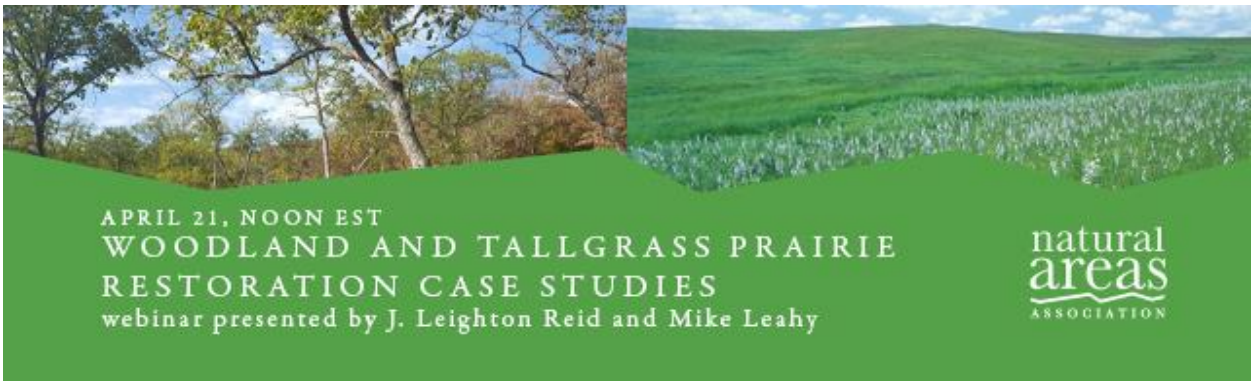

J. Leighton Reid
Assistant Professor,
School of Plant and Environmental Sciences, Virginia Tech
Research Associate, Missouri Botanical Garden

Bio: Leighton Reid teaches undergraduate courses in Ecological Restoration and studies ecological restoration in a variety of ecosystems including tropical forests in Costa Rica and Madagascar, temperate woodlands in Missouri, and southeastern grasslands in Virginia. Leighton's main strengths are in community and landscape ecology, and he has worked with a variety of taxa including birds, bats, rodents, trees, epiphytes, and ground-layer herbaceous plants. He tries to approach restoration holistically and produce research that is useful for or at least interesting to practitioners. Leighton earned his BS at Sewanee and his MA and PhD at the University of California Santa Cruz. Prior to joining the faculty at Virginia Tech, Leighton spent a year studying Douglas fir forest restoration at Oregon State and five years as a postdoc and assistant scientist at Missouri Botanical Garden.

Abstract: Temperate woodlands are one of the world's ecosystems in greatest need of ecological restoration, but relatively little is known about their floristic recovery dynamics over decadal timescales. From 2000 to 2012, we monitored understory plant communities in a woodland mosaic in Missouri, USA, as it underwent restoration via prescribed, dormant-season burning and mechanical thinning of red cedar (*Juniperus virginiana*) and exotic shrubs. Native species richness increased linearly by 36% over this time period, driven primarily by an influx of forb species in thin-soiled upland areas where red cedar was removed. Floristic quality also increased with differential dynamics across local communities; forest floristic quality saturated quickly whereas floristic quality increased gradually over the time series in woodlands and red cedar–dominated woodlands. Species that underlay these patterns were mainly ruderal or matrix forbs and grasses with little dependence on intact, undisturbed habitats. In contrast, conservative species were rare or absent. This case study suggests that understory plant recovery dynamics may be slower in harsher and more degraded sites and faster in more mesic sites within a woodland mosaic. Our observations set a benchmark for woodland understory plant recovery dynamics and indicate that a future restoration challenge is to prioritize the managed translocation of dispersal-limited, conservative species.

J. Leighton Reid, Nels J. Holmberg, Matthew Albrecht, Sandra Arango-Caro, Olivia Hajek, Quinn Long, and James Trager "Annual Understory Plant Recovery Dynamics in a Temperate Woodland Mosaic during a Decade of Ecological Restoration," Natural Areas Journal 40(1), 23-34, (14 January 2020) https://doi.org/10.3375/043.040.0104.

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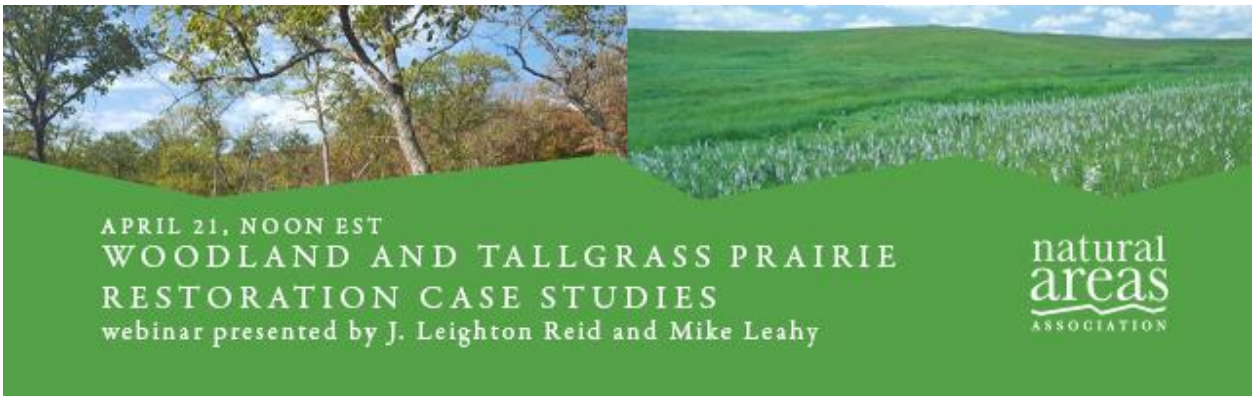

Mike Leahy
Natural Community Ecologist
Missouri Department of Conservation

Biography: Mike has worked for over 25 years for state natural resource agencies in Indiana, Virginia and Missouri. For the past thirteen years he has been the natural areas coordinator for the Missouri Department of Conservation as well as their acting Natural Heritage Program ecologist. Mike has written many technical and popular articles on aspects of natural history in the states he has worked in. Mike has a Bachelor of Science degree in Forestry from the University of Wisconsin-Stevens Point and a Master of Science degree in Forest Ecology from Michigan State University. He lives in Jefferson City with his wife and son and enjoys exploring the outdoors with his family and friends.

Abstract: In 1996 the Missouri Department of Conservation purchased Pawnee Prairie, a 190-ha mix of remnant tallgrass prairie and formerly row-cropped prairie with varying degrees of *Festuca arundinacea* invasion and past cattle grazing intensities on rolling terrain in the central dissected till plains ecological section. Management actions implemented over the following 20 y included prescribed fire, herbicide treatments of invasive nonnative species, and seeding of local ecotype prairie seed. Concurrently, four vegetation monitoring transects were sampled for plant species composition and cover five times between 1996 and 2017. Each of the transects increased significantly over time in the following per-quadrat means: % native plant species cover, plant species conservatism, and cover-weighted plant species conservatism. At the site level, native grasses increased by 22%, nonnative grasses declined by 76%, native forbs increased by 91%, nonnative forbs declined by 94%, and native sedges declined by 37%. In 1996 the top species in importance value across all transects included weedy native species (e.g., *Dicanthelium lanuginosum*) and nonnative species (e.g., *Daucus carota*). By 2017 the top species had transitioned to characteristic prairie species (e.g., *Schizachyrium scoparium*). Ordination results documented compositional trends across all transects toward greater native species richness, cover, and species conservatism values. At Pawnee Prairie, 20 y of sustained prairie reconstruction and restoration practices applied across an area of differing land use histories resulted in significant gains in the natural quality of the site's vegetation, including a greater abundance of prairie flora matrix species and some conservative species.

Mike J. Leahy, Steven Buback, and Calvin J. Maginel III "Twenty Years of Tallgrass Prairie Reconstruction and Restoration at Pawnee Prairie Natural Area, Missouri," Natural Areas Journal 40(1), 62-71, (14 January 2020) https://doi.org/10.3375/043.040.0108 **Open Access**.

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