

## AGRICULTURE

### **An Evaluation of the Use of the Western Harvest Mouse as an Indicator Species in Indiana**

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Climatic and anthropogenic influences have altered wildlife habitats throughout the world. Habitat re-establishment and management are vital for the persistence of Indiana prairie biomes. An easy method for assessing the health of an ecosystem is detection of endemic or “indicator” species of an area. An example of a prairie indicator species in the western United States is *Reithrodontomys megalotis*, the Western Harvest Mouse (WHM), as it is a grassland specialist. Its small stature allows it to gather seeds from the tops of prairie grass stems. WHM have recently been discovered in Indiana and are a species of special concern. However, very few studies have investigated their ecology and behavior. The objective of this research is to determine whether WHM can be used as an indicator species of prairie health in Indiana. Four sites at the Purdue Wildlife Area where WHM had been previously documented were live-trapped in the spring and

fall for three years with intermittent prescribed burns and brush-hogging events to favor tallgrass vegetation growth. Vegetative surveys were conducted both at locations where WHM were captured and at an equal number of random, non-WHM capture locations. Logistic regression analysis did not detect any significant correlation between WHM and specific microhabitat characteristics. However, WHM persisted in all sites that are mid-late successional prairies (areas with dense ground debris in addition to tallgrasses) but were absent in sites encroached by woody vegetation. This may support their use as an indicator species of prairie health in Indiana.

*Research advisor Patrick Zollner writes, “Understanding the utility of Western Harvest Mice as indicators of prairie restoration requires years of data collection and vegetative management. Such efforts provide insights into the ecology of these mice at the eastern edge of their range as well as a broader perspective on efforts to restore rare prairie ecosystems.”*