

Native Pollinators at the PMC

In the spring of 2010, the Manhattan Plant Materials Center (PMC) initiated a new study to determine what native pollinator insect species were present so farm management at the PMC could be tailored to particular pollinating insects. "Survey of Pollinating Insects at the Manhattan PMC, Study Number KSPMC-T-1001-WL," is part of the pollinator national action plan for the Plant Materials Program (PMP) and addresses the wildlife habitat conservation, construction, and reclamation resource concern. The PMC realizes that native pollinating insects are necessary for seed production of many of the forb species that we produce. The staff wanted to manage in a way that considers the habitat needs of the native pollinating insects at the PMC as well as to try and attract other species. However, PMC staff and local experts were unclear as to what species were actually found at the PMC. Therefore, this study is being conducted to make a reference collection of the pollinating insects that are at the PMC and try to identify as many as possible in the hopes that the information can be used to better manage for native pollinating insects.

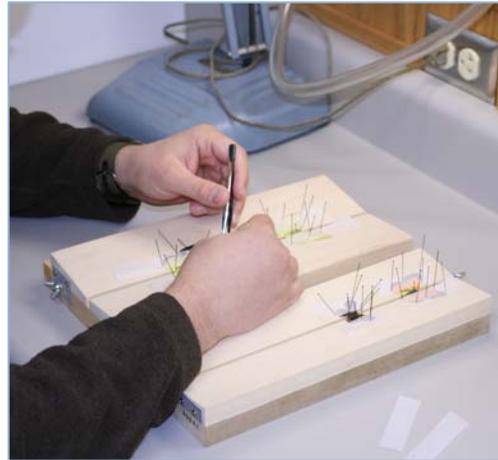


Paul Gleue, USDA NRCS

Allen Casey, PMC Career Intern, stands next to malaise trap he set to capture insects found near a canola seed increase planting on the PMC.

Insects were caught using multiple methods that included using a sweep net, a malaise trap, and bowl traps. The traps were set out at multiple locations and multiple times of the day to try to include as many different habitat types as possible. Different species of pollinators can have very different habitat requirements and behavioral patterns. Some are out during the night; many come out early in the morning, or in the evening.

The preference for different colors and types of plants also varies widely. A malaise trap is a tent-type structure that has a collection jar at the top and is indiscriminant in what types of flying insects it catches. Bowl traps are simply colored bowls that are filled with water and a few drops of liquid dish soap.



Casey prepares butterfly specimens for mounting.

John M. Row, USDA NRCS

The bowl traps attract different species of pollinators based on the color of the bowl. Pollinators land in the water and can then be collected and processed. The dish soap breaks the surface tension of the water so that insects fall into the water instead of being able to stand on top of the water. Most of the butterflies and moths were caught using a sweep net, but other insects were also caught in that manner. When some of the fields were harvested, PMC staff followed the harvesters swinging the sweep net to collect the insects stirred up by the harvester moving through the fields.

The insects had their wings spread (in the case of butterflies), pinned, and displayed in museum display drawers. To date there are about 350 insects in the collection. There are at least 6 orders that contain at least 21 families. Of these, the biggest taxonomic orders are the Hymenoptera (bees and wasps) and the Lepidoptera (butterflies and moths). Most of the butterflies and some of the moths have been identified to species. Many of the bees and wasps, although being the main group of interest, have only been identified to the family level. For management purposes, identification to the family level is probably going to be sufficient, as habitat requirements and behavior within families are often very similar. Identification of specimens has been completed primarily by PMC staff; however, Jennifer Hopwood, Midwest Pollinator Outreach Coordinator for the Xerces Society for Invertebrate Conservation, has helped identify many of the bees to family, and in some cases, to the species level.



Allen Casey, USDA NRCS

Display case of pinned specimens in the Order Lepidoptera collected on the PMC last year.

The reference collection has been displayed at meetings and tours to show the public and school kids the variety of pollinators that exists, even in a relatively small area. Although the study is scheduled to continue to 2015, some management practices, such as artificial bee nesting blocks, have been implemented already. Other practices will be implemented before the study has ended based on the specimens that have already been identified.

Area One All Employees Meeting

Rich Wynia, PMC Manager, and Allen Casey, Career Intern, attended the Area I All Employees Meeting held in Quinter, Kansas, on February 15, 2011. Assistant State Conservationist, Dan Meyerhoff, invited the PMC employees to attend the meeting and update the area staff on new happenings at the PMC and provide some information on pollinators to the group. The group of approximately 85 NRCS staff, district employees, and partners heard about the new seed handling system the PMC has put into place and is using this year. Also discussed was the new Shelbourne Reynolds seed stripper head the PMC has acquired to improve the collection of grass and forb seeds. The pollinator discussion was initiated by recounting the pollinator meetings held at the PMC in 2010. The area staff discovered that the value of plants varied in their importance to pollinator species, what attracts certain pollinators to certain plants, and which plants bloom during the spring, summer and fall seasons.

A reminder of the PMC 75 Years of Service Celebration scheduled for June 7-8, 2011, was also discussed and employees and partners were invited to attend if at all possible.

Outside My Window

1918

What does 1918 have to do with plant materials? It was 1918 when President Woodrow Wilson delivered his Fourteen Points speech; Spanish flu hit Camp Funsten, Kansas; and Codell, Kansas, was hit for the third year in a row by a tornado. It was nearly 15 years before the establishment of the Soil Erosion Service (SES) and almost 20 years prior to the establishment of a Civilian Conservation Corps (CCC) nursery at Manhattan. Recently, in the chestnut grove, while making observations in the Chinese chestnuts growing there, I spotted a disk-shaped object on the soil surface. Upon picking up the disk, I saw the words, one-cent and noticed right away it was a wheat penny. Flipping the coin over old Abe Lincoln was visible on the other side. The date was difficult to read. I wetted my finger and wiped some of the dirt off the penny that was bluish in color from years of exposure to the elements, and strained my eyes to make out what I thought was 191 as the last digit was difficult to see. I thought it might be an 8 but could not confirm that until I returned to the office. Using a hand lens I could make out 1918 as the date. I began to wonder how long the penny had been at this spot of ground, perhaps 40 or 50 years, most likely. Did a CCC employee lose the coin, or did the loss date back further yet, before the time of the SES? We will never know the answer to that question. At home I looked up the 1918 Lincoln One-cent coin out of curiosity. Over 288.1 million copies of the 1918 penny were coined at the Philadelphia Mint. So, the coin is of little value other than sparking the wonder of how it ended up in the chestnut grove. It's amazing that after years of tillage it has resurfaced. It is a lucky penny perhaps.



John M. Row, USDA NRCS

Oxidized 1918 Lincoln One-cent coin found in the chestnut grove at the PMC.

The chestnut grove was planted in 1975 under John Dickerson's watch as Manager of the PMC. Today these trees line the west side of the lane that leads into the PMC.

~John M. Row, Plant Materials Specialist