

Prescribed Burning Protects Texans and Benefits Wildlife

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Photo courtesy of Jay Whiteside, Texas Parks and Wildlife Department

Naturally, fire is an intimidating and powerful force. Fire is often portrayed in a negative and harmful way. As a society we are trained by figures such as “Smokey the Bear” to convince us of how wildfires are dangerous and detrimental to our nation’s natural resources. This poses a question: Is fire always bad? The majority of society acknowledges that fire, when used correctly, can be a good thing. Prescribed burning is a land management tool that follows guidelines that establish the conditions and manner under which fire will be applied on a specific area to accomplish specific management and ecological objectives (Alldredge et al. 2013). Prescribed fires prevent the buildup of dangerous fuel loads and the encroachment of different woody species on grasslands. Prescribed fires are also critical for maintaining habitat for quail, wild turkey, and other grassland birds. However, many citizens lack the resources and the “know-how” to execute a prescribed fire. Since the arrival of Europeans, the Great Plains region (Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas and Wyoming) has slowly transformed from a grassland landscape to a woodland landscape due to the suppression of fires. This has altered the services and resources that the grassland ecosystem provides. With these valuable resources depleting there is a need for a political and societal change. Education of society and the forming of burn cooperatives across the Great Plains region is just a couple of the ways that we can revive the issues that are arising with woody-species encroachment.

Grasses have been the prevailing vegetation type in the region we now know as the Great Plains region for the past 5000 to 8000 years (Twidwell et al. 2013a). Research has shown that there have also been periodic resurgences of woody vegetation such as Ashe Juniper (*Juniperus ashei*) and Eastern redcedar (*Juniperus virginiana*) throughout history (Twidwell et al. 2013a). These two species encroach and persist in areas where fires are not utilized as a land management tool. Even on areas that are burned, fires are usually conducted during the dormant season and fires may not get hot enough to kill junipers.

When these two juniper species expand, the ecosystem services provided by grasslands are slowly chipped away. Grasslands provide biodiversity and as junipers encroach, many plant species are lost with a resulting decline in grassland bird species. Many grassland birds are rarely seen once juniper exceeds 10% of land cover (Twidwell et al. 2013a). The encroachment of woody species on grasslands is also a major contributor to the decline in the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*). Grasslands also provide carbon sequestration, groundwater recharge [Juniper tree leaves intercept approximately 40% of rainfall, which is then lost to evaporation (Owens, 2008)] and livestock production. The Great Plains region contributes to nearly 50% of our nation's beef production.

Without fire and prescribed burns, many of these resources are suppressed or even completely removed from the ecological spectrum. Human prevention of fire has produced these consequences. Fragmentation of the Great Plains for agricultural and residential purposes has been the main source of the suppression of fire. The protection of people, property and infrastructure from wildfire is a serious concern that we must place as our first priority (Twidwell et al. 2013a). However, when looking at the consequences of the removal of fire in the Great Plains region, society must consider reforming policies and views towards fire and prescribed burning. There is a way to have prescribed fires and still protect people and infrastructure.

Research is filling critical knowledge gaps in resource management and dispelling many myths about prescribed fire. One of these knowledge gaps being filled is the timing and intensity of prescribed burns to combat invasive species. For example, Twidwell et al. (2012) found that conducting prescribed burns during the growing season (June) in a south Texas coastal prairie did not lead to an increase in exotic King Ranch (KR) bluestem (*Bothriochloa ischaemum*), which is notorious for spreading after dormant season fires. These growing season fires were also conducted during severe drought conditions. Other researchers have found that KR bluestem decreased after growing season fires (Simmons et al. 2007). These researchers also found that native forb species richness increased following growing season fires, which indicates growing season fires may be necessary to maintain or decrease exotic invasive species, while increasing native grasses and forbs. Other research is seeking to determine the various factors, such as fuel load and fire temperature, which would restore grasslands by killing encroaching woody plants, such as Junipers (Twidwell et al 2013b).

The problem is that growing season fires are limited by county burn bans, especially during droughts. Landowners also face increasing liabilities for using prescribed burns if they escape and damage a neighbor's property and/or infrastructure. Air quality and smoke mitigation concerns also constrain the ability of landowners to utilize prescribed burns on their properties. Prescribed burn associations/cooperatives (PBA) are becoming increasingly popular as more and more people realize the benefits of prescribed burning for wildlife and livestock management. PBAs are comprised of landowners and others who join together to form a network of cooperative members who seek to implement prescribed burning. PBAs members participate in training and educational events to improve their knowledge of fire behavior, safety, and suppression. They also enhance prescribed burning by pooling labor and sharing equipment. PBAs overcome labor limitations by having members help each other to conduct these prescribed fires. Often times these PBAs can form whole fire crews which makes the process of burning safer and more efficient. Inexperienced members gain experience by working with more experienced members of the PBA. Many members also choose to involve their children in the process of prescribed burning. This helps to pass along these practices to the next generation.

A great advantage of being part of a PBA with access to training, equipment, and labor is that some county officials in Texas have granted PBAs legal exemptions to conduct prescribed fires during burn bans. Changes like these show how education has increased awareness and demonstrated the need and value for prescribed burning. With education, public safety, and habitat restoration as the mission of PBAs, these groups are able to attain 501(c)(3) non-profit status, PBAs are eligible for grants

to purchase equipment and other resources to improve their operations. PBAs are becoming an necessary component to the continued restoration and management of our grasslands to the benefit of society.

For training resources and help locating a prescribed burn association near you, visit the [Prescribed Burn Alliance of Texas website](#). Be sure to also check out the [Prescribed Fire Community of Practice](#) for information through articles, frequently asked questions, and an “Ask the Expert” tool to connect you with prescribed fire experts.

Additional Resources

[Prescribed Range Burning in Texas](#) by Texas A&M AgriLife Extension Service

[Planning a Prescribed Burn](#) by Texas A&M AgriLife Extension Service

[Native Grassland Monitoring and Management](#) by Texas A&M AgriLife Extension Service

[Conducting Prescribed Fires: A Comprehensive Manual](#) by John Weir, Texas A&M University Press

Video: <http://youtu.be/r-VanyPG3QI>

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