



Research Summary

Developing a Plan to Restore and Enhance Native Habitats for Pollinators Along Tennessee's Interstate and Highway Systems



WHAT WAS THE RESEARCH NEED?

Prior to European settlement, Tennessee once contained 7.1 million acres of naturally open grasslands, but most of the state's grasslands have declined by more than 90 percent. The remnants that still exist now persist only in powerline corridors or along roadside margins, and even these are rapidly declining because of shifts in management techniques of these rights-of-way, especially in the widespread use of herbicides. In its

current state, this will contribute to ecological collapse that will spell disaster for many animal species that depend on these systems, from mammals to birds to pollinators. To address this crisis, this project was initiated to locate and document areas on rights-of-way that consist of either high quality grassland remnants or areas that are candidates for restoration and find strategies for conserving these important sites.

WHAT WERE THE RESEARCH OBJECTIVES?

The research project had three primary objectives:

1. Conduct a status assessment of native roadside pollinator habitat along Tennessee's interstate and highway system.
2. Develop a strategy for how to better manage and restore native roadside pollinator habitat in the various regions of Tennessee.
3. Install a highly visible prairie restoration that would serve to enhance public awareness of the importance of transportation corridors to pollinators, wildlife, and native plants.

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TDOT Lead Staff:

Michael McClanahan
Environmental Division

Principal Investigator(s):

Cooper Breedan | Co-PI
Southeastern Grassland
Initiative

Dwayne Estes | Co-PI
Austin Peay State
University

Project Term:

December 2018 to
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WHAT WAS THE RESEARCH APPROACH?

The research team had a 3-step approach: 1) Status Assessment, 2) Management Plan, and 3) Demonstration Prairie. First, a baseline inventory of Tennessee's interstate and highway system was conducted to identify and document remnant grassland habitat as well as other areas to target for restoration and/or re-creation. A large component of the status assessment consisted of developing a Community Science program which the Southeastern Grasslands Initiative (SGI) called Rubbernecking for Roadside Grasslands. Second, the researchers prepared a management plan, which consisted of identifying ecologically important sites and working with the appropriate regional TDOT staff to deliver management and protection recommendations for those key sites. Lastly, a highly visible prairie restoration was installed that served to enhance public awareness of the importance of transportation corridors to pollinators, wildlife, and native plants.

WHAT WERE THE FINDINGS?

The key findings of the study included:

- Current maintenance practices are not conducive to native remnant habitat. The most damaging are broadcast herbicide application and frequent mowing regimes. This impacted the research team's ability to locate remnants as many areas that were targets for surveys had recently been mowed, making it impossible to distinguish the habitat.
- There are many remnant habitats that still exist on Tennessee's highway system, but action will need to be taken soon to prevent them from degrading or disappearing. Invasive species are an increasing problem.
- The conditions of each site are unique and may require a specially tailored management prescription. This may be due to terrain, degree of invasion, soil, or other factors.

IMPLEMENTATION AT TDOT

The research team had the following recommendation to TDOT:

- A follow up survey effort ought to be pursued to locate more sites as the research team believes many more remnant habitats are yet to be discovered.
- There are many areas where wide swaths are being frequently mowed but given their proximity to natural and/or public areas, there exists an opportunity to enhance the scenic and educational value by either changing the management and/or restoring the site into a long grassland pollinator corridor. This would create a scenic conservation corridor.
- There are ample opportunities to forge partnerships with a variety of partners by which TDOT can magnify its impact on grassland ecosystem conservation. This will not only increase their impact on pollinator conservation, but on the greater ecosystem that depends on grasslands.

MORE INFORMATION

Find the final report here: https://www.tn.gov/content/dam/tn/tdot/long-range-planning/research/final-reports/res2019-final-reports/RES2019-09_Final_Report_Approved.pdf.