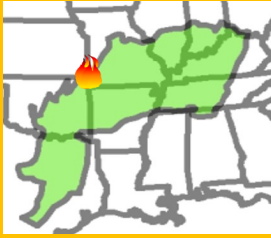


Marais des Cygnes and La Cygne State Wildlife Areas

FIRE SCIENCE HOT SPOTS



In this feature, we bring into focus
fire science on-the-ground

These wildlife areas are located in the Forest-Prairie Transition ecoregion within the Wooded Osage Plain physiographic region of Kansas. The areas are managed by the Kansas Department of Wildlife, Parks, and Tourism (KDWPT), an agency responsible for maintaining habitat for multiple game species. In the summer of 2015, a woodland restoration experiment was undertaken by the University of Missouri in partnership with the KDWPT and U.S. Forest Service. The objective of the experiment, which also serves as a demonstration area, is to assess the effects of various woodland restoration management practices on vegetation, structure, and fuels. Overstory trees primarily consist of chinkapin oak, post oak, and hickories, many of which express architectures of being historically open grown. At the beginning of the experiment canopies were closed and tree species showed conversion towards greater dominance of sugar maple and other more mesic and fire-intolerant species. Six treatments were tested to determine their effects on restoring open woodland structures and promoting the abundance and competitiveness of oak species and increased herbaceous diversity and ground cover. The six treatments tested were: control, burn only, thin to 60 ft²/ac basal area (BA), thin to 30 ft²/ac BA, thin to 60 ft²/ac BA & burn, thin to 30 ft²/ac BA & burn. All treatments were replicated on three different areas. Treatments were applied in the dormant season of 2015/2016 and remeasurements occurred in the summer of 2016. Establishment conditions and first-year post treatment results were published in a M.S. thesis by Mary Short (read it [HERE](#)). The study is intended to continue long-term, with burn treatments receiving continued prescribed fires.



2015



2016



2017

The oak woodland restoration experiment is replicated in three different areas, each comprised of about 35 acres. Within each area, the six treatments were randomly implemented. Basal area reductions occurred through cutting, girdling, and chemical treatments of undesired stems. To date, only a single, dormant season prescribed fire has occurred in the burn treatments. Above, the 2015 photo shows pre-treatment conditions. The 2016 photo shows the first year post-treatment conditions following cutting, girdling, and chemical treatment to a residual basal area of 30 ft² per acre and one fire. Mortality for many of the overstory trees was delayed. Consequently, light penetration through the canopy and ground

layer vegetation response continues to increase in the following year. This can be seen in the 2017 photograph depicting the second growing season conditions after initial treatments. In the spring of 2017, the Oak Woodlands & Forests Fire Consortium and KDWPT co-hosted a workshop for professionals and the public to view and discuss the treatments (lower left). Click on each photo for full-size images and to download (photo credits: lower left, Jacob Coulter (KDWPT), all others: Mary Short. For more information contact Mike Stambaugh, (stambaughm@missouri.edu).

