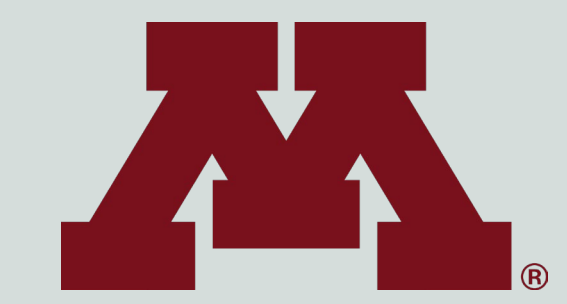


Bee Lawns in Minnesota: Research Impacting Policy



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A new idea for lawns

Dr. Marla Spivak, an entomologist in the Bee Lab at the University of Minnesota (UMN), wondered why lawns couldn't also have flowers to provide food for bees. In collaboration with the UMN Turfgrass Science team, research began in 2013 on what soon would be called "bee lawns", funded by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).



Which flowers will work?

Eight flowers that were known to be bee food sources were examined for suitability in a hard fescue lawn. Promising flower options were those that more easily established and that flowered under mowing. Four of the species tested did not establish at all.



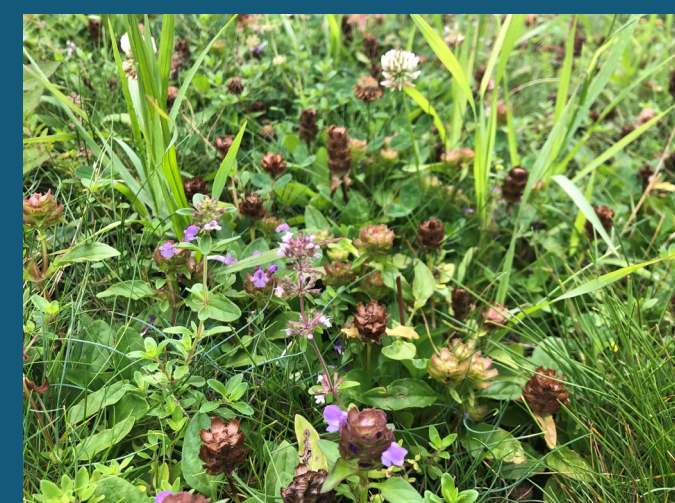
Self-heal, white clover, and creeping thyme were among the species with bee lawn potential (photos: K. Moncada).

Lane, I. G., Wolfin, J., Watkins, E., & Spivak, M. (2019). Testing the establishment of eight forbs in mowed lawns of hard fescue (*Festuca brevifolia*) for use in pollinator conservation. *HortScience*, 54(12), 2150-2155.

Will people support bee lawns?

Visitors were surveyed about their opinions of flowering lawns in Minneapolis parks. This research found:

- 96.5% of park visitors viewed the appearance of bee lawns positively.
- 95.4% supported the lawns when learning the link of the lawn flowers and bees.

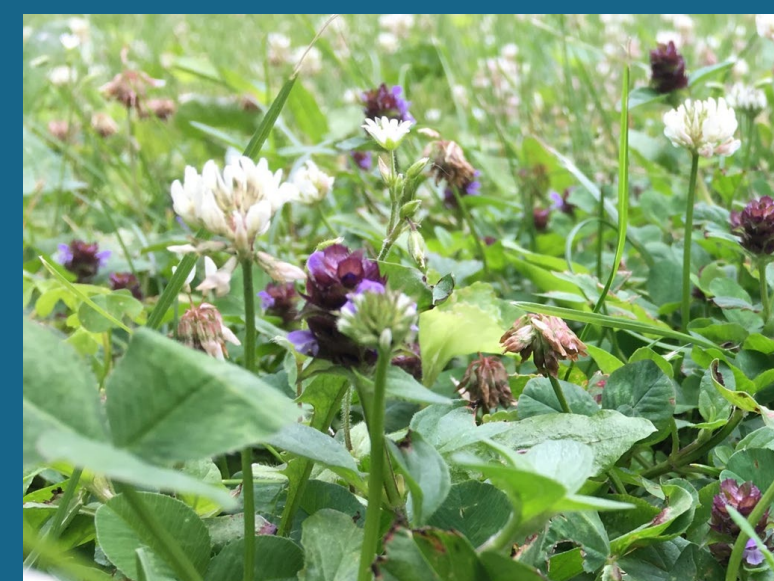


Minneapolis parkgoers were supportive of bee lawns such as this one (photo: H. Ramer).

Ramer, H., Nelson, K. C., Spivak, M., Watkins, E., Wolfin, J., & Pulscher, M. (2019). Exploring park visitor perceptions of 'flowering bee lawns' in neighborhood parks in Minneapolis, MN, US. *Landscape and Urban Planning*, 189, 117-128.

Bee lawn seed mix for consumers

Based on University of Minnesota research, a bee lawn seed mix was developed and first sold by a Twin Cities seed vendor in 2018. The species in the "standard mix" were fine fescue turfgrasses, Dutch white clover, self-heal, and creeping thyme. Fine fescue species were promoted in the seed mix due to their low-input attributes such as requiring less water, fertilizer, pesticides, and mowing.



Bee lawn with self-heal and white clover in bloom (photo: J. Wolfin).

Bee lawn outreach

Due to the popularity of bee lawns, UMN Extension created outreach content such as the "Establishing and maintaining a bee lawn" webpage. The webpage is extremely popular and has had over 150,000 views since inception. The UMN Turfgrass Science team created a bee lawn display at the Minnesota State Fair as part of their lawn care booth. Bee lawns are one of the most popular topics with fairgoers and 1000s of bee lawn fact sheets are distributed.



Extension Educator Jon Trappe at the bee lawn display in the UMN Turfgrass Science exhibit at the Minnesota State Fair (photo: R. Schwab).

Current UMN bee lawn research

Current UMN projects include assessing the species composition of lawns throughout the Twin Cities to see if including more flowering plants helps increase pollinator populations, evaluating better ways to establish bee lawns, and using golf courses as sites to see how big bee lawns need to be to positively impact pollinators.



Future of bee lawn policy in Minnesota

In 2024, the Lawns to Legumes program received funds from the Minnesota State Legislature to continue for the next several years. The program plans to keep offering cost-share grants for pollinator habitat that includes bee lawns. Research will continue to play a role in their plans to assess appropriate bee lawn species and mixes (M. Reich, Metro Blooms).



2013

2024 and beyond

Which turfgrass will work?

Kura clover was used as a model flower to determine which turfgrasses would be the best companions for flowering species. Kura was seeded at different rates into four cool-season turfgrasses commonly used in Minnesota. Kentucky bluegrass and hard fescue were found to be more promising companions.

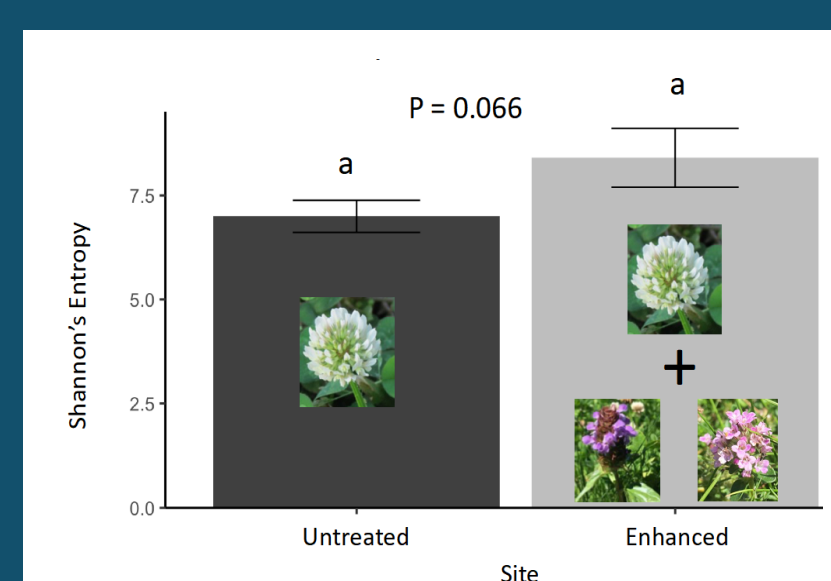


Hard fescue, often planted with other fine fescues as pictured, had potential to complement flowers in a bee lawn (photo: R. Braun).

Lane, I., Watkins, E., & Spivak, M. (2019). Turfgrass species affect the establishment and bloom of Kura clover (*Trifolium ambiguum*) in lawns. *HortScience*, 54(5), 824-828.

Will bees use bee lawns?

Bee lawn flowers were planted in lawns that had naturally occurring white clover in Minneapolis parks. 56 bee species were found on white clover with turfgrass. A greater bee diversity and a significantly different bee community were found when self-heal and creeping thyme were added.



Bee diversity at clover-only and florally enhanced parks, 2017-2018.

Wolfin, J., Watkins, E., Lane, I., Portman, Z. M., & Spivak, M. (2023). Florally enhanced turfgrass lawns benefits wild bees and honey bees (*Apis mellifera*). *Urban Ecosystems*, 26(2), 361-375.

Bee lawns beyond Minnesota

While UMN was conducting research on bee lawns, other researchers around the country were also investigating lawns and pollinators including:

University of Arkansas – Flowering bulbs and perennials in warm-season lawns

Mississippi State University, Auburn University, and the University of Georgia – Refuge Lawn project

Oregon State University – Flowering lawns

Other researchers worked on the value of lawn weeds for pollinators and mowing regimes for pollinators such as frequency and not mowing in May.

Bee lawns in Lawns to Legumes program

In 2019, the Lawns to Legumes program was established to encourage Minnesota residents with cost-share grants to add one of several types of pollinator habitat to their yards.

As a result of UMN research, bee lawns were included as an option and many participants completed bee lawn projects. Bee lawns were popular because residents were interested in habitat that was lower maintenance, shorter in height, and traffic tolerant.

Award cycle	Completed projects	% of total projects
2020-2021	70	14%
Spring 2022	59	11%
Fall 2022	80	12%
Spring 2023	203	12%
Fall 2023	126	15%
Spring 2024	330	17%

Number of completed pollinator lawn projects in Lawns to Legume program by award cycle. M. Reich, Metro Blooms.

Bee lawn popularity grows

Several different seed vendors began to sell bee lawn seed mixes, which become more widely available to consumers. Sales of bee lawn seed mix increased; for example, a local seed vendor saw a 59% increase in online sales from 2022 to 2023 (R. Schwab, Twin City Seed). The mix has been sold to consumers in nearly every U.S. state (R. Schwab, Twin City Seed).



A yard in St. Paul, MN promoting bee lawns with a sign from the UMN Bee Lab (photo: F. Sessoms).

No-Mow May and bee lawns

Collaboration continued with the Turfgrass Science team and the Bee Lab in developing a message about No-Mow May to help guide Minnesota residents. In lieu of not mowing in May, they offered "Slow Mow Summer" guidelines to benefit bee lawn pollinators, as well as to protect lawn health. Minnesota municipalities such as Roseville followed similar recommendations with "Less Mow May".



A yard sign from the City of Roseville's "Less Mow May" program.

Future bee lawn research

Reconsidering creeping thyme. Consumers have a hard time establishing this species due to its small seed and it aggressively spreads once mature. The Lawns to Legumes program is considering removing it as an option due to use of cultivars by participants and potential invasiveness (M. Reich, Metro Blooms).

More native options. Residents have expressed great interest in more native bee lawn options for both flowers and turfgrasses.



Creeping thyme dominating long-established bee lawn plots (photo: K. Moncada).