

FOOTHILLS OBSERVER

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Fire and the Home Ignition Zone



This home survived by implementing a fuel break around the yard. This fuel break forced the fire to go around due to the unavailability of fuel.

We have all heard it before, the news reports of “catastrophic wildfires burning everything in sight” or “The fire consumed everything in its path” etc... So how are you supposed to protect your home from such a wild, all-consuming monster? Well the first step is to realize that these sensational reports are coming from journalists that took more creative writing classes than thermodynamic properties courses in college. The fact is that fire is not an ill-willed animal looking for victims; it is a natural process that is easily explained.

Fire is a phenomenon that requires 3 main ingredients, heat, fuel, and oxygen to sustain itself. If you take away any of these three components and you will not have a fire, period. Of these three, oxygen is the hardest to eliminate from the equation in a wildfire event because it is

naturally occurring in the Earth’s atmosphere and therefore is readily accessible for a fire. The other two components humans can influence and both are extremely important in preventing a home ignition.

Fuel is the material that is consumed during a fire. When fuel is heated to a certain temperature, it begins to break-down and emits volatile gasses which in turn ignite into flames. During a wildfire, trees, shrubs, needles, leaves, twigs, and other forest materials are the fuel. When this fire reaches a subdivision, suddenly this fuel becomes lawn furniture, brooms, scrap 2x4’s, decking, insulation, and eventually the homes themselves and everything inside.

Heat is another essential component of fire. In order for the fuel material to emit the volatile gasses needed for combustion, they need to be

heated. Different fuels require different amounts of heat but when dealing with forest materials the general rule is the smaller the fuel the less heat is needed. Pine needles and small twigs will ignite and combust with less heat than large logs. Just think of trying to start a campfire, a match doesn’t produce enough sustained heat to ignite a large log, but it can ignite a bed of pine needles.

So now our focus is on your specific house or cabin. Your house is the fuel and cannot readily be removed. Oxygen is plentiful in the atmosphere so it cannot be kept from the fire equation. That leaves us with heat. If you can keep the heat to a level that does not cause your structure to emit the volatile gasses, your structure will not ignite, guaranteed.

Now, you must look at where this heat will be coming from. The radiant heat from an approaching fire will be immense and if allowed to burn close enough to the structure will provide the required heat to ignite a home. Studies show that a large crown fire has to be within 30 meters or around 100 feet to directly ignite a wooden wall. By thinning forest fuels away from the structure, you can reduce this radiant heat to a point where it could not ignite the

structure.

Direct flame contact will also supply the needed heat to ignite a structure. This can be easily stopped by separating the structure from the surrounding fuels. A one foot wide barrier will often suffice at keeping flames from contacting the structure (remember anything connected to the house has to be considered part of the structure i.e. decks, fences, etc.). Keeping dry grasses mowed near structures will keep the flames at a minimum and thus will be easier to keep from larger fuels.

The final method is the most damaging and that is the heat that comes from burning embers. This burning debris can be thrown several miles from a fire and if your home is near a large fire it will most certainly be showered with burning embers. These embers can accumulate and provide sustained heat that can cause the material where it lands to ignite and burn. Roofs, decks, and firewood piles are the most susceptible to burning embers, but they

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Aspen Enhancement

Aspen are commonly thought of as a unique and very visually appealing tree; however, aspen also play a more serious role in the health of the forest and the survivability of your home in a wildfire.

Aspen is considered the second most important habitat type for wildlife in the Rocky Mountains. Aspen stands provide more forage than conifer stands and are home to a much greater abundance of wildlife. The bark and buds of aspen are a preferred food source for many big game species and provide a winter food source when snow levels are high.

Aspen stands are often described as an oasis when compared to the desert-like understory environment of many conifer stands, such as lodgepole pine. Aspen stands use less water than conifer stands, making more moisture available to plants on the forest floor. Aspen are less flammable than conifers and the plants within aspen stands generally have higher moisture contents than plants within conifer stands. Fires that burn through aspen stands are generally less intense and more easily suppressed than a fire in a conifer stand. Aspen stands also provide breaks in the canopy of a conifer forest and force a crown fire to the ground where it is more manageable.

Cattle and big game species feast on young aspen, often nipping them back annually and preventing them from growing beyond a foot or two in height. Conifer species also seed in aspen stands and eventually overtake the stand, out-competing the aspen for available resources. These conditions are slowly killing most aspen stands and preventing them from reproducing.

So what can you do to improve the health of aspen on your property and improve the growth of new trees?

First of all, an understanding of how aspen reproduce is necessary to successfully propagate a healthy aspen stand. Aspen are unique from most tree species because they reproduce by sending shoots up from the root system, also called suckering. Suckering is triggered when an aspen tree dies. The root system sends up many small trees to replace the leaf area of the tree that died. In many ways, this type of reproduction is a disadvantage. If aspen are lost to an area, they will not reproduce from seed like other trees.

Now that you have a basic understanding of aspen ecology and you have decided you want to save your aspen stands, the following steps should be made:

-Cut out all conifer trees from within aspen stands - All conifer trees should be removed that are found intermixed with mature aspen and/or aspen suckers. Aspen suckers often extend quite a distance out from the mature aspen; therefore, an extensive search of the area will be necessary to identify all conifers for removal.

-Cut down a proportion of the ma-

ture aspen to stimulate suckering - Cutting down approximately 1/3 of the mature aspen will trigger greater sucker production, hopefully increasing the proportion of suckers that grow past the reach of big game.

-If suckers are being continually nipped off by cattle or big game, fence around the aspen - To keep large animals out and prevent them from browsing on aspen suckers a fence around the aspen stand should be constructed.

-Do not feed big game - By feeding big game, you are attracting them to your property where they will continually graze on the aspen.

Aspen stands are critical to wildlife habitat, provide breaks in the conifers and are extremely valuable to the overall health of the forest. To ensure aspen is not replaced by conifers, homeowners must take an active role in managing their aspen stands. Much of the work necessary is difficult and time consuming; yet, the consequences of doing nothing could be devastating. For more information on aspen management, contact Wyoming State Forestry Division at (307) 856-8655.



The conifers in this aspen stand have been removed, improving conditions for the aspen

Fire Dynamics, cont.

can also be blown into attic vents and ignite insulation inside the structure. Remember these embers will pile up, often in the same spot as leaves do in the autumn (corners, gutters, etc.), and burn for quite some time. If they land on fine fuels they will easily ignite them which in turn will produce more heat and could lead to igniting larger materials and eventually the entire structure.

So what do you do now? By realizing that a fire needs heat, oxygen, and fuel, you can take a closer look at your house and try and address these issues. Remember unless you are home 24 hours a day, 7 days a week, a fire may start when you are gone,

so things that seem harmless may not be. For example, is there a broom on or under your deck? The bristles can ignite easily and cause fire spread. Do you have pine needles in your gutters? These can easily ignite and start the soffit and fascia on fire. Do you have dead leaf litter under your shrubs? Burning embers can be blown under and start these dried leaves on fire, which starts the shrub on fire, which starts the wall on fire, which starts the house on fire.

Homes do not just become engulfed in flames; the fire starts small and spreads quickly. So your focus has got to be on these small ignitions. Make it a habit to walk around your house frequently and look for possible ignition points,

you will be surprised at how many you find. Picture an approaching fire coming towards your house; will the radiant heat be enough? Will the flames touch your siding or fence? Will embers find a fuel source that they can ignite?

Remember, you are not helpless against a wildfire; it is not a supernatural beast looking for revenge. It is simply a natural process that cannot continue without heat, fuel, and oxygen. If you would like help assessing, or re-assessing your home, feel free to contact Fremont County Firewise at 307-857-3030 and we would be glad to assist you.



The fire triangle has been used in fire training for years. It is now being applied to homes located in fire prone areas.

Australian Fires and PSD

For the past few years there has been a push to look at implementing the Prepare, Stay and Defend method of dealing with wildfires in the urban interface. This as you may recall is the method that the Australians use and it has recently been placed under a microscope following the deadly fires in southern Australia.

Fire conferences across the county were inviting the Australians to come and speak about Prepare, Stay, and Defend (PSD), and there are even parts of California that have either adopted the practice or are pushing hard to have it adopted. Until this year, the Australians had a decent track record of avoiding large losses to life and property using the PSD method. Of course they have had their fire events too, but overall it was looking like PSD was a working program.

Basically in the U.S., our policy is to

evacuate the public out of a fire area and allow the firefighters to fight the fire. With PSD, the landowner makes the decision to leave early or stay and defend their property. The problems arise when properties are not adequately prepared and when the landowners decide to leave too late. Many of the fatalities were due to late evacuations and the high amount of structure loss shows that they were not properly prepared.

Several Australian fire chiefs recently spoke at a conference in Reno, NV and the basic consensus is that PSD may need to be tweaked a bit, but nothing will be done until the investigations are complete and the appropriate decision-makers have reviewed the facts.



Could you sit tight while this was barreling towards you? Last minute evacuations often lead to fatalities.

This will surely be a topic that is discussed for years to come in this country, especially due to our ever increasing wildland urban interface population and the ever decreasing fire department budgets.

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Fire Season Coming Soon

Here comes fire season again. This latest reprieve from the dry conditions has helped here in Fremont County, but all signs are still pointing towards a worse than average fire season.

Across the country, total fire numbers and acreages are up this year when compared to the 10 year fire average and the drought is still persisting throughout much of the West. Wyoming is no exception and the weather folks at NOAA are predicting a below average precipitation year with above average temperatures.

Residents of the South Pass area have not had a big event since the Pass Creek Fire a few years ago, Homestead Park has not seen a fire since the Homestead Park II fire of 2006, and even Union Pass has not had a major fire since the Purdy fire. What this can lead to is complacency and the idea that it

“can’t happen to me”. This is the most dangerous attitude that you can have when you live in a fire prone area.

Wildfire is a unique natural phenomenon, unlike hurricanes, earthquakes, tornadoes, and floods, wildfires are preventable. Of course not all wildfires are bad, but when they threaten areas that have become developed, they become unwanted. This damage that wildfires can cause to human development is preventable, but not if the residents and other responsible personnel become complacent.

Now is the time to start preparing for the upcoming fire season. The snow will soon be gone and as we all know it does not take long

for the grasses and forest materials to dry out and become flammable. Before we know it the temperatures will be reaching into the 80’s and 90’s and our wonderful afternoon thunderstorms will be rolling across the mountains.

