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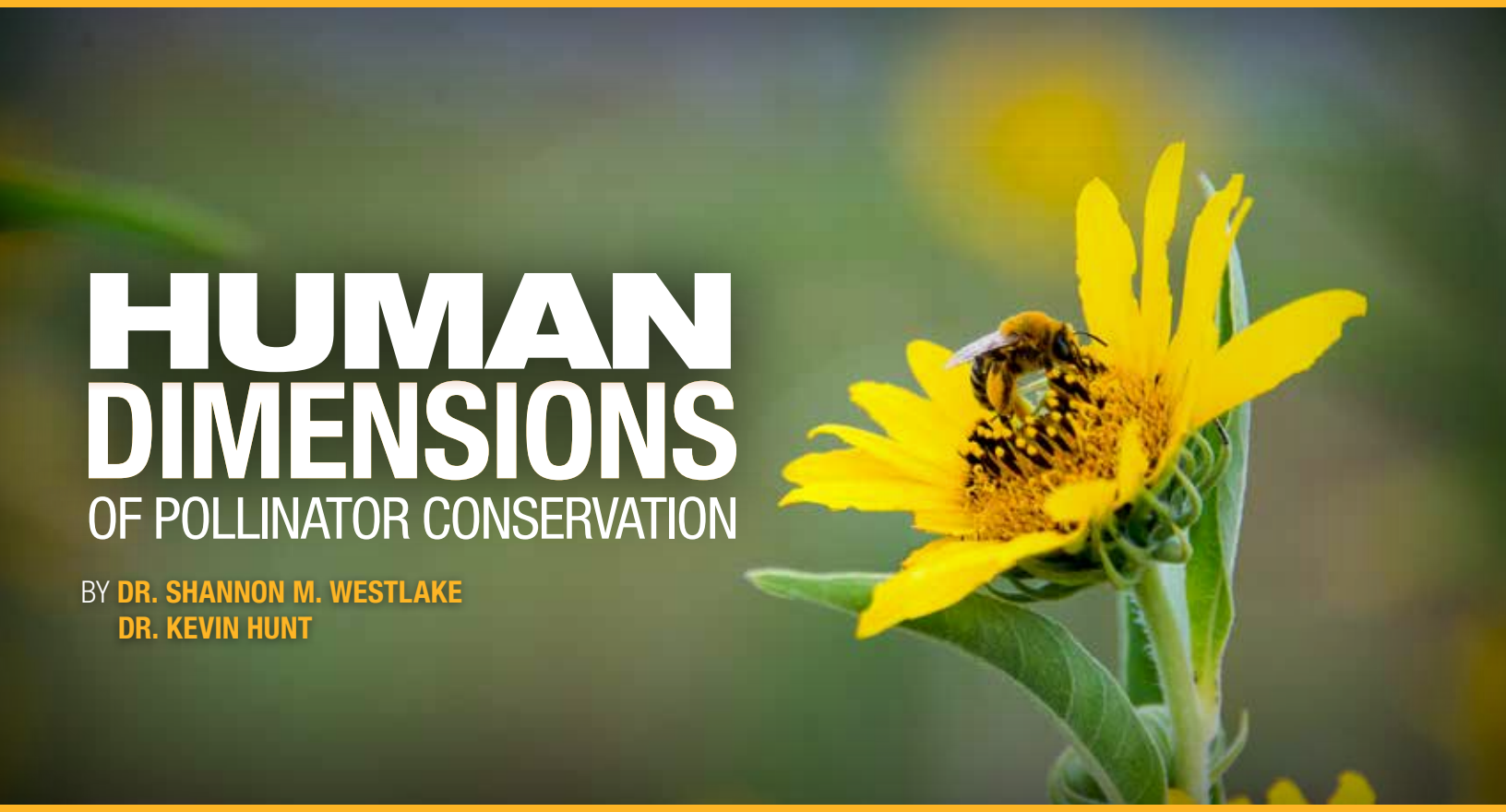

HUMAN DIMENSIONS OF POLLINATOR CONSERVATION

BY DR. SHANNON M. WESTLAKE
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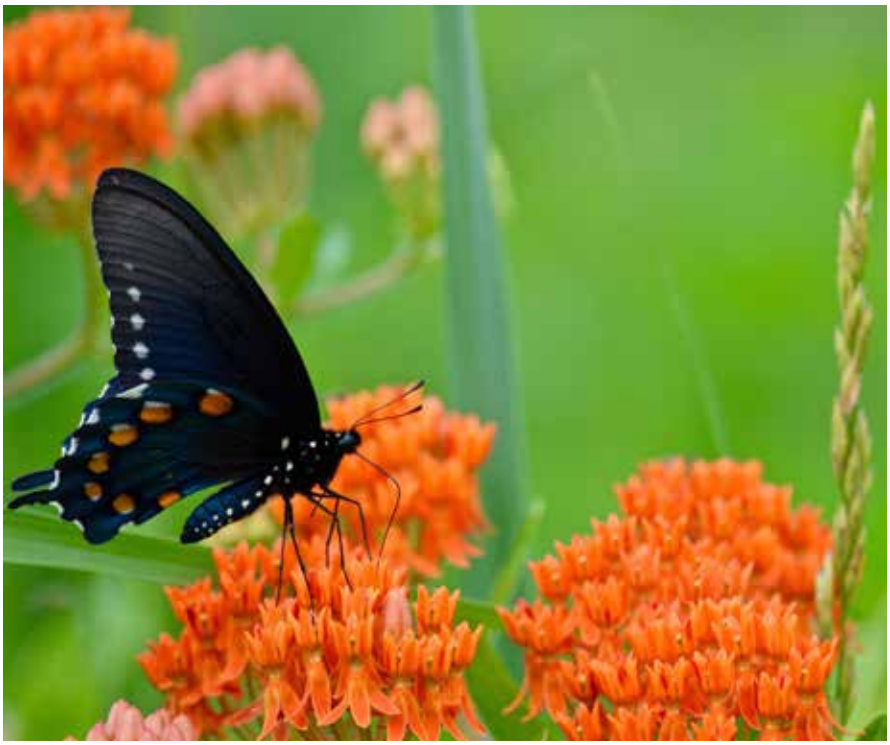
Native insect pollinators, such as bees, butterflies, and beetles, provide numerous benefits in landscapes by pollinating food crops and other flowering plant species and by serving as a food source for other wildlife. Unfortunately, pollinator populations have been declining because of lost forage and nesting habitat, caused primarily by intensified land use practices. Since the majority of land in the United States is in private ownership, landowner involvement in pollinator conservation is essential. Governmental and non-governmental organizations have developed ways to support pollinators on public and private lands; however, according to published literature, there has been low adoption of the promoted best management practices for pollinators (BMPs).

In Mississippi, the top agricultural commodities (e.g., poultry/eggs, forestry, and soybeans) do not directly depend on pollinators. Fortunately, BMPs that support the type of habitat necessary for native pollinators, such as cover crop usage and field border creation, provide additional benefits including erosion control and improved soil and water quality. Therefore, the adoption of pollinator BMPs is advantageous to Mississippi landowners.

To advance knowledge and adoption of pollinator conservation efforts and engage private landowners, it is important to understand what individuals already know about pollinator BMPs and what is constraining their adoption. This research framework allows important questions to be answered, including:

1. What is the current state of pollinator BMP adoption in Mississippi?
2. What landowner attribute has the strongest influence on intentions to adopt pollinator BMPs in the future?
3. Can targeted recommendations for education and outreach be developed based on landowner responses to surveys?

Photos by Shannon Westlake



METHODS

To answer these questions, **Shannon M. Westlake,** a former doctoral student, investigated landowners' attributes and pollinator BMP adoption as part of her dissertation research. Westlake used a mail survey to question 4,000 Mississippi landowners who owned more than 25 acres. Landowners were asked about their knowledge, attitudes, social pressures, perceived constraints, and intentions to adopt nine pollinator BMPs. Additional questions were asked about their previous conservation behaviors and how they obtain information on general land management practices. Responses were reviewed to determine what was primarily influencing landowners' intentions to adopt pollinator BMPs. Landowners were also grouped based on similarities in behaviors and land use type, which assisted in the development of targeted educational and outreach recommendations.

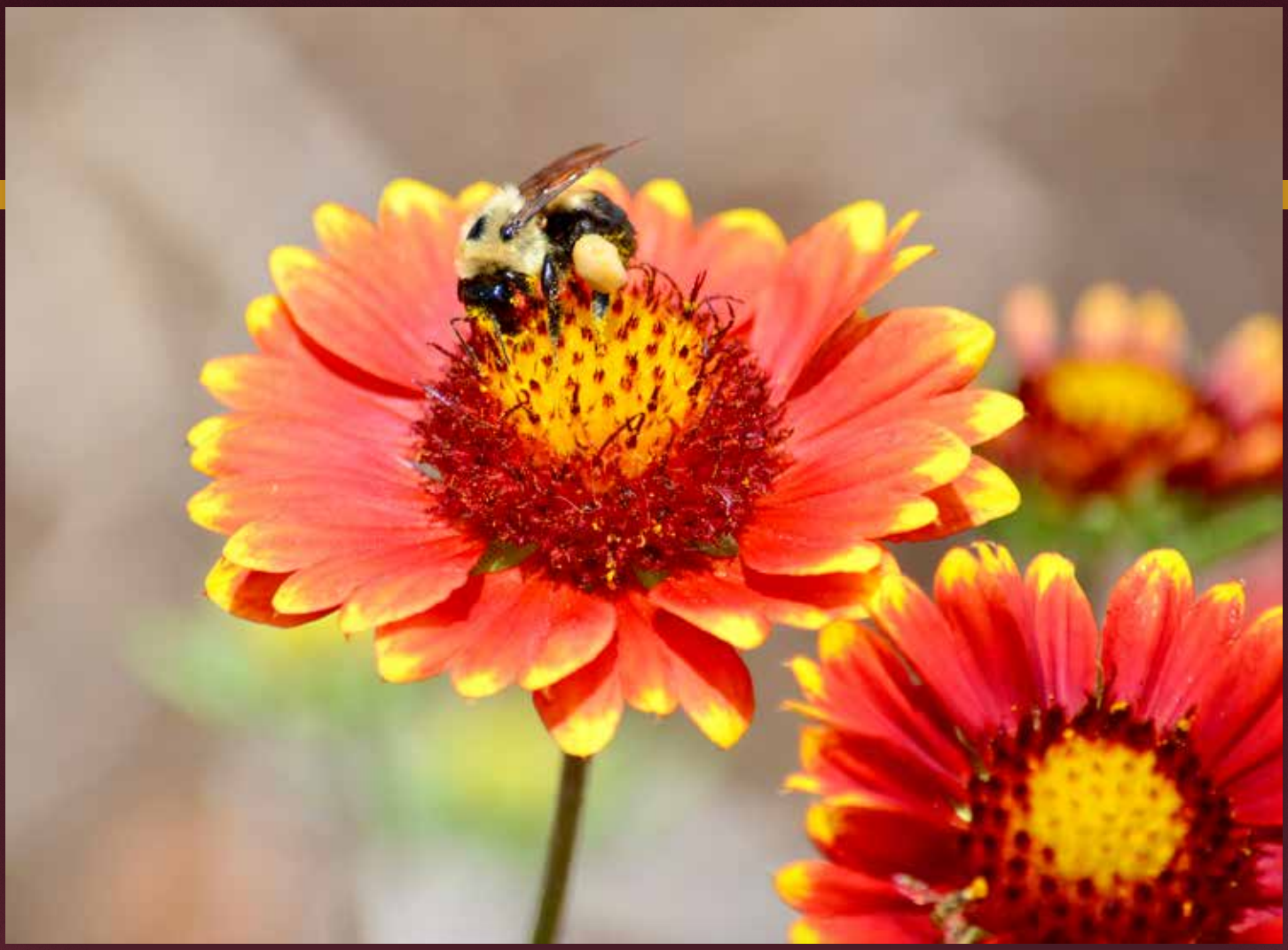
RESULTS

More than 1,400 landowners responded to the survey, and 924 responses were usable for analysis. Most respondents were white males with an average age of 66 years. The average property size was about 146 acres, and the majority of respondents used their properties primarily for timber or agriculture. Most also reported they were currently using or had previously adopted at least one pollinator BMP. Landowner attitudes, social pressures, and perceived constraints were all positively related to their intentions to adopt BMPs. Of those, perceived constraints—landowners' belief about whether they have the skills, resources, and time to use pollinator BMPs—showed the strongest influence on intentions. This indicates having a favorable attitude and feeling social pressures to use pollinator BMPs may not be enough to lead to adoption; the landowner must also feel they are able to use the practices. These results indicate the perceived constraints of time, skills, and/or resources may inhibit future adoption. Additionally, most respondents reported a lack of adequate knowledge for using pollinator BMPs, indicating another potential constraint.

Landowners who were currently using pollinator BMPs had greater knowledge, more favorable attitudes, less perceived constraints, and greater adoption intentions than those who had previously or never adopted. Farmers had greater adoption of pollinator BMPs than timber or non-production landowners, and they also had greater knowledge, less perceived constraints, and greater adoption intentions. These results indicate the importance of familiarity with pollinator BMPs for future adoption, since previous BMP experience may allow landowners to feel more confident in using them on their properties.

Current messaging about pollinator BMPs is broad and non-specific so that their wide applicability to landscapes and properties can be emphasized. However, the results of this study indicate landowners need more specific knowledge before they are likely to act. Westlake recommends a two-step approach to improve current educational and outreach efforts: 1) create messaging focused on the specifics of pollinator BMPs, such as their relative advantage, implementation details, costs, and multiple benefits, and 2) provide hands-on workshop opportunities for landowners to observe BMP demonstration areas, to practice skills, and to connect with others interested in pollinator conservation. This approach would allow for a broader understanding of the practices and potentially increase future adoption rates.

An additional important finding was an overall lack of landowner use of commonly used communication channels. Most landowners indicated they occasionally or never use informational publications or reach out to others to learn more about general land management practices. This lack of connection for knowledge sharing and learning poses a challenge for future outreach efforts.



FUTURE RESEARCH

This study provided valuable insights into the current state of pollinator BMP adoption in Mississippi and the influ ence of various landowner attributes on adoption intentions, yet there is still much to learn. Continued human dimensions research will be key to investigate additional attributes influ encing adoption intentions and to examine landowner networks to increase knowledge sharing, ultimately allowing for better understanding of landowners in various regions. Although challenges remain, the large response to this study and increased interest in the topic indicate potential private landowner support of pollinator con servation efforts in the future.

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RESOURCES

For more information about pollinator BMPs, check out:

- Conservation Reserve Program's Pollinator Habitat Initiative – https://www.fsa.usda.gov/Internet/FSA_File/cp42_habitat.pdf
- Environmental Protection Agency's Pollinator Protection List of BMPs – https://www.epa.gov/pollinator-protection/find-best-management-practices-protect-pollinators
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