Tallgrass Prairie and Oak Savanna Fire Science Consortium

A JFSP KNOWLEDGE EXCHANGE CONSORTIUM

Ecological Effects of Fire in Savannas and Prairies:

A Comprehensive Fire Science Review for the TPOS Region

This synthesis is a valuable resource for anyone seeking information about ecological effects of fire in the tallgrass prairie and oak savanna region. Information and results from over 250 peer-reviewed publications are summarized here, including sections on soil nutrients, hydrology and ecosystem processes, vegetation, and animals. The Tallgrass Prairie and Oak Savanna Fire Science Consortium completed the literature review with Dr. Gary Roloff of Michigan State University.

Common themes

- The literature is dominated by studies of species-and site-specific responses
- Balancing short term vs long term effects (both positive and negative) is challenging for land managers
- Determining direct and indirect fire effects is problematic
- As with most ecosystem processes, overarching patterns can only be achieved with long term studies

Some of the Research Highlighted:

- The importance of restoring hydrology and soil conditions in addition to returning fire to restoration sites.
- How different species respond to the season in which prescribed fire is applied.
- Evidence that many prairie insects recover within two years of a burn, and the need for more information about fire effects on insects.
- The response of bird populations can be positive or negative, depending upon the species studied.
- Tree roosting bats may not be negatively impacted by low intensity fires.
- Changes in climate are likely to lead to an increase in hardwood species and overall decrease in plant diversity.

For more information on these topics, *Ecological Effects of Fire in Great Lakes Savannas and Prairies* is available to view or download here:
http://www.tposfirescience.org/research-syntheses/