



# POLLINATOR CENSUS



## 2024 Preliminary Results



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The Draper Pollinator Census began in 2023 to develop a baseline of what pollinators occur in Park County and in what relative abundances. To accomplish this goal, we set out blue vane traps at five sites once a month from late June – September. In 2024, we brought on volunteers and added two sites to encompass more of the variety of Park County. We're now carefully pinning and processing the 2025 pollinators. These preliminary results (and their release nearly two years after data collection) are a testament to the lengthiness of this process.

This census represents a departure from the Draper's traditional collection method. You might hear Corey Anco (DNHM Curator) or me mention that the Draper is a primarily salvage-based institution. Most of our collections come to us by transfer from the Wyoming Game and Fish Department or Ironside Bird Rescue. We also pick up our fair share of roadkill, as we have the necessary permits to do so.



Left to right: Amy Phillips and just a few of the Pollinator Census volunteers, including Alice Flyr, Judy Mackie, and Kathy Leonardi prepare for the 2025 season.

The insects from this project were all deliberately collected for a couple of reasons. First, bees are quite small. Many of the insects in this project range from 3 – 25 mm. Second, salvaged insects are rare. There are stories of hundreds of bees found dead on the sidewalk as a result of pesticides, but these examples are thankfully few and far between. Thus, a good idea of what pollinators occur in Park County starts with collection. Our methods of one trap deployment a month after June 15th were chosen to minimize our impact on populations and their life cycles while developing a comprehensive baseline.

This baseline is of increasing importance. Insects are declining rapidly. A German study over 27 years (1989-2016) documented a 76% decline in insect biomass within protected areas. These results are alarming because, aside from insects just being part of the natural order of things, they provide food for other organisms and pollinate plants to create food for many more. Many insects have a bad wrap, but bees are like the charismatic megafauna of the insect world. Many bees are fluffy and adorable. They are associated with flowers and, for the most part, harmless if left to their own devices.

Unfortunately, bees are also experiencing declines. Most noticeable are perhaps the bumble bees. Since 2019, more than a quarter of North American bumblebees have been listed by the International Union for Conservation of Nature's Red List as threatened with extinction.

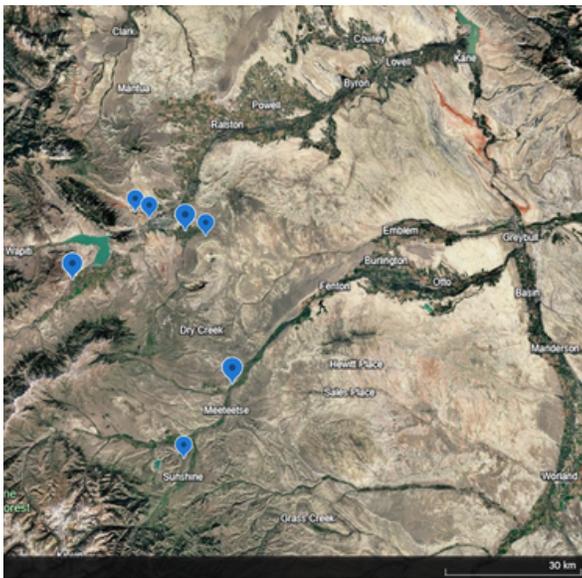
By learning what species occur in Park County and in what abundances, we can begin to periodically check in with populations. We can also educate the public so they can become stewards of bees. Helping native bees helps a variety of insect species, as many bees can be described as "umbrella species." This, in turn, helps species from birds to mammals and makes our ecosystems more diverse and resilient.

Bumble bees may come to mind first, but native bee species are extremely diverse. Right from top to bottom: sweat bee (*Halictus*), digger bee (*Anthophora*), and metallic green bee (*Agapostemon*).





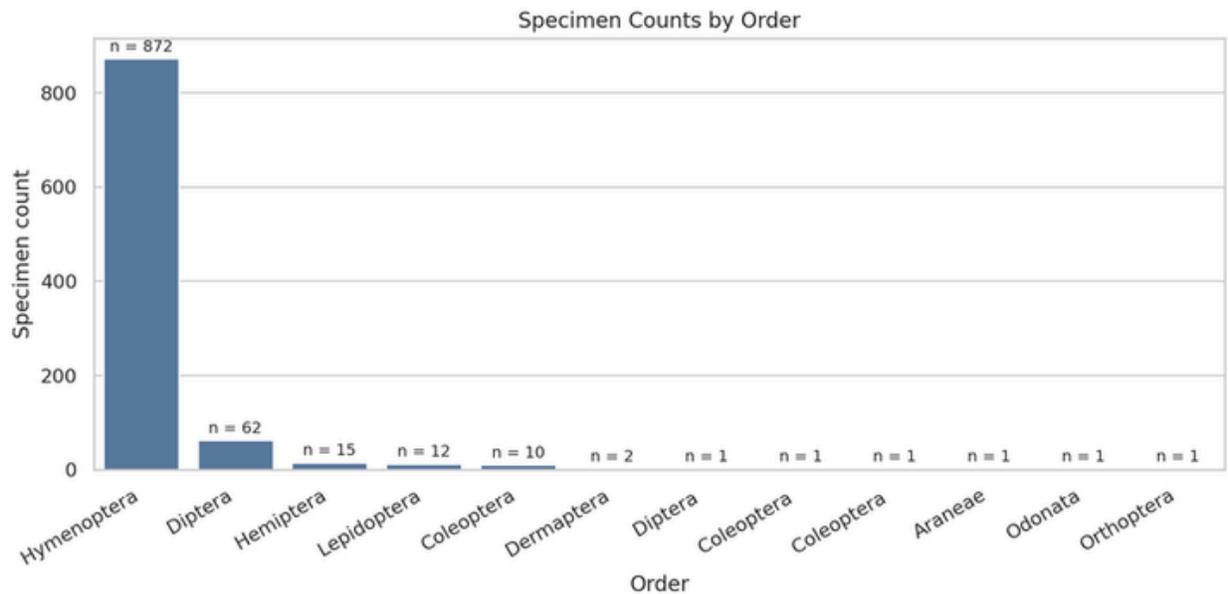
## Collection Sites



The 2024 Pollinator Census saw the addition of two sites on private lands to the project. Sites now include Bear Creek (1), Sage Creek (2), Newton Lakes (3), Cody Archery Range (4), Roshon Ranch (5), Sunshine Habitat (6), and the Paul Stock Nature Trail (7). The sites were chosen to represent the variety of land uses, including different grazing activity (\* indicates grazing occurs nearby the site), water sources, and honey bee activity.

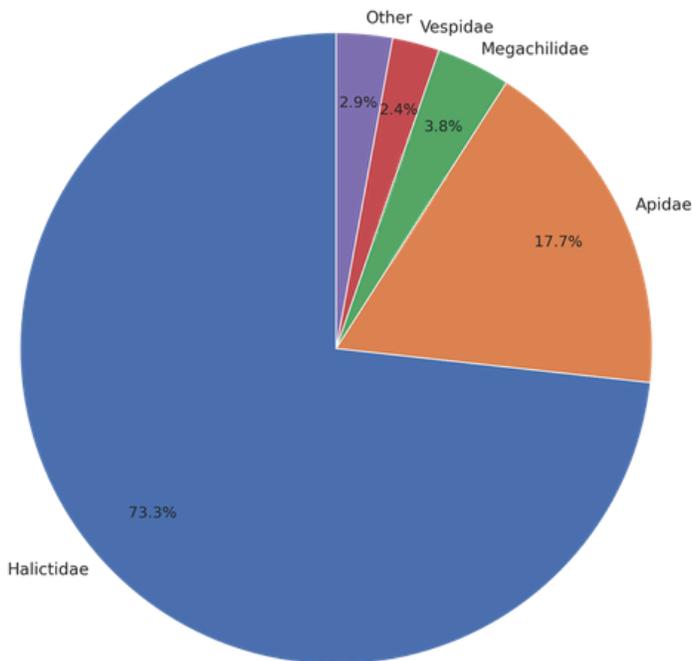
Site Name	Mowing	Livestock Grazing	Native Grazing	Honey Bee Hives	Water
Paul Stock	No	No	No	No	River
Roshon Ranch	Periodic	Cattle, Horses	Suspect	Yes	River
Archery Range	Periodic	No*	Yes	No	None
Bear Creek	Yes	No*	No	Yes	Irrigation
Sage Creek	No	No	Yes	No	Pond
Newton Lakes	No	No*	Suspect	No	Lake
Sunshine Habitat Area	No	Bison	Yes	No	None

# Abundance of Insects



The 2024 Pollinator Census collected a **total of 979 insects**. The most numerous orders were Hymenoptera (bees, wasps, ants), followed by Diptera (flies) and Hemiptera (true bugs). Within Hymenoptera (n = 872), the most numerous family was Halictidae (think sweat bees), followed by Apidae (bumble bees belong to this family).

Family composition within Hymenoptera (n=872)



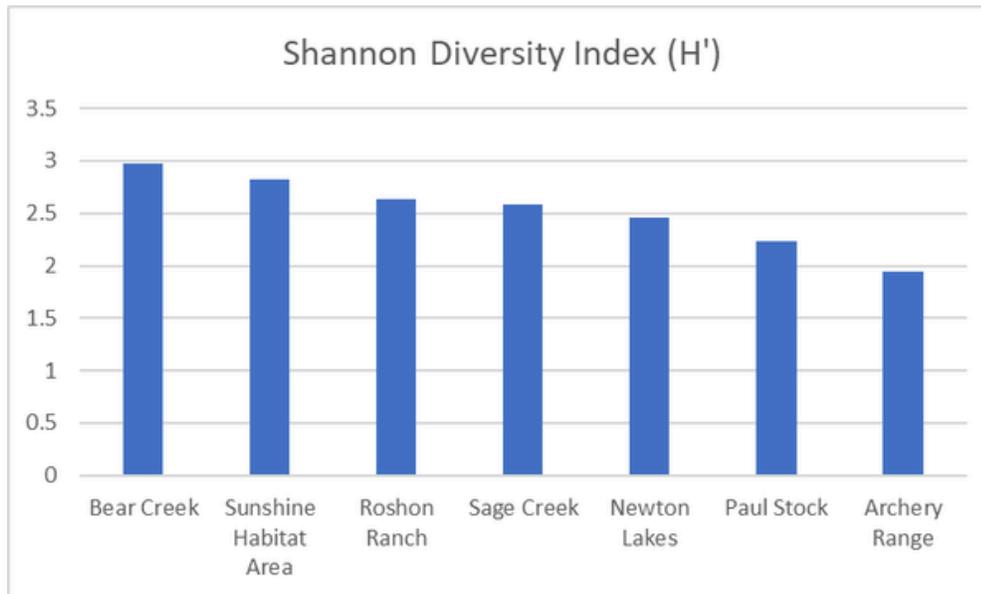
For the first time, we collected honey bees (n = 2). The first was collected in June from Roshon Ranch, a site where honey bees are located 0.8 miles away. In August, the second honey bee was collected from Newton Lakes.



Honey bee (*Apis mellifera*) collected in June, DRA.301.263.

# Diversity

There are several ways to explore diversity. For 2024, a look at species richness (i.e., the number of species present) places the Cody Archery Range as our most diverse site with 41 unique species and Newton Lakes as our least diverse site with only 15 species. Another way of examining diversity is the Shannon Diversity Index which looks at both species richness and relative abundance. The results of a preliminary Shannon Diversity Index can be found in the table below.



## Why look at diversity?

Diversity is important to have in our ecosystems because it means they are more resilient against natural disasters, disease, climate change, and disturbance.

# What's Next?

## 1. **Process insects from 2025**

a. Once we've collected the insects from the field, we have to pin, photograph, measure, and number them.

## 2. **Improve identifications**

a. So far, all identifications have been made by our largely untrained team of staff and volunteers. We're working to find partners to ensure these identifications are accurate, which will affect the results of the study.



Pinned insects from the 2024 season.

## 3. **Share the results**

a. Once we have the data, we want to start sharing it with our museum visitors. This will start by trying to get people to appreciate the variety of pollinators and the impact each person has on them. Eventually, we hope to present the results of this study in a peer-reviewed publication.