4.

Conclusion & Critical Findings

CHAPTER IV

4. CONCLUSION & CRITICAL FINDINGS

1. During the present study, a total of 72 butterfly species were observed belonging to 5 families and 51 genera from all the selected fragmented habitats of Gujarat. Family Nymphalidae showed the highest number of butterfly species, followed by Lycaenidae, Pieridae and finally Hesperiidae.
2. Amongst these 72 species, 7 species belong to family Papilionidae, 15 species belong to family Pieridae, 27 species belong to family Nymphalidae, 20 species belong to Lycaenidae family and 3 species belong to family Hesperiidae.
3. All organisms dealing with the urban infrastructures today! Butterflies are no exceptions here. Total of 43 rhopaloceran species were observed belonging to 5 families and 29 genera. Out of these 43 species, 15 species belongs family Nymphalidae, followed by 12 species from family Pieridae, followed by 8 species from family Lycaenidae, followed by 6 species belonging to family Papilionidae and the least being family Hesperiidae i.e. 2 species.
4. Edible cultivations and complementary plantations at Chhani in Vadodara retained a fair number of butterfly species. Total of 33 butterflies species were observed belonging to 4 families and 23 genera at Agricultural landscapes of Chhani in Vadodara, of which, 12 species belonging to family Nymphalidae, followed by 11 species belong to family Pieridae and 5 species each from family Papilionidae and Lycaenidae.
5. One of the most critical fragmented habitats observed was the Industrial Vicinity of Ankleshwar in Bharuch district. During the entire research tenure at Ankleshwar, total of 29 species belonging to 4 families and 21 genera were observed. Family Pieridae scored the maximum number of species i.e. 11 species, followed by 7 butterfly species each from family Nymphalidae and Lycaenidae and 4species from family Papilionidae.

6. Rhopaloceran studies conducted at Waghai Botanical Garden revealed a total of 70 butterfly species belonging to 5 families and 49 genera. Out of these 70 species, the maximum number of species i.e. 27 species were observed from family Nymphalidae, followed by 18 species from family Lycaenidae, followed by 15 species from Pieridae family, Family Papilionidae with 7 species and the least family Hesperiidae representing 3 species.
7. Diversity studies at Saputara Hill Station revealed a total of 65 species of butterflies belonging to 5 families and 46 genera. Out of which, 23 species belong to the Nymphalidae family, followed by 17 species from family Lycaenidae, followed by 15 butterfly species from Pieridae family, followed by family Papilionidae comprising of 7 species and the least number of species i.e. 3 species from Hesperiidae family.
8. Amongst all the selected fragmented habitats, Waghai Botanical Garden showed the maximum number of butterfly species i.e. 70 species.
9. Ascending order of habitat preference of rhopalocerans observed were industrial vicinity (Ankleshwar) being the least preferred by butterflies, followed by agricultural landscapes (Chhani) in Vadodara, followed by urban residential of Vadodara city, followed by Saputara Hill Station (The Dangs) with 65 butterfly species and finally the most preferred habitat by butterflies was Waghai Botanical Garden (The Dangs).
10. Habitat Preference by Rhopalocerans in a nut shell: Industrial Vicinity < Agricultural Landscapes < Urban Residentials < Saputara Hill Station < Waghai Botanical Garden
11. Studies on seasonal distribution of rhopalocerans clearly indicated that post monsoon is the best duration to observe butterflies. Not all the fragmented habitats showed a common seasonal trend, there were variations too. There was a gradual increase in the number of species from the pre-monsoon to the post monsoon seasonal climates in urban residentials and agricultural landscapes of Vadodara district. Industrial vicinity of Ankleshwar also showed the gradual elevation in the number of butterfly species from pre-monsoon season to post monsoon preferred season of butterflies.

12. Papilionid species like *Graphium agamemnon* (Tailed Jay) and *Graphium doson* (Common Jay) were observed almost throughout the year in almost all the fragmented habitats.
13. Whereas among the Pierids, Emigrants like *Catopsilia pomona* and *Catopsilia pyranthe* were documented almost throughout the year in all the fragmented habitats. Moreover, Common Jezebel *Delias eucharis* exhibited the similar trend being visible throughout the year in almost all the fragmented habitats of Gujarat.
14. The occurrence of Common Baron *Euthalia aconthea* was common in The Dangs which was not the case in other selected fragmented habitats, even though they feed on Mango *Mangifera indica.* Hence, factors like temperature, rainfall play an important role in existence of butterfly species.
15. Usually, Indian Sunbeam *Curetis thetis* is not common species for all habitats but its accidental occurrence was observed on *Lantana camara* at the agricultural landscapes of Chhani in Vadodara.
16. Moreover the unusual Angled Sunbeam *Curetis dentate* (Family: Lycaenidae) was observed basking on the damp patches in Waghai Botanical Garden in The Dangs but the same was not observed at Saputara Hill Station in The Dangs.
17. The combined studies on species diversity, habitat preference and seasonal distribution of rhopalocerans in fragmented habitats of Gujarat is an attempt made which will help as baseline data for further studies in the field of Lepidopterology.