

Managing lawns for native pollinators and honey bees

By James Wolfin, Graduate Research Assistant

Bee losses and declines in the health and productivity of pollinators are often associated with a number of factors, including the emergence of pests and pathogens, habitat loss, pesticide use, and a lack of high quality forage. The turf lawn currently accounts for 2% of the continental United States, with lawns most prevalent in urban and suburban areas like the Twin Cities. As public concern grows for the conservation of pollinating insects like bees, there is an opportunity to redesign the home lawn to meet the needs of both humans and our pollinators. Instead of managing the turf lawn for aesthetics alone, there is an opportunity to view the turf lawn as an untapped resource in terms of providing forage for bees. A research partnership between the Turfgrass Science Lab and the Bee Lab at the University of Minnesota has developed a seed mix that can be used in a lawn setting to promote pollinator health while still maintaining the familiar aesthetic and function of the traditional home lawn. Current research on this topic, commonly referred to as the bee lawn project, has delineated how we can interseed low-input fine fescue (*Festuca sp.*) grasses with low-growing flowers that can withstand common lawn management techniques.



Researchers have investigated four main topics related to bee lawns: 1) which grasses are best suited for co-establishment with flowers, 2) which flowers are best suited for co-establishment with grasses, 3) what management techniques can be applied to lawns before seeding flowers in order to increase the number of blooms observed in a lawn, and 4) what kinds of bee pollinators will visit bee lawns. While points 1-3 have been examined in previous studies, research is still underway to determine what kinds of bees will use these bee lawns. To investigate this topic, eight turf lawns at parks in Minneapolis are being used as study sites, with parks separated into two groups, a control group, and an enhanced (experimental) group. The parks within the control group have only turfgrass and pre-existing stands of Dutch White Clover (*Trifolium repens*). Because clover is already common in lawns, these parks are meant to show the baseline level of bee diversity that parks can support by simply allowing clover to grow in lawns. Enhanced parks also had turfgrass and pre-existing populations of Dutch White Clover, but were also florally enhanced with seeds and plugs of four additional low-growing flower species (*Prunella vulgaris*, *Thymus serpyllum*, *Symphiotrichum lateriflorum*, and *Coreopsis lanceolate*). Twenty minute transect walks were conducted at each park once per week, where bees were collected off of flowers with a bee vacuum. Specimen were then

pinned and identified to the species level. Preliminary results suggest that at least 46 species of bees in urban Minneapolis will forage on Dutch White Clover, and that enhanced flowering lawns may have the potential to support greater bee diversity than clover-only lawns. This study provides insight on the value of lawn flowers and the potential for habitat management practices within urban settings to promote bee conservation.