

Public Perceptions of Pollinator Perfection¹

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Introduction

Roads made up 4.23 million miles in 2022 in the United States and are expected to increase 60% globally by 2050, which would be enough to encircle the Earth more than 600 times (Laurance et al., 2014; Laurance & Arrea, 2017; United States Department of Transportation, 2022). Given their extent, roadsides are being recognized for their potential to provide quality pollinator habitats and stabilize pollinator populations (Braman, 2022; Cariveau et al., 2019; Cass et al., 2022). Pollinator-friendly roadsides are designated areas along roads that are managed to support pollinator populations and provide essential resources (Minnesota Department of Transportation Research, 2022). Despite growing evidence of the value of these spaces, establishing pollinator-friendly roadsides is generally not supported among members of the public who drive along these roadsides daily (Hopwood et al., 2015a).

The study discussed in this publication was conducted to gauge public perceptions and identify ways to increase support for pollinator-friendly roadsides. The objectives of this study were to: 1) Evaluate existing knowledge pertaining to pollinator-friendly roadsides; 2) Assess perceptions associated with pollinator-friendly roadsides; 3) Quantify concerns pertaining to pollinator-friendly roadsides; and 4) Identify information-seeking preferences regarding pollinator-friendly roadsides. A survey with Florida residents was conducted to address each of these objectives. The purpose of this publication is to provide results from this study specifically to increase understanding of public perceptions of pollinator-friendly roadsides. Our target audience is Extension professionals, state agency professionals, nongovernmental organizations, and other practitioners tasked with educating the public about the management and horticultural decisions for pollinator-friendly roadsides.

Key Findings of Study

- Floridians have strong knowledge about environmental and ecological aspects of roadsides, but less knowledge when it comes to the actual management of pollinator-friendly roadsides.

- Respondents ranked environmental and ecological elements as more important characteristics of pollinator-friendly roadsides than aesthetics.
- Aesthetics were ranked the least important characteristic, meaning respondents may tolerate a “messier” appearance to have the benefit of the environmental and ecological characteristics.
- A major concern of the public is that pollinator-friendly roadsides will increase the possibility of vehicular accidents with wildlife.
- Educational communication was of interest, mainly in the form of an interactive demonstration garden (e.g., at a rest stop or welcome center).

Pollinator-Friendly Roadsides

Urbanization has led to extensive road networks that are expected to increase globally by 16 million miles by 2050 (Liang, 2023). Due to this expansion, pollinator habitats are increasingly being destroyed, removed, and fragmented, highlighting the urgent need for pollinator-friendly roadsides to mitigate these impacts (Liang, 2023). Evidence shows that roadsides as linear landscapes can link fragmented habitats and support pollinators by establishing diverse, flowering vegetation that provides more pollen and nesting sites for specific pollinators (Hopwood et al., 2015a; Hopwood, 2008). Roadsides featuring native wildflowers offer prime environments for pollinators when managed carefully through mowing, herbicides, and other tools (Baker, 2023). Pollinator-friendly roadsides are designated areas along roads and highways that are managed to support pollinator populations by providing essential resources such as food, shelter, and nesting opportunities (Minnesota Department of Transportation Research, 2022).

The Importance of Public Perceptions

The global decline of pollinators has led to efforts to aid pollinators. Humans have significant potential and capability to improve pollinator health and population (Liang, 2023). However, this capability remains underutilized due to limited public understanding and awareness of pollinator-friendly roadside practices (Stout

& Dicks, 2022). Knowledge and awareness of pollinator decline and potential aid efforts have improved in recent decades (Pipkin, 2023). Even so, public perception can be critical of these types of management practices, especially during dormant seasons when roadside plants appear dead. If the public does not support pollinator-friendly roadsides, decision-makers are unlikely to implement these management practices and may instead return to traditional roadside management (Hopwood, 2015a). To address these concerns, awareness can be increased through demonstrations of pollinator gardens at public rest areas, pollinator-friendly events, accessible information, and volunteer programs (Pollinator Partnership, 2024). Understanding public concerns, such as aesthetics and safety, is essential for gaining support and effectively promoting these initiatives (Phillips et al., 2020).

Our Approach

We developed a survey using Qualtricssm and distributed it online to Florida residents using a third-party consultant company. This study ran from December 6, 2023, to January 8, 2024, and we received 1,011 responses. We used quota sampling to obtain respondents who matched Florida's demographics of gender, age, ethnicity, and race according to the 2020 U.S. Census. There were five sections to the survey.

The first section measured perceived knowledge, where two questions measured awareness and four measured knowledge. Response options ranged from “*strongly disagree*” to “*strongly agree*.” The second section measured actual knowledge using five true or false questions. The third section measured perceptions by asking the importance of ten different items where the answers ranged from “*not at all important*” to “*extremely important*.” To assess perceptions, we asked four different questions based on a semantic differential scale (for example, “*stressful*” to “*calming*”). The fourth section listed eight concerns and asked if the respondent was concerned about each item. If respondents answered “yes,” they were asked a follow-up question to see how concerned they were from “*only slightly concerned*” to “*extremely concerned*.” The final section gathered information-seeking preferences by asking the respondents to indicate the effectiveness of ten different ways of receiving information about pollinator-friendly roadsides. Possible answers ranged from “*not at all effective*” to “*extremely effective*.”

Results

The following list includes the knowledge, perceptions, concerns, and information-seeking highlights from the results of this study.

Knowledge

- When asked if aware of “ecological benefits” and “socioeconomic benefits” of pollinator-friendly roadsides, respondents revealed a higher awareness.
- They had the lowest knowledge of how staffing and funding decisions are made in pollinator-friendly roadside management.

Perceptions

- Respondents ranked ecological (providing habitats for pollinators and wildlife) and environmental (improving air quality, storm water runoff prevention, and carbon sequestration) benefits as the most important aspects of pollinator-friendly roadsides.
- Aesthetics were ranked as the least important aspect of pollinator-friendly roadside management.

Concerns

- Over half of respondents were concerned that pollinator-friendly roadsides would increase vehicular collisions with wildlife and/or affect taxpayer expenses.
- In general, respondents felt positively about pollinator-friendly roadsides.

Information-seeking Preferences

- Respondents preferred to learn about pollinator-friendly roadsides through demonstration gardens at welcome centers and rest stops.
- The most preferred social media platforms for seeking information on pollinator-friendly roadsides were YouTube and Facebook.
- YouTube, Facebook, Instagram, and TikTok were all indicated as very effective platforms for learning about pollinator-friendly roadsides.

How to Use This Information

Companies and individuals tasked with promoting pollinator-friendly roadsides should use communication strategies that highlight elements roadside drivers value (e.g., environmental and ecological characteristics) while also alleviating their concerns, such as accidents due to wildlife and cost implications. It has been proven that pollinator-friendly roadsides are linked to cost savings and that there is a lack of relationship between pollinator-friendly roadsides and wildlife vehicular accidents. Explaining this while also emphasizing the environmental and ecological elements will help to resolve the misconceptions and garner support.

Delivering the appropriate and desired information needs to be done in the correct way for communication strategies to be effective. Communication and signage should be placed near the actual pollinator-friendly roadside as this type of management is being implemented. Signage should inform drivers and passengers of the different plants within the pollinator-friendly roadside and the benefits the

plants provide to communicate how these pollinator-friendly roadsides “work.” As these projects are being implemented, we also recommend creating a digital version of the journey along a pollinator-friendly roadside so the public can test and experience what the drive will look and feel like.

Summary

This research generated specific information that Extension professionals, state agency professionals, nongovernmental organizations, and other practitioners tasked with educating the public about making horticultural decisions about pollinator-friendly roadsides can use to understand and address the public’s opinions and concerns about pollinator-friendly roadside management. This audience can now take what has been learned and communicate properly and effectively with the public. Effective communication of the desired information to the public can help pollinator-friendly roadsides garner the support they need to have a chance at implementation.

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