

## Submitted Abstract

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## Abstract

Study on foraging behaviour of bumblebees in Doon Valley, Uttarakhand, Western Himalaya, India

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The Himalayan ranges represent a diversified and complex system of both physical and biological attributes. It is unique and rich in floral and faunal diversity. Pollinators are one of the important aspects of Himalayan biodiversity playing vital role in crop pollination and as ecosystem service providers. Foraging strategy and success define pollinator's capability to survive and reproduce. Due to urbanization and various anthropogenic pressures, pollinators are declining globally. Present study has been conducted on the foraging behavior and cause of decline of bumblebees (order Hymenoptera, family Apidae) in Doon valley of Dehradun district of Uttarakhand, situated in the foothills of outer Himalayan region surrounded by agroecosystems and subtropical temperate landscape. The study is conducted in four different habitats viz riverine; agriculture; forest and semi urban areas. The thermoregulatory ability of bumblebees makes them an efficient pollinator in the high altitude and cold ambient temperatures of the Himalayan region. They are generalist forager and can forage on a wide range of plants. However, some plants do rely on bumblebees to achieve pollination. Loss of bumblebees can have far ranging ecological impacts due to their role as pollinators. It is studied that *Bombus haemorrhoidalis* Smith is the predominant species of bumblebees in Doon valley and its preferred foraging plant species in the study areas are *Cirsium arvense* (Asteraceae), *Lantana* sp. (Verbenaceae), *Tropaeolum majus* (Tropaeolaceae), *Solanum melongena* (Solanaceae) and *Tecoma stans* (Bignoneaceae). Their foraging activity depends on seasonal availability of floral resources in the study area. It is observed that with the availability of similar foraging plants and climatic conditions there was an abundance of bumblebees in a particular habitat whereas they were absent from another habitat in the same altitude. This could be due to anthropogenic activities in the valley such as urbanization and increased use of fertilizers which is causing threat to its ecological balance. The study is undergoing to find out the causable factors of their absence and decline from the landscape.

Key words: Bumblebees, pollinators, foraging behaviour, floral resources, Doon Valley.