



## Land Use Changes Impact Watershed Health

If you've ever suffered from the debilitating effects of cedar pollen aka "cedar fever," you're likely to agree that eliminating all cedar from our watershed is a great idea. While controlling cedar is a great idea, eliminating it completely is not. A watershed is the entire land area that rainfall flows across or through before it is collected in rivers and creeks. Under ideal conditions, the land will filter this runoff and allow some water to percolate into the ground to feed our aquifer and springs system. Almost all the land area in Kerr County lies within the Guadalupe River watershed, therefore, the health of the river is directly connected to the health of our land.

The amount of rain a watershed can capture and store is highly influenced by land use practices in the region. Land covered by trees and grasses will soak up rainfall and produce less runoff than land covered by concrete, asphalt, or bare soil. Less runoff means a reduction in erosion and due to the filtering effect of the vegetation cover, fewer water quality problems. More water soaking into the ground also means more recharge to the aquifers. The Edwards Plateau aquifer in western Kerr County seeps water through numerous spring openings which join to form the headwaters of the Guadalupe River. If there's increased recharge to the aquifer, springs will flow stronger for longer periods of time and the river will continue to flow during periods of little or no rain.

Land use is simply how humans use the land. As our nation and county become more urbanized, areas covered by trees and grasses have decreased. Locally, land use changes have also altered the kinds of plants present and resulted in increased density of Ashe Juniper, or cedar as it is commonly called. Before people settled in Kerr County, two very powerful forces shaped the land: prairie fires and free-roaming bison. These factors encouraged grasslands in the flat prairie regions and kept woody vegetation, like cedar, in the slopes and canyons. The natural grassland plateaus were composed of deep-rooted grasses that increased organic material in the soil and helped the land absorb more water. As people settled in the region, the natural fires were suppressed and the free-roaming bison eliminated. As a result, grasslands retreated and gave way to brush and woody vegetation.

Over the last 200 years, the amount of cedar has increased across the landscape and has changed how the watershed captures and stores water. The cedar tree is very efficient at intercepting rain and can capture over ½ inch of rain before it reaches the soil. Converting land dominated by cedar trees to native grasslands is one strategy to enhance water resources. Clearing cedar is a labor-intensive process and is only the first step in restoring a healthy and productive grassland prairie. Even after cedar control has been done, multiple follow up treatments are necessary to prevent reestablishment because cedar seeds are very productive and can survive in the soil for decades. UGRA recommends that cut cedar is stacked and burned because felled cedar across the landscape will make follow-up cedar removal impossible and can be a fire hazard. Thick layers of mulched cedar will also prevent all vegetation regrowth and can lead to erosion. Reseeding of native grasses is often necessary to jumpstart the recovery process as well.

Cedar plays a vital role in our ecosystem because it is a native plant that thrives in our climate, supports wildlife, and can anchor steep slopes that only contain a thin layer of soil. Land covered by any type of vegetation is always better than bare soil for the health of the watershed and the Guadalupe River, so it's best to leave cedar on steep slopes. However, large tracts of land dominated by cedar don't maximize the land's ability to capture rainfall and support spring flow. Most landowners also want to use their land in ways not compatible with a monoculture of cedar. Since 2010, UGRA has worked cooperatively with other local agencies to support landowners through cost incentives as they manage cedar on their property. For more information on UGRA's Water Enhancement through Brush Management Program, visit [www.ugra.org](http://www.ugra.org) or call (830) 896-5445.

### **Let's Keep *Our* River Clean**

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