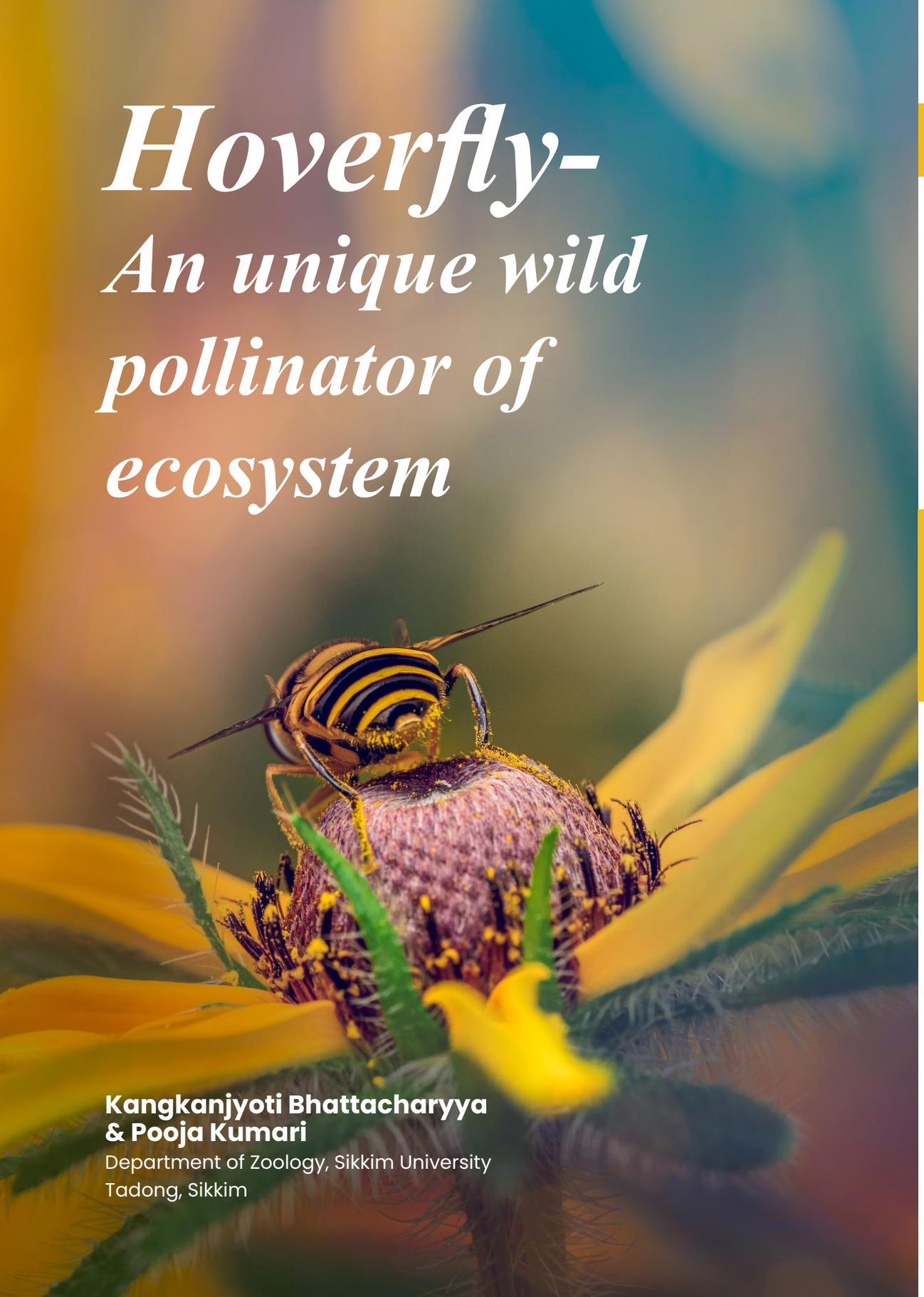
Hoverfly- An unique wild pollinator of ecosystem



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ABSTRACT

Hover flies are also known as flower flies or syrphid flies, and they are members of the Syrphidae insect family. They are quite often seen hovering at flowers, as their common name suggests; the adults of many species feed primarily on nectar and pollen, while the larvae (maggots) eat a variety of foods. In this article, we discussed hoverfly food habits, their role in pollination, and recent studies on hoverfly diversity declination.

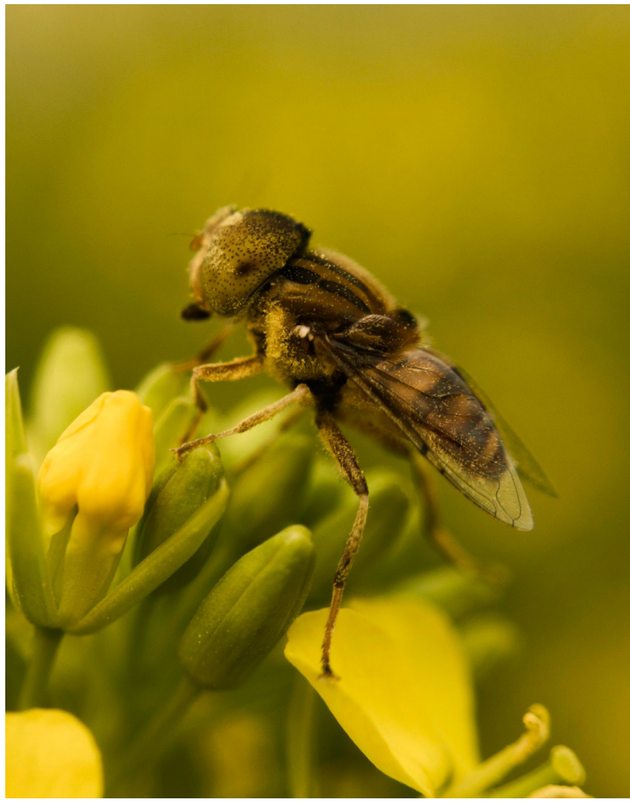
Key Words: Pollination, Hoverfly, Syrphid fly, Ecosystem etc.

INTRODUCTION

In various ecosystems, hoverflies have been included as significant pollinators. These flies have been discovered to visit more than 70% of animal-pollinated wildflower species in Europe1. Hoverflies, flower flies, and syrphid flies are members of the Syrphidae family, which includes about 6000 species in 200 genera and may be found on every continent except Antarctica and distant marine islands. The family is divided into three subfamilies3, two of which are particularly important in terms of pollination: the Syrphinae and the Eristalinae, which have roughly 1800 and 3800 species, respectively. Hoverflies are typically classified as
Pollinators, and they are considered the second most important pollinators after wild bees.

FOOD HABITS OF HOVERFLY

Many hoverfly species' larvae prey on pest insects like aphids and leafhoppers, which spread illnesses like the curly top, so they're used in biocontrol as a natural way to reduce pest levels. As a result, gardeners occasionally utilize companion plants to attract hoverflies. *Alyssum spp., Iberis umbellata,* statice, buckwheat, chamomile, parsley, and yarrow are among the plants said to do so. Adult hoverflies consume nectar and pollen, and their morphologies range from big, hirsute bumblebee mimics to tiny hairless species with widespread imitations of bees and wasps.



ROLE OF HOVERFLY IN POLLINATION

In many habitats across the world, hoverflies are key pollinators of flowering plants. These flies are common flower visitors to a wide range of wild plants and crops and are typically regarded as the second-most important pollinator after wild bees. In comparison to bee species, however, there has been comparatively little research on fly pollinators. Using records of insect visitors to 105 global crop plants, researchers have assessed the relative importance of crop pollinators, including hoverflies. Diptera (true flies) were shown to be the second most important pollination insect order, visiting 72 percent of crops compared to 93 percent for Hymenoptera (bees, wasps, and ants) and 54 percent for Lepidoptera (bees, wasps, and ants) (butterflies and moths). Hoverflies visited 52 percent of these crops among the Diptera, which we estimate to be worth roughly US$300 billion per year based on data from the Food and Agriculture Organization for 2017.

A RECENT STUDY ON THE DECLINATION OF HOVERFLY

An important study has recently been conducted in Boeschoten, a forest in the Netherlands on hoverflies and results revealed that hoverfly abundance has plummeted by 80% between 1982 and 2021. Until 1990, abundance fell by 10.9 percent per year, primarily in nationally rare species with carnivorous larvae exposed to the air. From 1990 to 2000, abundance stabilized, but the second period of rapid reduction of 9.0 percent per year occurred, primarily in very common species. Furthermore, between 1979 and 2021, species richness decreased dramatically, as a result, the total number of species seen in five monitoring days decreased by 44%. Over four decades, a unique group of dry-forest hoverfly species vanished.

Early on, the number of nationally uncommon species detected at the research location fell from 19 to 9 during a period (1979–1984) that coincided with high nitrogen input and acidity produced by agriculture in the same area. Because forest management and circumstances remained unchanged, the more recent loss is most likely due to influences outside the forest. According to the authors, the continued influx of fertilizers and pesticides at a regional level, as well as climate change, are likely causes of the drop, and more research is needed to evaluate their respective effects

CONCLUSION

Hoverfly plays an important role in pollinating the flowers. It has great potential for agricultural pest management also. However in recent years, several reports of declining biomass of flying insects have alarmed the world. Historically, agricultural intensification has been the primary cause of pollinator decline due to habitat degradation, destruction, and fragmentation. Several research have been conducted regarding diversity, abundance and declination of hoverflies worldwide. However, still there is huge gap for the hoverfly diversity and its population declination in India.