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The long-term effects of electrical right-of-way (ROW) vegetation management on pollinator communities: justification and progress.

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In 2007, the National Academies Press published a comprehensive report highlighting the declining population of pollinators ---including native bees---in North America (National Academies Press 2007; nap.edu). The report was followed in 2015 by the publication of the national strategy to promote the health of honey bees and other pollinators by the White House pollinator task force (White House Pollinator Task Force 2015; whitehouse.org).

The publication of these reports along with continuing research on the effects of plant diversity, habitat loss, pesticides, and pathogens on the population status of pollinators, prompted our research on the use of Rights-of-Ways (ROWs) by Hymenopteran (e.g., bees, wasps) pollinators at the State Game Lands 33 study area in central Pennsylvania. Our study fulfills the directives of the reports by 1) establishing “long-term, systematic monitoring of pollinators for documentation of trends in species abundance and richness” and 2) fulfilling the goal to “restore or enhance...land for pollinators through public-private partnerships.”

During the summer of 2016, Hymenopteran pollinator and plant diversity data were collected at all treatment sites (hand-cutting, mowing, mowing plus cut-stubble, high volume foliar, ultra-low volume foliar, and low volume basal bark). Several studies indicate that Hymenopteran pollinator diversity correlates with plant diversity (see Nicholls and Altieri 2013 for review) and we will explore this trend in our data. Furthermore, Wagner et al. (2014) found mean plant richness in powerline ROWs plots was nearly twice that of woodland plots in Massachusetts and that powerline ROWs serve an important role in conservation of Lepidopteran (butterfly, moths) and oligolectic bee (highly specialized pollinators) communities in the Northeastern United States.

Hymenopteran pollinators collected at our study sites are curated at the Frost Entomological Museum at The Pennsylvania State University. We expect species identification to take 6-12 months and we will provide our data for inclusion in the National Bee Inventory and Monitoring database managed by the U.S. Geological Survey in Patuxent, VA (<http://www.pwrc.usgs.gov/nativebees/index.cfm>).

National Academies Press. 2007. Status of Pollinators in North America. Washington DC (www.nap.edu).

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