

UC Davis Bee Haven 2023 Annual Report

University of California, Davis
Department of Entomology and Nematology

December 2023



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Prepared December 2023 by Christine Casey, Academic Program Management Officer

Greetings from the UC Davis Bee Haven. I'm pleased to note that we celebrate our 15th anniversary in 2024. We'll be holding classes and other events to mark this; check our website in January for details.

SUPPORT

Financial

Current Haven funding provides part-time salary support for me and a part-time student assistant. Operating expenses in FY2023 were \$5200. This is a small budget for a garden of our size; we are able to operate efficiently thanks to the hard work of our volunteers.

A breakdown of FY2023 expenses is shown in Fig. 1 in Appendix I. Haven 2023 salary support of came from the California Department of Food and Agriculture's Specialty Crops Block Grant program, "[Promoting Pollinator Plant Awareness, Access, and Habitat Expansion to Benefit California's Nursery Industry](#)". Donations and class and guided tour fees cover our operating expenses.

Volunteers

The Haven volunteer team continues to make tremendous contributions, with work taking place on Tuesday mornings. In 2023, volunteers contributed 218 hours to the Haven. This has an in-kind value of \$6530 based on the [national volunteer labor rate](#) of \$31.80. Volunteers with 25 or more hours of service are recognized in the garden.

Garden irrigation repairs and updates

We received a generous donation from the Cygnet Foundation this year to make essential repairs, equipment replacement, and upgrades to our irrigation system. The work is nearly finished, and I'm pleased with how much more efficient the new system is. Grants and gifts for vital, but unexciting, infrastructure repairs are almost non-existent, making this funding critical to our success.

GARDEN OUTREACH PROGRAMS

Events, guided tours, and virtual events

In 2023, we reached 1326 people through on- and off-site events and virtual programs. This is far below the thousands we reached prior to the pandemic, but represents double the number reached at the pandemic low. A breakdown of visitors and programs is shown in Appendix II.

Media coverage

Links to online media coverage in 2022 are in Appendix II.

VIRTUAL UC DAVIS BEE HAVEN

Social media

We use a variety of social media platforms to create the virtual UC Davis Bee Haven, including [Instagram](#) (@hbhgarden), [Facebook](#), and [The Bee Gardener](#) blog.

YouTube

We continued to post short videos about bees and gardening to the [Haven's YouTube](#) channel in 2022. This allows us to reach beyond the Sacramento region.

Web resources

The garden's [web page](#) is updated regularly and serves as another source of information for bee gardeners.

RESEARCH

Haven scientists have previously completed studies evaluating the attractiveness of common landscape plants to bees. This has allowed us to recommend optimal plant choices for gardeners. In this work we were only able to evaluate a small portion of the plants available to gardeners, and new plants are continually coming to market.

The next step in this work is the development of an easy, accurate sampling program for growers, garden centers, and plant breeders so that they may continue to evaluate the attractiveness of plants to bees. This will allow the best choices and recommendations to their customers and will help growers to focus bee-compatible pest management to the appropriate plants. Working with colleagues at UC Cooperative Extension in San Diego County, our two-year research project evaluating sampling methods was completed this year.

Each sampling bout compared one 3-minute timed count of a uniform area per plant species with multiple, quick 20-second snapshot counts of the same area per plant species. We counted honey bees, bumble bees, and other native bees, although the majority of bees observed were honey bees. Plants were sampled on at least five different days. The mean number of bees, the amount of variation in the samples, and the cost to obtain each sample are used to calculate a value called relative net precision. This value serves as a measure of the efficiency of each sampling method.

Project results are shown in Appendix III.

Appendix I. UC Davis Bee Haven FY2023 financial report

**Total expenditures
FY2023 = \$5200.38
(% of total)**

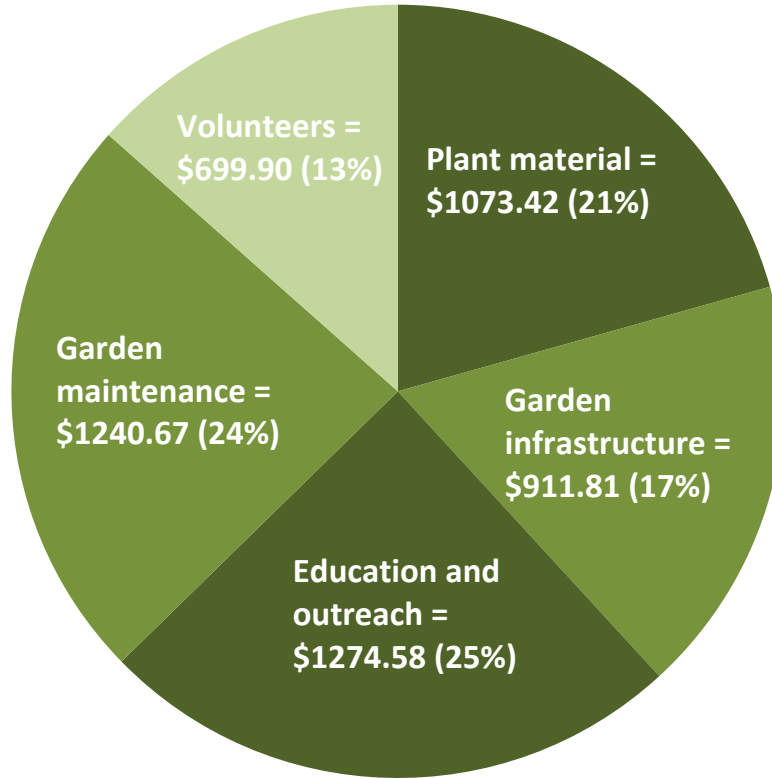


Figure 1. Breakdown by category of UC Davis Bee Haven expenditures in FY 2023.

In addition to salary, it cost \$5200 to run the Haven in FY2023. The categories cover expenses as follows:

Plant material: All plants and seeds used in the garden

Garden infrastructure: Construction and maintenance of garden facilities including fencing, raised beds, and pathways

Education and outreach: Handouts, signs, and other display materials

Garden maintenance: Tools, soil amendments, and other supplies needed to maintain the garden

Volunteers: Refreshments and safety supplies for volunteers

Appendix II. UC Davis Bee Haven events and media coverage in 2023

Attendance and affiliation of garden event and guided tour participants

Event or organization	Number attending	Type
Courses, career days	7	UC Davis undergraduates
Bee gardening classes	51	Public
Staff events	95	UC Davis staff
Private group tours	16	Public
School group tours	81	Teachers/K-12
Government agencies	21	Public employees

Attendance and affiliation of off-site virtual event participants

Date	Event	Number attending	Type
4/1/23	Beginning Bee Gardening class	6	Public
4/15/23	San Diego Master Gardeners Spring Seminar	586	Public
4/22/23	Advanced Bee Gardening class	13	Public
5/23/23	Santa Clara Master Gardeners seminar	44	Master Gardeners
8/5/23	Sacramento Master Gardeners Harvest Day	300	Public
9/22/23	Yolo County Master Gardeners seminar	29	Master Gardeners
9/28/23	Napa County Master Gardeners seminar	64	Master Gardeners
11/4/23	Pruning the Bee Garden class	14	Public
9/28/23	Napa County MG	64	Master Gardeners

Media coverage in 2023

Travel Lens	https://www.travellens.co/free-things-to-do-in-davis-ca/
The Sun Gazette	https://thesungazette.com/article/opinion/gardening/2023/07/19/bees-in-the-garden/
UC Davis Magazine	https://magazine.ucdavis.edu/how-to-build-a-bee-house/

Appendix III. Research to support bee conservation in the California green industry

This project took place in 2022 and 2023 at public gardens and nurseries in San Diego County. Relative net precision calculations from 2022 indicate that the faster snapshot method is more efficient than timed counts as a bee sampling tool (Table 1).

At the public gardens, the absolute number of bees differed significantly between the two sampling methods each year, but the pattern of bee attractiveness was the same across the plant species (Figure 2).

This work shows that each sampling method can give growers, garden centers, and land managers comparable information about which plants among their specific plant mix will be most attractive. This information can be used for pest management decisions, marketing materials, and customer education.

Site type	Sampling method	Relative net precision
Garden	Snapshot	27.11
Garden	Timed count	7.21
Nursery	Snapshot	37.29
Nursery	Timed count	9.89

Table 1. Relative net precision (RNP) of snapshot and timed counts at public garden and nursery sampling sites. Higher RNP indicates greater sampling efficiency.

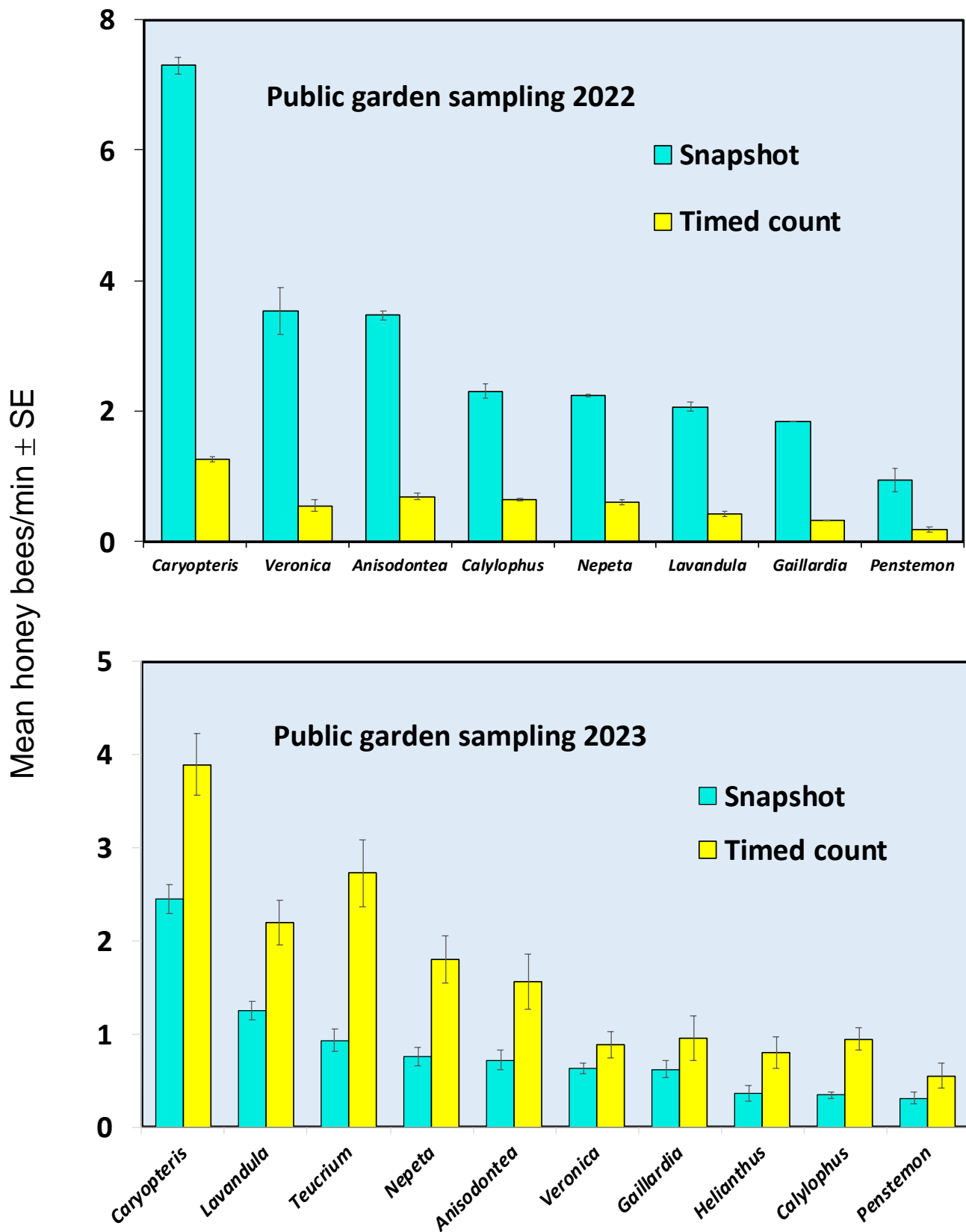


Figure 2. Comparison of snapshot and timed count methods for honey bee sampling at a public garden.