The Bee Garden Project

Project Progress (Feb – Jun 2023)

1. Learnings from the first batch of bee hotels

We distributed 50 bee hotels which were set up all over Bengaluru city. We are monitoring these bee hotels through the smartphone app and by reaching out to hosts via emails and calls. We are closely monitoring the 2 bee hotels set up in the ATREE campus as well. We have started observing bee activity and signs of occupation. Based on our observations and responses from the hosts, we identified a few issues that we wanted to address in our bee hotel design.

2. Making of the 2nd batch of bee hotels

We put together a list of minor modifications that the bee hotel would benefit from, and accordingly designed a new batch of bee hotels.

The concerns identified from the earlier batch were modified in the following ways:

- In our initial model, hollow twigs were closely stacked in the uppermost compartment of the bee hotel. We felt that a reduction in the number of pre-hollowed out twigs was in order as a

dense clustering of these twigs was likely not ideal for bee colonization. Typically, only a few hollowed-out twigs are occupied by bees.

- The pre-made cavities in the twigs also attracted attention from other insects, including wasps. While wasps can also be pollinators and play an important role in the ecosystem, we felt that fewer twigs might be more attractive to prospective bees and deter wasps and other animals which sometimes also occupied the space between twigs.

- More space was added between the cavities. This would help reduce the risk of parasitisation and interference in neighbouring cavities. We therefore decided to replace the collection of twigs with a block of wood having fewer cavities and more space between cavities.

- Making cavities in a block of wood also gave us the freedom to make cavities with specific, desired dimensions. We surveyed existing literature on cavity utilization and came up with a list of dimensions that would serve different species of bees.

- We were thus able to have wider variation in cavity dimensions in our bee hotel. This could encourage newer bee species to occupy the hotel.

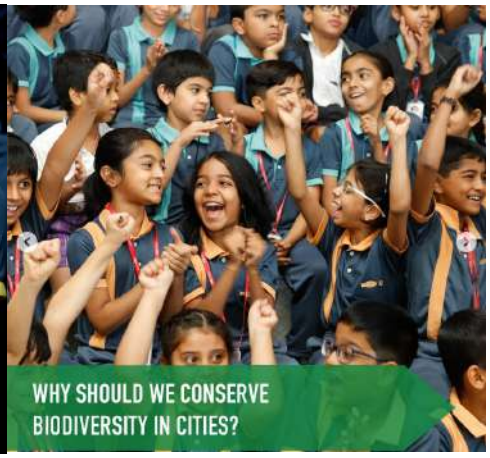
- Replacing twigs with wood also helps avoid the problem of twigs falling out of the bee hotel while transportation or due to rain and wind.

We prepared a new batch of bee hotels keeping in mind the above considerations. We are excited to see how they fare compared to the initial model.

3. School outreach

Ekya School got in touch with us to take part in The Bee Garden Project. Chethana Casiker and Maria Antony gave an online talk about the bee hotel initiative in Feb 2023 to students of Grade 6 and 7.

Later, speakers from ATREE were invited to for an interactive session at Ekya Byrathi as part of Wildlife Week celebrations. The team engaged with the students through a series of talks and a quiz centred around urban biodiversity 'BiodiverCity'.



Following the talk, 13 students signed up to host bee hotels in their homes. We shared our new bee hotel model with them.

4. Summer mailer

As summer is the season with highest bee activity, we sent a special mailer to our participants reminding them to check their bee hotels for bee activity and encouraging them to motivate children to take up activities such as nature-journaling in summer.

The mailer also shared a snippet showcasing leaf-cutting behaviour of Megachilid bees and cavity-boring by carpenter bees.

https://www.youtube.com/@Bees_TheBeeGardenProject

5. Second bee hotel monitoring survey

The team conducted a follow-up survey of several of the bee hotels in the summer. The survey was greatly helpful in recording bee activity and signs of bee occupation that had so far gone un-noticed by the hosts. Those participants who were not available during the time of the survey will be contacted at a later date.

6. Preliminary analysis of data from the app

We are happy to report that we have started to get data from our smartphone app. Many app users recorded bee activity as well as signs of bee occupation such as sawdust or residue at the cavities. We are looking forward to analysing the data.

7. Collaboration with taxonomists for bee identification

We are collaborating with Dr. V. V. Belavadi and Dr. Arati Pannure, experts in bee taxonomy, for identification of the bees that have colonized our bee hotels. We hope to identify bees up to Genus level based on photo and video records from our hosts.

8. Planning of a large bee hotel installation

We are in the process of finalizing the design for a large bee hotel installation at 2 lakes in the city. We hope to have the installations ready in the next 2 months. These installations will provide nesting space for bees, and will also serve an educational purpose. At one of the lakes, the installation will be part of a pollinator walkway that is being created by the ATREE team.

9. DIY insect hotel at KUPU Festival

Maria Antony conducted a hands-on workshop on D-I-Y insect hotels at Kupu - A Festival for Climate Action, on 18th June, at the Bangalore International Centre. The workshop was aimed at promoting insect conservation and helping children explore techniques and materials to make habitats for solitary bees and non-social wasps. The workshop saw a very good response from children as well as parents.