

## **Bees of Nebraska**

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Bees of Nebraska is a citizen science project to get interested participants to help document the bee species of Nebraska. Hymenopter records for Nebraska are scarce, and what does exist is fairly dated. Pressure from expanding agriculture and peri-urban development led to a desire for recording what is present, before their numbers are affected more than they may already have been.

### **Bees of Nebraska – The First Year**

Bees of Nebraska was established in the beginning of 2015 as an extension program to help increase the public's awareness of native bees, their habitat needs, and conservation practices. Extension within land-grant universities has been around for over 100 years from its founding through the Smith-Lever Act. Extension has an established reputation for delivering unbiased, research-based information which has resulted in a reliable following. Not only does the public create a web of clientele, but extension educators across the state, (and for that matter, the country) have community connections that help 'get the word out' about upcoming workshops, trainings, and programs to the general public. Most extension educators have county-specific responsibilities in their area of expertise, which could be seen as exclusive, however it leads to specialists being invited to other counties for program delivery. The success of programs like Bees of Nebraska relies heavily on this type of relationship.

As an extension educator in horticulture, Bjorklund identified a lack of awareness in her clientele of the insects that are so important in their lives. Specifically most have a general dislike, or at least mistrust of bees and other stinging insects. This program strives to bring awareness to these insects, namely bees, so that the public can become aware of the native insects, appreciate their importance, and ideally then lead to their conservation.

### **Timeline**

Program advertising and recruitment began in February of 2015. A group of educators across the state were given the details of the program, and were asked to provide feedback in regards to the likelihood of garnering interest from the public, project scope/scale, and other suggestions they might offer. From that group, especially interested educators emerged and training dates were chosen. Scottsbluff, Grand Island and Fremont were the chosen sites to conduct the trainings. These three training sites were chosen for a couple of reasons. First of all, they offered a variety of communities across the state. Second, logistically they were good choices - they were easy to get to, had training space available, and had educators committed to helping advertise through their own local avenues. Third, each had at least a moderate population to draw from.

Trainings occurred in the month of April. Each training lasted approximately 90 minutes

1. Introductions, participant registration paperwork
2. Project purpose, goals, objectives
3. Collection protocol
4. Brief overview of bees native to Nebraska, and their habitat
5. Disbursement of materials
6. Informal wrap up

In all, approximately 35 people of all ages signed up to participate. While that number may seem low, it turned out to be a manageable number for the first year. Participants were asked to commit to collecting either once (always on the 1<sup>st</sup>) or twice a month (the 1<sup>st</sup> and 15<sup>th</sup>) and the decision was completely up to them which they thought they could handle. The first day of collecting was May 1<sup>st</sup>, and the last day will be either October 1<sup>st</sup> or October 15<sup>th</sup>, depending on which group they are in. All samples will then be cleaned, pinned and identified, ideally to the species level. A wrap-up get together could take place in November to share results, look at specimens, and get participant feedback.

### **Collection Protocol**

When developing the program, it was understood from the beginning that the collection protocol had to be simple, easily taught, uniform, and scientifically accurate. Bee bowls were chosen because they offered all of these characteristics, and were also fairly ‘low investment’ both in costs, and participant time commitment. Collection protocol tried to follow *The Very Handy Manual: How to Catch and Identify Bees and Manage a Collection*’ (Droege, et al., 2015) as much as possible. Each participant was given three bowls – one white, one blue, and one yellow. Prepared bowls were to be placed outdoors before 9 am, and could be collected any time after 4 pm that same day. Specimens collected were to be drained, stored in hand sanitizer, labeled, and placed in a freezer until collection by Bjorklund could be made, or were dropped off at the extension office by the participant. All collected specimens remain in the freezer until identification can take place.

### **Materials**

All required materials were provided to participants at the time of training. Each participant received the following:

1. Three plastic bowls (one white, one painted fluorescent yellow, one painted fluorescent blue).
2. One 8 ounce container of Dawn dish soap (original scent)
3. 20-30 coffee filters
4. One 30 ounce container of hand sanitizer
5. Fifty pre-cut labels
6. One pencil for writing labels
7. Wide assortment of plastic and glass vials, small (1” x 1”) jewelry Ziploc baggies, larger snack size Ziploc baggies, all for holding collected specimens.

## **(Preliminary) Results**

In the first four months of collecting, there has been a wide variety of insects collected with the bowls. Because of their distance, the Scottsbluff and Grand Island participants will submit all collections at the end of the season. Therefore, specimens that have been pinned are from the Fremont area. *Ceratina*, *Megachile*, and *Augochlora*, have been the dominant species thus far. Many fly species have been caught, as well as the occasional moth, ant, and beetle.

## **References**

Droege, S. et al., (2015). The Very Handy Manual: How to Catch and Identify Bees and Manage a Collection