



Fire ecology as a bridge to increasing the relevancy of monitoring data to managers

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MAIN QUESTIONS OR ISSUES THAT YOU ADDRESSED

We wanted to understand whether the disturbance regime at the Tallgrass Prairie National Preserve changed through our monitoring record and how that related to plant community data. We focused on bare ground, an indicator of disturbance intensity; woody plant guild abundance, a management concern; and floristic quality index, an indicator of plant community composition through time.

LOCATION AND ECOSYSTEM INVESTIGATED

Tallgrass Prairie National Preserve, Strong City, KS. We focused on tallgrass prairie.

KEY FINDINGS OF YOUR RESEARCH

Cattle stocking rates and fire frequency and time since fire declined in the latter half of the monitoring record. We also observed a decline in bare ground over the record. The woody plant guild increased in the latter half of the record, driven by observations in one pasture. The floristic quality index was relatively stable through the record with the exception of a decline for the last monitoring event (2014). We suggest two possibilities for the decline, but future monitoring events will be needed to clarify the trend.

HOW DID YOU ANSWER THE MAIN QUESTIONS OR INFORM THE ISSUES?

We first assessed stocking rate between two periods of time statistically. We assessed changes in fire frequency and time since fire visually (spatially and graphically) using the same time frames. We then used non parametric techniques to analyze monitoring site data (2002-2014) for bare ground, woody plants, and Floristic quality index.

HOW MIGHT/WILL IT INFLUENCE FIRE MANAGEMENT DECISIONS OR PRACTICES?

Knowledge of how the change in disturbance intensity (fire and grazing regimes) was reflected in key vegetation metrics can be used to develop future goals for fire return intervals and stocking rates. The trend in woody plant abundance is important and may warrant additional monitoring approaches. The stability of the plant community despite the changes in disturbance indicated a resilient landscape.

WHO IS THE MAIN END-USER OF YOUR RESEARCH?

We expect that preserve management staff will be the end users but supporting scientists and fire management staff may also be interested in the results. Monitoring staff will build on the FQI data to better understand how to account for the 2014 decline in the future.

CONGRESS SESSION

Fire Ecology and Effects

