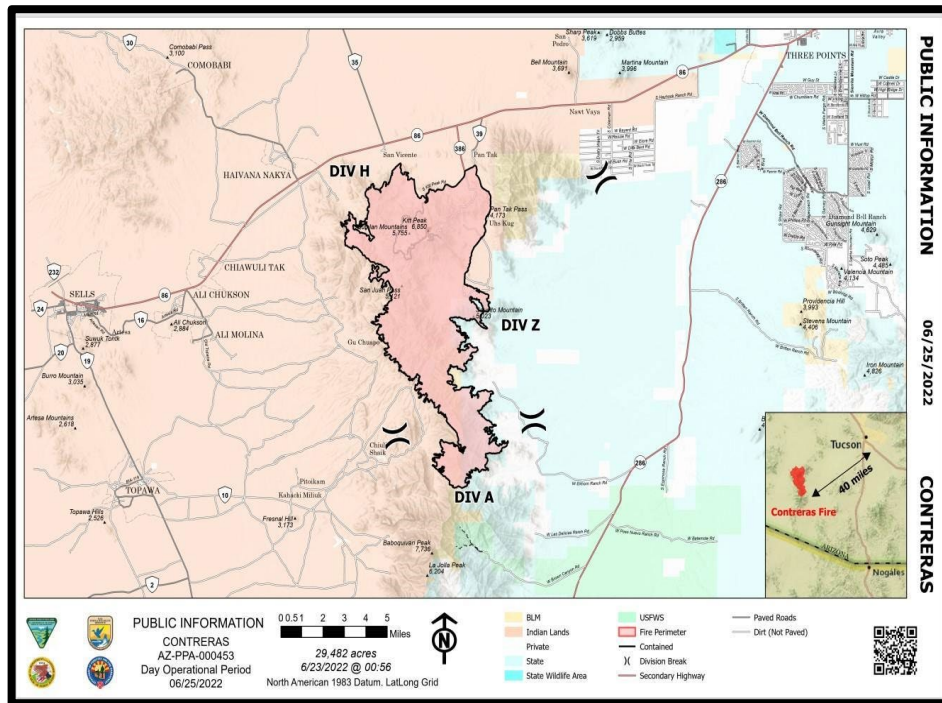
Wildland fire-to-building ignition resulting in damage or loss during wildfires occurs if the fire can burn directly to the building; either directly or indirectly from wind-blown embers (also known as firebrands) or from exposure to ember generated by the burning wildland vegetation. An example of loss due to indirect exposure is ember ignition. Ember ignition of vegetation debris in gutters and on the roof has proven to be a common cause of total structure loss. This reinforces the importance of maintaining an effective defensible space and regularly removing debris from areas on and near the home.



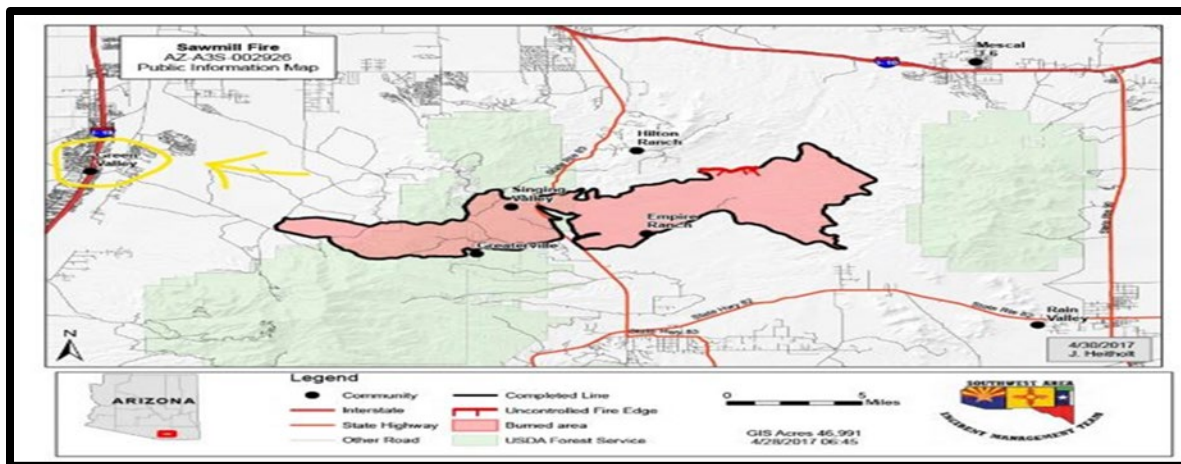
Fire History

In 2025, multiple wildfires on state, city, and federal lands were within several miles of the Community of Stone House. Fires include:

- **2023** Navarro Fire 2,306 Acres
- **2022**, Contreras Fire 8 miles SE of Kitt Peak Observatory which burned 29,482 Acres



- **2017**, Sawmill Fire 8 miles east of Green Valley which burned 46,911 acres





Vegetation in the Intermediate zone.

Vegetation in the Intermediate Zone (6 - 30 feet from structure) met Firewise recommendations. Tree/Canopy had good separation, Brush trimmed at 5' and grass area was mowed/maintained.



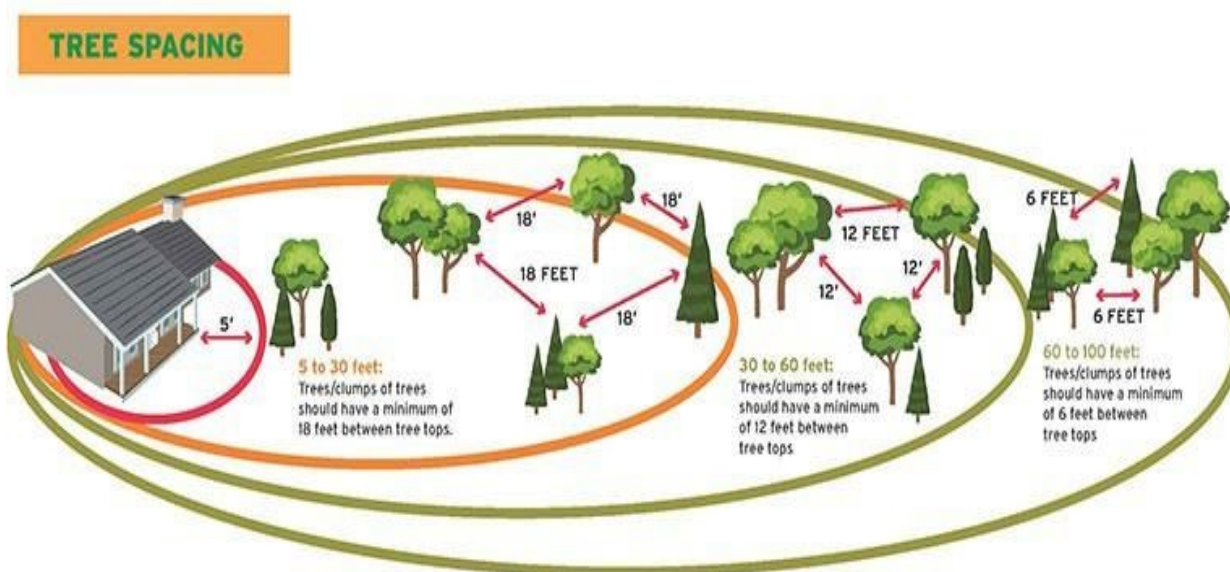
Vegetation in the Extended Zone

Grass and brush in the extended zone (30 – 100 Feet from Structure) Recommend making contact with land owner/manager to take steps to manage or maintain vegetation in areas near/adjacent to structures. Invite land owner/manager's to Firewise events to share information and collaborate on maintenance projects to increase defensible space and home ignition zone.

Recommendations

1) Continue to improve defensible space

To increase your home's chance of surviving a wildfire, choose fire-resistant building materials and limit the amount of flammable vegetation in the three home ignition zones. The zones include the immediate Zone: (0 to 5 feet around the house), the Intermediate Zone (5 to 30 feet), and the Extended Zone (30 to 100 feet).



Immediate zone

The home and the area 0-5' from the furthest attached exterior point of the home; defined as a non-combustible area. Science tells us this is the most important zone to take immediate action on as it is the most vulnerable to embers. START WITH THE HOUSE ITSELF then move into the landscaping section of the Immediate Zone.

- Clean roofs and gutters of dead leaves, debris and pine needles that could catch embers.
 - Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration.
 - Reduce embers that could pass through vents in the eaves by installing 1/8 inch metal mesh screening.
 - Clean debris from exterior attic vents and install 1/8 inch metal mesh screening to reduce embers.
 - Repair or replace damaged or loose window screens and any broken windows Screen or box-in areas below patios and decks with wire mesh to prevent debris and combustible materials from accumulating.
- Move any flammable material away from wall exteriors – mulch, flammable plants, leaves and needles, firewood piles – anything that can burn. Remove anything stored underneath decks or porches.

Intermediate zone

5-30' from the furthest exterior point of the home. Landscaping/hardscaping- employing careful landscaping or creating breaks that can help influence and decrease fire behavior

- Clear vegetation from under large stationary propane tanks.
- Create fuel breaks with driveways, walkways/paths, patios, and decks.
- Keep lawns and native grasses mowed to a height of four inches.
- Remove ladder fuels (vegetation under trees) so a surface fire cannot reach the crowns. Prune trees up to six to ten feet from the ground; for shorter trees do not exceed 1/3 of the overall tree height.
- Space trees to have a minimum of eighteen feet between crowns with the distance increasing with the percentage of slope.
- Tree placement should be planned to ensure the mature canopy is no closer than ten feet to the edge of the structure.
- Tree and shrubs in this zone should be limited to small clusters of a few each to break up the continuity of the vegetation across the landscape.

Extended zone

30-100 feet, out to 200 feet. Landscaping – the goal here is not to eliminate fire but to interrupt fire’s path and keep flames smaller and on the ground.

- Dispose of heavy accumulations of ground litter/debris.
- Remove dead plant and tree material.
- Remove small conifers growing between mature trees.
- Remove vegetation adjacent to storage sheds or other outbuildings within this area.
- Trees 30 to 60 feet from the home should have at least 12 feet between canopy tops.*
- Trees 60 to 100 feet from the home should have at least 6 feet between the canopy tops.*

Arizona Department of Forestry and Fire Management: Firewise Contacts

Regional Coordinator:

Name: Corey Guerin
 Cell: (602)-292-2612
 Desk: (602)-771-1404
 Email: Cguerin@Dffm.Az.Gov

Southeast District Manager:

Name: Lathe Evans
 Cell: (623)-309-9528
 Desk: (520)-628-5486
 Email: Levans@dffm.az.gov

State Liaison:

Name: Aaron Casem
 Cell: (602)-499-4271
 Desk: (602)-771-1403
 Email: Acasem@Dffm.Az.Gov

Southeast District Forester:

Name: Jessica Warner
 Cell: (623)-414-2545
 Email: JWarner@dffm.az.gov