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MDC offers help keeping unwanted trees and shrubs out of grasslands

Unwanted trees and shrubs can become an invasive nuisance in grasslands managed for wildlife, native plants, or cattle forage. Keeping prairies and grazing or haying meadows open for maximum benefits is a challenge for property managers. The challenge has been greater in recent decades in Missouri. Above average rainfall and rising carbon dioxide levels in the atmosphere are boosting shrub and tree growth at the expense of grasses and wildflowers, experts said recently at a workshop sponsored by the Missouri Department of Conservation (MDC) in Sedalia.

Recognizing that too many trees and shrubs are changing a grassland's ecology and removing or reducing them early in their growth is important, said Max Alleger, MDC wildlife ecologist. MDC is addressing the problem on public prairies, but staff can also offer expertise and guidance about cost-share programs for private landowners managing grasslands.

"It's easier to prevent problems, and cheaper, than it is to remediate," Alleger said. "If you don't get on it, you might have a problem you never recover from."

Less than one-tenth of one percent of Missouri's native prairie remains in scattered remnants. They hold beautiful and diverse plant species, which also support endangered, threatened, or dwindling grassland wildlife species, from prairie-chickens to regal fritillary butterflies. So, the people who manage public and private prairies work to keep the original ecological systems intact. Similarly, landowners managing native and non-native grasslands for forage need to keep unwanted trees and shrubs from reducing grasses and forbs nutritious for livestock.

The species and scope of unwanted woody vegetation cover can vary. So, professional land managers use a variety of approaches to control problems.

- Prescribed fire is a proven and relatively inexpensive tool for reducing unwanted growth, as native grasses and wildflowers evolved with fire. Their growth is often boosted by a prescribed burn, while woody stems are retarded or killed.
- Some large patches of shrubby growth may create moist soil and vegetation conditions that make fire ineffective. Mechanical equipment that can cut, chip, or shred growth can quickly eliminate a patch. Applying follow up prescribed burns in following years can keep growth at bay.
- Cattle rubbing on large trees or hanging out for shade can reduce vegetation under the tree and thus leave less fuel for fire, making fire ineffective in killing trees. They will need to be cut down or killed. Contractors with special equipment may need to be hired to eliminate large groves.
- Some native shrubs such as varieties of sumac, wild plum, or dogwood can begin choking out grasses and wildflowers if left unchecked. Professional land managers often use herbicide treatments with special equipment and seasonal timing to reduce their prevalence while not harming desirable plants.

The grasses, wildflowers, trees, and shrubs have competed through the ages for the intake of soil nutrients, water, and sunlight that will enable them to dominate an area. Humans altered factors in that battle by eliminating wildfire and removing some herbivores such as elk and

bison from the landscape. Thus, people now apply management practices to maintain grassland ecology. That requires time and money.

Weather is making grassland management more challenging, experts say.

Pat Guinan, Missouri state climatologist, said more than a century of climate data shows the state is experiencing unprecedented warming and rainfall trends. The growing season has been extended by two weeks. Despite some years with drought in some regions, an overall trend of above average rainfall is occurring in growing seasons. Evapotranspiration processes, sunlight removing moisture from soil and plants, has held down extreme high temperatures in summer, but that same humidity has elevated minimum temperatures at night.

Elevated carbon dioxide levels in the atmosphere are also boosting seedling growth of trees and shrubs, according to research conducted by Kansas State University at Konza Prairie. Tree encroachment can alter hydrology and reduce soil moisture and water levels in streams, said Jesse Nippert, biology professor at Kansas State.

The combined weather and atmospheric factors are helping shrubs and trees become more prolific invaders of grasslands, Alleger said, increasing the need for vigilance and controls by land managers.

For assistance in controlling woody vegetation in grasslands, call your local MDC office or visit https://mdc.mo.gov/property.