

Photo by Hardy Jackson

The central thesis of game management is this: game can be restored by the creative use of the same tools which have heretofore destroyed it - ax, plow, cow, fire, and gun...; Management is their purposeful and continuing alignment. ~ Aldo Leopold, Game Management, 1933

Fire: The Prescribed Burn

Article by LORIE WOODWARD CANTU

EDITOR'S NOTE: This is the fifth installment in a six-part series examining Aldo Leopold's *Thesis of Game Management and its application in 21st Century Texas.*

In Leopold's game management tool box, fire is fire. In range and habitat management, the application of fire to the landscape is prescribed burning.

"Prescribed burning is the controlled application of fire to a predetermined area to achieve a land management goal," said Dr. Charles "Butch" Taylor, Professor, Regents Fellow and Research Station Superintendent, Texas A&M AgriLife Research - Sonora. "Notice I said the application of fire is controlled, but not the fire itself." While burn managers apply a prescription that includes wind speed, humidity, soil moisture, temperature, fuel load and more to determine when and where to set a fire, once the blaze begins, conditions can change rapidly, meaning that no prescribed burn can ever be considered routine, he said.

While fire suppression is the societal norm, Texas' plants and wildlife evolved

with fire.

"Smokey the Bear did his job too well," Taylor said. "He created a fire suppression mentality. I think if more people understood the role that fire plays in nature, the public would be onboard with prescribed burning."

For instance, grassland birds and mammals such as the Lesser Prairie-Chicken and pronghorn antelope that require open grassland habitat need fire to maintain their habitat. Many legumes, that provide nutritious vegetation and seeds, are stimulated by fire and reproduce more readily when their thick seed coats have been scarified by fire. Other plant species require smoke for seed germination. Burning stands of old grass not only releases nutrients back into the soil, but provides access to dormant seeds and exposes insects, vital elements in the food chain. Fire encourages production of

tender, nutritious new growth on woody species. And, the list goes on.

"Fire plays an important, but often overlooked, ecological role," Taylor said. "Depending on its application and the landowner's goals, fire can improve wildlife habitat, increase forage for livestock, clear out forest understory, manage fuel loads, maintain grassland savannahs, and enhance ecosystem functions."

He continued, "Fire is not a magic bullet, but it can be an extremely effective tool in a long-term land management plan."

Ideally, fire is integrated into a landowner's 30-year management plan, Taylor said. When the plan encompasses decades, it is possible to set a series of realistic goals such as burning 10 percent of a ranch over 10 years, meaning that the entire ranch has been burned and recovered within that time period. (Generally, burned pastures are taken out of grazing

rotation until the forage has recovered and reestablished itself.) Of course, that plan of burning and recovery assumes perfect weather conditions, which is never the case in Texas. It generally takes longer to accomplish a series of burns, because drought is an ever-present factor. In fact, because of the current drought, it has been five years since the staff has conducted a burn on the Sonora Experiment Station.

“When you are dealing with Mother Nature, she dictates the timeframe, not you,” said Taylor.

This holds true for getting ready for a burn as well. Some situations require a longer preparation than others. For instance, an ashe juniper-choked pasture with minimal grass cover and existing brush piles will likely take longer to put in order than a pasture of oxidized grass. Because of ashe juniper’s volatility, it is important to burn all of the brush piles and grow a fuel supply of herbaceous material before undertaking a prescribed burn. This can take several years. With the grass pasture, it may be possible to install fireguards and be ready to burn within a year.

“Successful burn managers prepare to burn when conditions are favorable,” he said. “Then, when conditions are right, they are ready to act in that often small window of opportunity.”

While burn managers may have to act quickly when the window of opportunity opens, a prescribed burn is not a quick fix. It requires extensive planning and experience.

“People have the misconception that a prescribed burn is as simple as lighting a drip torch,” Taylor said. “Nothing could be further from the truth. If landowners decide to initiate a prescribed burn, they assume all liability, if the fire gets away. That, in and of itself, signals the importance of being educated, experienced and prepared.”

Landowners who don’t have the experience to write and implement their own burn prescription can hire a certified prescribed burn manager to plan and conduct the burn on their behalf. Certified burn managers carry insurance and assume all liability.

The first step in the process, regardless of who conducts the burn, is having a clear goal.

“If someone calls me and asks me to

handle a burn for them, I immediately ask, ‘What are you trying to accomplish?’” he said. “It is important that people have realistic goals.”

To that end, he suggested that people who are new to prescribed burning visit places such as the Kerr Wildlife Management Area or the Sonora Experiment Station where prescribed burns, under many different situations, have been conducted for years. Seeing the different results derived from different combinations of factors can help people clarify their goals before they ever set a fire on their own property.

For many people, controlling brush is a land management goal. Most woody plants are adapted to fire, so land managers knock them back with a top kill, benefiting from a more open understory and fresh regrowth, Taylor said. In the Edwards Plateau, the only species that can be completely killed with fire are prickly pear, tasajillo and ashe juniper, he said.

The higher a fire’s intensity, the more effectively it kills woody species. Fires conducted in the heat of summer are known as warm or growing season burns, while those conducted in the cold temperatures of winter are called cool or dormant season burns. Generally, the most intense fires are warm season burns conducted during a drought, he said.

“Plant tissue is damaged by heat,” Taylor said. “When the air temperature is already 100° F in the summer, the fire compounds the damage. If the air temperature is 60° F in the late winter, the fire has to generate much more heat just to match summer

conditions.”

Once the goal is in place, the preparations begin in earnest. Fireguards have to be constructed. A fire plan has to be written and approved. County commissioners, sheriff’s departments, fire departments and neighbors have to be informed and their support enlisted. Equipment has to be collected. Experienced volunteers enlisted. Emergency contingencies outlined.

“Prescribed burning is not rocket science, but it is complicated,” he said. In a three-day prescribed burn school, Taylor estimates that at least a half day is just spent on the laws and regulations, both state and federal, governing prescribed burning.

In his estimation, one of the best sources of information and experience is local burn associations. These organizations, located around the state, are made up of people who are interested in applying fire to the landscape locally.

“Prescribed burning is equal parts art and science,” Taylor said. “Expertise comes from the school of hands-on, hard knock experience. Burn associations create a critical mass of knowledge about and enthusiasm for the practice of prescribed burning. These people are working together to put fire back on the landscape.”


For more information about prescribed burning, contact your natural resource professional at Texas A&M University AgriLife Extension or the Natural Resources Conservation Service. For more information on prescribed burn associations, contact the Texas Department of Agriculture at (800) 835-5832. 



Photo by Jeff Park

