

**DATE:** May 12, 2021

**MEMO TO:** Nels Leutwiler, Chair  
Preservation Foundation Board

**FROM:** Jim Anderson  
Director of Natural Resources

**RECOMMENDATION:** Recommend approval of a \$23,550 grant, payable over three years, from unrestricted funds to conduct bee monitoring as part of the Barrington Greenway Initiative (BGI) partnership

**FINANCIAL DATA:** The requested funds will be matched by \$2,000 in other funding and will be paid in equal installments of \$7,850 in 2021, 2022, and 2023.

**BACKGROUND:** Loss of insects, including pollinators, has been documented globally, and native pollinator loss has prompted the listing of bee species on the US federal endangered species list. Most notable in Lake County is the decline of the federally-listed Rusty Patched Bumble Bee. Over the past year, there have been two incidental sightings of Rusty Patched Bumble Bee in Lake County, including one at Greenbelt Forest Preserve. The second sighting was at Flint Creek Savanna, owned and managed by Citizens for Conservation, one of the District's partners in the Barrington Greenway Initiative (BGI).

Community monitoring of bees is necessary to determine if specific bee assemblages are associated with specific habitats or landscapes. Monitoring can also provide insights into pollinator-plant relationships and the potential for inter-specific pollinator competition.

Of the ten bumble bee species known to occur in Illinois, five are thought to be declining throughout their range in eastern North America. The decline of these species has resulted in federal listing of one and designation of three species as Species in Greatest Conservation Need in Illinois. Although we have two observations of Rusty Patched Bumble Bee in Lake County, this is likely a result of insufficient survey effort, leading to an inflated false-negative rate (present but not detected). The proposed project will meet this need by supporting bee surveys across District and BGI preserves over the next three years.

This monitoring data is important to the District's ability to secure grants and donations for ongoing restoration and management efforts. For example, this survey will provide critical monitoring data in support of the District's recent proposal to the NFWF Monarch Butterfly and Pollinators Conservation Fund (pending).

### **Project Approach**

We request funding to monitor the presence and abundance of insect pollinators, as well as to determine how patterns in species richness are correlated with the plant community. This is important for designing seed mixes for restoration that support pollinator species.

We will also undertake non-lethal genetic sampling of Rusty Patched Bumble Bee (RPBB), as dictated by US Fish and Wildlife Service permitting, to understand the structure of the population as a whole. Assessment of occupancy and site-level characteristics that are associated with habitats where RPBB exist or where there is high bee species richness, will provide information about bee assemblages and their floral preferences at each site.

Surveys will be conducted at 22 sites across Lake County and the BGI partnership area. BGI preserves will include Flint Creek Savanna, Lyons Prairie, Grigsby Prairie, Shoe Factory Road Prairie and Spring Lake Forest Preserve. District sites will include Greenbelt Forest Preserve, Wadsworth Savanna, Rollins Savanna and Middlefork Savanna.

**Personnel**

The Principal Investigator for this project will be Alma Schrage, who has worked with the Illinois Natural History Survey undertaking similar studies. She will be joined by a field technician, who will be trained in the relevant techniques and will expand the number of sites that can be sampled across the field survey period.

Ms. Schrage will work with District Wildlife Ecologist Kathryn McCabe, to identify priority sites and ensure data sharing. Ms. Schrage will also train Ms. McCabe to collect and identify bees during the course of this three-year project to ensure that additional sites and years can be surveyed over time. The long-term plan is to integrate bee pollinator surveys into the District’s overall monitoring program.

**Budget**

Item	Total Cost	Request to the Preservation Foundation	Matching Funds
80 hours of field surveys by principal surveyor (\$25/hr, 20 hr/wk, 4 weeks) X 3 years	\$6,000	\$6,000	\$0
160 hours of training and field surveys by technician (\$15/hr, 40 hrs/wk, 4 weeks X 3 years	\$7,200	\$7,200	\$0
*Lodging 20 nights X 3 years	\$6,000	\$6,000	\$0
Mileage @ \$0.56/mile/2300	\$4,100	\$4,100	\$0
Equipment & Consumables	\$450	\$250	\$200
Planning, data proofing, analysis, and reporting	\$1,800	\$0	\$1,800
<b>TOTAL</b>	<b>\$25,550</b>	<b>\$23,550</b>	<b>\$2,000</b>

**REVIEW BY OTHERS:** Chief Operations Officer, Foundation Executive Director.

**PRESERVATION FOUNDATION BOARD:**

Date: \_\_\_\_\_  Roll Call Vote: Ayes: \_\_\_\_\_ Nays: \_\_\_\_\_  
 Voice Vote Majority Ayes; Nays: \_\_\_\_\_