

## **Climate change and Bengaluru: Applying a biodiversity lens for a sustainable city**

This project is a collaboration between Indian Institute for Human Settlements and Indian Institute of Science to study the effects of extreme weather events on birds and butterflies found in the city of Bengaluru.

Our research highlighted the impacts of heat islands on bird populations in the city. We found that birds avoid the heated parts of the city and are found more in greener areas in the city. These green parts include educational and institutional campuses and urban parks and lakes, highlighting the importance of green areas in the city for biodiversity.

We also collected data over the year on how extreme weather events such as heat waves, hail storms and sudden drop in temperatures affect butterfly behaviour. Our preliminary analysis of the butterfly behaviour data shows that their behaviour is affected by extreme weather conditions. Butterflies spend higher proportions of time flying when there is a heat wave indicating that they might need to fly more in order to search for resources. The data also indicate that as temperature increases the resting behaviour decreases. These behavioural responses individuals are experiencing stress. How extreme weather events will affect butterfly populations in the long run needs to be studied over a few years to understand the implications of these extreme weather events on butterfly populations.

To raise awareness about the impacts of climate change and urbanization on wildlife we are displaying artworks of flora and fauna found in the city as part of a moving art exhibition. This exhibition will be displayed in schools, colleges and institutions to create awareness about biodiversity. We have already displayed it at the Indian Institute for Human Settlements. We have also created short video documenting the idea and science behind the project <https://x.com/iihsin/status/1713892402086437211>

**Project Start Date: April 16, 2023**

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### **Status Report & Updates:**

The scientific findings from the project will be published in scientific journals. Some of the work is already under peer review and is awaiting publication. The exhibition will move to a few colleges and institutions in the coming months. We plan to collaborate with other BSF project grantees to continue our work and outreach in the future and share our findings with them to design better connectivity and making Bengaluru sustainable.