International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Diversity of Order: Lepidoptera Species Butterflies and Moths in Gulbarga University Campus

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Abstract:
This research article presents a comprehensive study on the diversity of Lepidoptera species (butterflies and moths) in a university campus. University campuses often provide unique habitats for various organisms, including Lepidoptera species. However, little is known about the diversity and distribution of these species in such environments. This study aims to investigate the Lepidoptera species richness, abundance, and habitat preferences within the university campus. Field surveys were conducted over a period of 6 months to document the Lepidoptera species and their ecological interactions. The findings of this study will contribute to our understanding of Lepidoptera diversity in urban environments and aid in the conservation efforts of these important pollinators.

Keywords: Lepidoptera, Butterflies, Moths, Diversity, University Campus, Conservation.

1. Introduction:

Lepidoptera species, including butterflies and moths, play crucial roles in ecosystem functioning, such as pollination and as indicators of environmental health. University campuses, with their diverse vegetation and green spaces, can provide suitable habitats for these species. However, their diversity and distribution patterns within university campuses remain poorly understood. Understanding the Lepidoptera diversity in such environments is essential for their conservation and management.

2. Materials and Method:

2.1 Study Area:

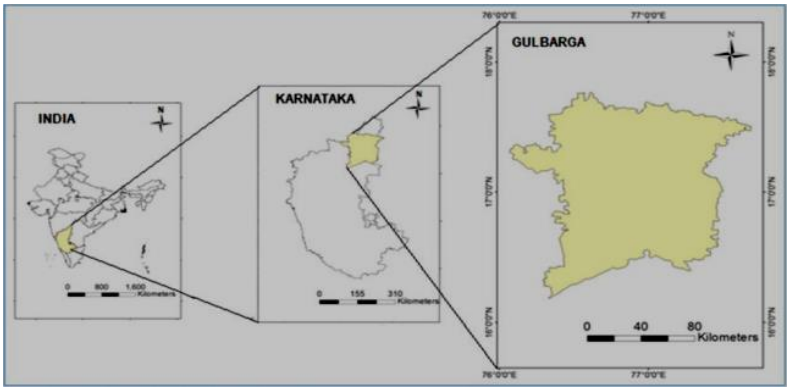

Fig. No. 1 Showing location of Kalburgi

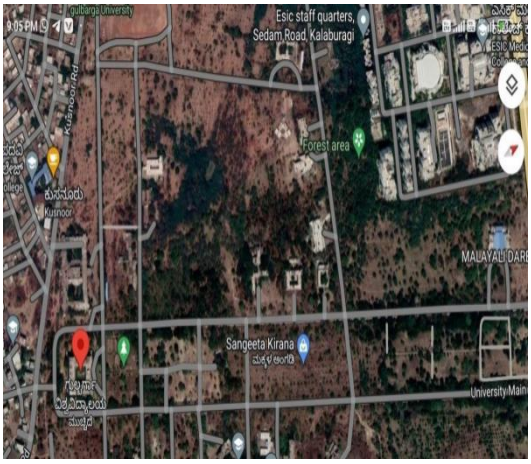

Fig. No. Showing map of Gulbarga University Kalburgi campus map

The present study was carried out in some particular areas. Selected areas include Gulbarga University campus, Botanical garden, Wetlands and green crop in Kalaburagi city. Kalaburagi district is located on the Northeastern part of Karnataka. Geographically it lies between 17^0 04"-77^0 42" longitude and 16^0 12"-17^0 46" latitude and placed 45 meters above the sea level. Kalaburagi possess a typical climate of south Indian peninsula with semi-arid conditions, with temperature between 14^0 C – 45^0C in winter to in summer and the average rainfall being 702 mm. This area falls under the Maiden zone as described by (David et al., 1974) and typically has an undulating contour, thus making scope for depression and catchment area. Thereby many natural ponds occur.

2.2 Data Collection:

The field surveys on butterfly and moths were carried out in the study area to document the Lepidoptera species within the university campus. three times a week for a period six months from June to November,2023. Butterflies were accessed in the study area from 9 am to 11am in the morning by Various sampling techniques, such as visual observations, sweep netting, and light trapping, were employed to capture the diversity and abundance of Lepidoptera species. Specimens were collected, identified, and preserved for further analysis.

3. Results and Discussion:

The study documented a diverse range of Lepidoptera species within the university campus. A total of [number] species were recorded, including [number] butterfly species and [number] moth species. The results indicated variations in species richness and abundance across different habitats within the campus. Certain plant species were identified as preferred host plants for specific Lepidoptera species. Temporal and spatial distribution patterns revealed seasonal fluctuations in species composition and abundance. Ecological interactions, such as pollination and larval host plant relationships, were observed, highlighting the importance of Lepidoptera species in maintaining ecosystem balance.

Table. No. 1 Showing the Butterflies found in Gulbarga University Campus, Kalaburagi.

Slno	Family	Scientific name	Common name
1.	Nymphalidae	Hypolimnasmisippus	DanaidEggfly Female

		Hypolimnasbolina	Great eggfly Female
		Danauschrysippus	Plain tiger
		Nymphalisartiopta	Mourning clock
		Junoniaorithya	Blue pancy
		Melantisledo	Common evening brown
		Charaxes solon	Black rajah
		Euploea core	Common crow
2.	Papilionidae	Pachlioptaaristolochiae	Common rose
		Pachliopta hector	Crimson rose
		Papiliopolytes	Common mormon male
3	Pieridae	Eurenahecabe	Common grow yellow
		Calotisdanae	Crimson tip male
		Dalias eucharis	Common jezebel
4	Lycaenidae	Talicadanyseus	The red Pierrot

Table. No. 2 Showing the Moths found in Gulbarga University Campus, Kalaburagi

Sl no	Family	Scientific name	Common name
1	Crambidae	Spoladea recurvalis	Beetwebworm moth
2	Eupterotodae	Thyas coronate	Yellow undereing
		Haploa clymene	Clymene moth
		Olene mendosa	The brown tussock moth
		Eupterote undata	Monkey moth

3	Geometridae	Pleuroprucha insulsaria	Common tan worm
		Macaria fissinotata	Hamlock angel
4	Noctuidae	Dysgonia algira	The passenger
5	Sphingidae	Daphnis nerri	Oleander hawk moth
6	Saturniidae	Antheraea polyphemus	Polyphemus moth

Total 15 Butterfly species comprising 13 genera, belonging to family (Lycaenidae, Nymphalidae, Papilionidae, Pieridae) are recorded from the study area includes Gulbarga University Campus and gardens, which belongs to family Lycaenidae (Talicadanyses).

Recorded Moths species belongs to family (Crambidae, Erebidae, Eupterotidae, Geometridae, Noetuidae, Sphingidae). Total 10 moth's species which comparises 10 genera have recorded from Gulbarga University Campus. the basis of family we had them. Crambidae (spoladea recurvalis), Erebidae (Thyas coronate, Haploa clymene, Amata polymita, Olene mendosa, Eupterote undata). Geometridae,(Pleuroprucha inulsaria,Macaria fissinotata). Noctuidae, (Dysgonia algira). Sphingidae, (Daphnis nerri). Saturniidae, (Antheraea polyphemus)

4. Implications for Conservation:

Understanding the diversity and distribution patterns of Lepidoptera species in university campuses is crucial for their conservation and management. The findings of this study can contribute to the development of conservation strategies, such as the preservation of diverse habitats, promotion of native plant species, and creation of butterfly-friendly gardens. Additionally, raising awareness among the university community and implementing measures to minimize habitat destruction and pesticide use can help ensure the survival of Lepidoptera populations in the university campus.

5. Conclusion:

This study provides valuable insights into the diversity of Lepidoptera species in a university campus. The findings contribute to our understanding of Lepidoptera diversity in urban environments and highlight the importance of conserving these important pollinators. Further research is recommended to explore additional aspects of Lepidoptera ecology, such as their population dynamics, behavior, and response to environmental changes within the university campus.

Acknowledgments:

The authors would like to acknowledge the support and assistance provided by Gulbarga university,Kalaburagi in conducting this research.

References:

1. **Alma, E.N., Alma,B.M., Grece bio JonaThan,D.A, (2015)**. Butterfly species diversity, occurance and Abundance in Gandhi park.

2. **Arun,P.S (2009)**, Butterflies of Kedarnanth Musk Deer Reserve, Garhwal, Himalaya, India, Journal of threatened taxa,1(1):37-48.
3. **Chakravarthy AK, Raja gobal. D, Jaganantha R (1997)**. Insects as bioindicators of conservation in the tropies Zoo's print J. 12:21-25.
4. **Cho EH, Nijhout HF 2013.** Development of polyploidy of scale-building cells in the wings of manducasexta .
5. **Kehinkar,I (2008)**. The Book of India Butterflies, Bombay Natural History Society. Oxford University press, oxford, Newyork (Kehinkar, 2008).
6. **Kunte, K (1997)**. Seasonal patterns in butterfly abundance and species diversity in four trophical habitats in the northern western Ghats, Journal of Biological science, 22:593-603.
7. **Kunte K. (2000)**, India A Life scape butterflies of peninsular India. University of press, India, 1-270.
8. **May; P.G., (1992)**. Flower selection and they dynamics of lipid reserves in twonectarivorous butterflies. Ecology, 73; 2181-2191. (May, 1992).
9. **Murugesan,M., Arun, P.R and Prusty, B.A.K. (2013)**, The butterfly community of an urban wetland system- a case study of Oussudu Bird sanctuary, puduchcrory , India Journal of Threatened Taxonomy, 5(12):4672-4678.
10. **Pollard, (1991),** changes in flight period of the Hedge Brown butterfly diversity of satara Tehsil, district satara Maharashtra, IRA Journal of Applies Science.
11. **Robbins RK, Opler PA., (1997)**. Butterfly diversity and a preliminary comparison with birds and mammal's diversity. (Robbins and opler1997) Butterfly diversity, seasonality and status Atjunagadh, gujurat, India.
12. **Sulochana Ankalgi 2013.** Diversity of butterflies from Ankalga village (Kalaburagi district) Karnataka, India.
13. **Wotton, A. (1993).** Insects of the world. Blanfordpress,UK.