M.Sc. Zoology Students of Goa University Present Research at 4th International Online Conference on Diversity

Two students pursuing their M.Sc. in Zoology at the School of Biological Sciences and Biotechnology, Goa University, participated in the 4th International Online Conference on Diversity, held from 4-6 November 2026. The students presented their research posters in the session on *Animal Diversity*, under the mentorship of Dr. Preeti Pereira, Assistant Professor in Zoology, Goa University.

Vandita Kambli presented her research entitled *"Temporal Dynamics and Species Turnover in Coleoptera Assemblages from the Goa University Campus, Goa, India"*, investigating temporal patterns and species turnover in beetle assemblages.

Atharva Naik presented his research entitled *"Temporal Dynamics and Community Turnover of Orthoptera During the Monsoon Season from the Goa University Campus, Goa, India"*, focusing on changes in grasshopper and cricket communities during the monsoon season.

The participation of these students at an international conference is a noteworthy academic achievement, particularly as they have conceptualized and undertaken interesting research investigations while still pursuing their postgraduate studies. Their work highlights the importance of campus-based biodiversity research and demonstrates how observations of local insect communities can develop into meaningful scientific investigations.

Presenting their findings at an international platform and having their abstracts published provide valuable academic exposure and encourage the students to pursue further research.

Published abstracts can be accessed at

- Vandita Kambli: https://sciforum.net/paper/36262
- Atharva Naik: https://sciforum.net/paper/36261









The 4th International Online Conference on Diversity: Biodiversity of Animals, Plants and Microorganisms
4–6 November 2026 | Online
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TEMPORAL DYNAMICS AND SPECIES TURNOVER IN COLEOPTERA ASSEMBLAGES FROM THE GOA UNIVERSITY CAMPUS,GOA, INDIA

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INTRODUCTION & AIM

Coleoptera (beetles) play important ecological roles in decomposition, nutrient cycling, pollination, and pest regulation. Their diversity can reflect habitat conditions and ecosystem health. This study aimed to document beetle diversity and assess temporal variation in species richness and community composition on the Goa University Plateau.

METHODOLOGY

Field surveys were conducted along two fixed transects on the Goa University Plateau (Fig. 1) for 12 weeks (July–September), between 0730 and 0930 AM. Beetles were photographed using a smartphone with a macro lens across vegetation, leaf litter, fallen logs, and other microhabitats. Species were identified using scientific literature and online databases, including iNaturalist and BugGuide, with scientific names and conservation statuses verified against taxonomic checklists. Temporal patterns were assessed using species richness, accumulation, first detection, occupancy, turnover, presence–absence, and NMDS analyses.



Fig. 1. Study area Map and transect

RESULTS & DISCUSSION

A total of 21 beetle species belonging to six families were recorded (Fig. 2). Cumulative richness increased from 11 species in Week 1 to 21 by Week 12, with temporary plateaus during Weeks 1–2, 6–7, and 10–11 (Fig. 3). First detections peaked in Week 1, followed by intermittent detections and a secondary peak during Weeks 9–10 (Fig. 4).

Temporal turnover was lowest between Weeks 1–2 (0.08), peaked during Weeks 5–6 (0.70), and remained moderate during Weeks 9–12 (0.42–0.46) (Fig. 2, 6), indicating substantial changes in community composition. Occupancy was highest in Weeks 1 and 7, with five species each (Fig. 7), while the presence–absence heatmap illustrated variation in species occurrence (Fig. 8). Family composition is presented in Graph. 9. MDS ordination (stress = 0.113) indicated a reliable representation of differences in community composition among weekly samples (Fig. 5). Overall, the findings reveal temporal variation in beetle richness, occurrence, and community composition during the survey. Representative species are shown in Fig. 10.



Fig. 10. A. *Chrysolina bipunctata*, B. *Epilachna dodecastigma*, C. *Glyptoscelimorpha bicondylis*, D. *Clavora suturalis*, E. *Heteronychus elegans*, F. *Cylindrotoma* sp.(a)

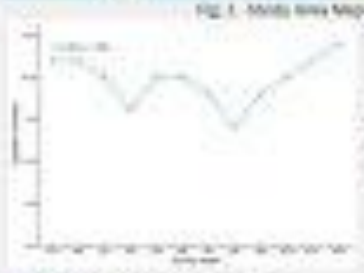


Fig. 2. Family-wise species richness

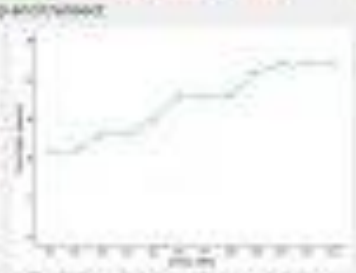


Fig. 3. Cumulative species accumulation

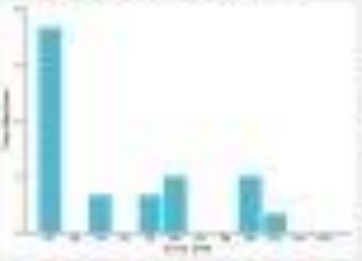


Fig. 4. First detections

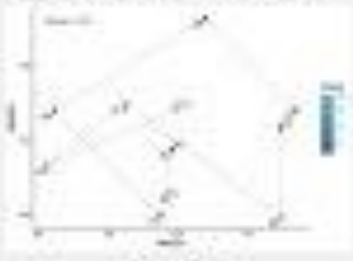


Fig. 5. NMDS



Fig. 6. Temporal turnover

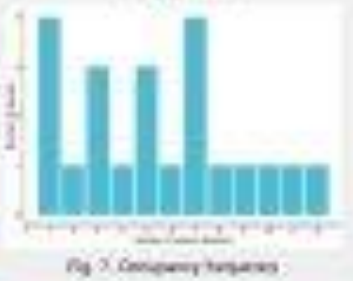


Fig. 7. Occupancy frequency



Fig. 8. Presence–absence heat map



Fig. 9. Family composition

CONCLUSION

The study documented 21 beetle species belonging to six families on the Goa University Plateau, providing baseline information on local Coleoptera diversity. Temporal fluctuations in species richness, first detections, occupancy, and community turnover indicate a dynamic assemblage throughout the survey. Longer-term monitoring across seasons, combined with standardized sampling, could improve understanding of beetle diversity, seasonal patterns, and habitat associations at the site.

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Temporal Dynamics and Community Turnover of Orthoptera During the Monsoon Season from the Goa University, Goa, India

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Introduction and Aim

Orthopterans, including grasshoppers, crickets, and katydids, play important ecological roles as herbivores, prey, and contributors to nutrient cycling. Despite their importance, their diversity remains poorly documented in parts of the Western Ghats. This study documents Orthoptera diversity and distribution on the Goa University Plateau, providing baseline information for biodiversity monitoring and conservation.

Methodology

Two transects were selected on the Goa University, Taleigao Plateau (Fig.1.). Data were collected over a 12-week period, from the third week of July to the second week of October 2025. Orthopterans encountered along the transects were observed and photographed from multiple angles using a camera to capture key morphological features for subsequent identification. No animals were captured, handled, or disturbed during the study. Species identification was carried out using published research papers, taxonomic databases such as iNaturalist and BugGuide, and relevant scientific literature.

Map of Study Area:

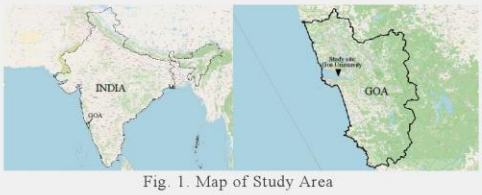


Fig. 1. Map of Study Area

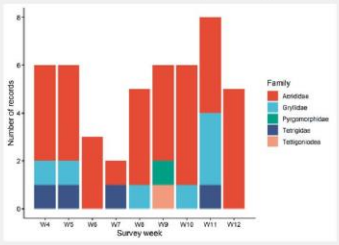


Fig. 2. Family composition

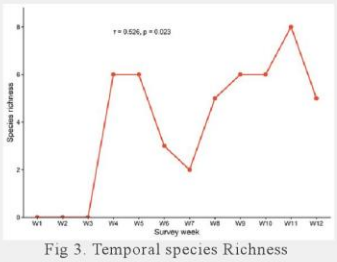


Fig 3. Temporal species Richness

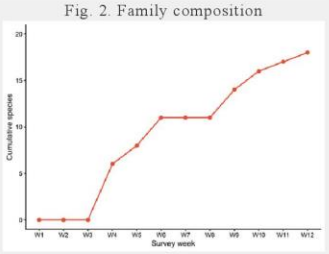


Fig. 4. Cumulative species accumulation

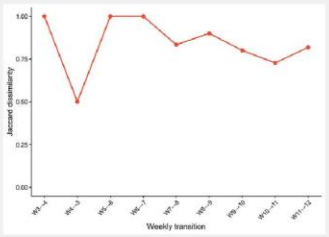


Fig. 5. Temporal turnover



Figure-11: Orthoptera - M. Family: Pyrgomorphidae N. Family Tetrigidae O. Family Tettigoniidae; *Isopsera* sp. P. Family Tettigoniidae; *Tetducetia japonica* Q. Family: Gryllidae - *Gryllodes sigillatus*; R. Family:Gryllidae; *Euscyrtus concinnus*

Result and Discussion

A total of 17 Orthoptera species from five families were recorded, with Acrididae being the most diverse (Fig. 2). Species richness increased significantly over the 12-week survey (Kendall's $\tau = 0.526$, $p = 0.023$), while the species accumulation curve had not reached an asymptote, indicating scope for further sampling (Fig. 3–4).
Temporal turnover fluctuated, peaking during Weeks 3–4, reaching its lowest between Weeks 4–5, remaining high during Weeks 5–7, and becoming moderate thereafter (Fig. 5). First detections peaked in Week 4, while occupancy varied across weeks, with no species recorded in Weeks 6–7 (Figs. 6–7). The presence–absence heatmap further highlighted temporal variability in species occurrence (Fig. 8). NMDS analysis (stress = 0.072) indicated continuous changes in community composition without distinct temporal clustering (Fig. 9). Overall, the findings suggest a dynamic Orthoptera assemblage with variable species occurrence during the survey. Representative species are shown in Fig. 10 and Fig. 11.

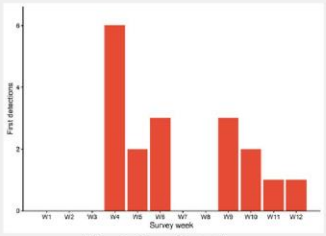


Fig. 6. First Detection

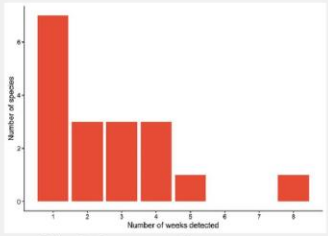


Fig. 7. Occupancy frequency

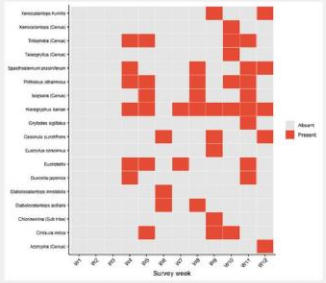


Fig. 8. Presence Absence Heatmap

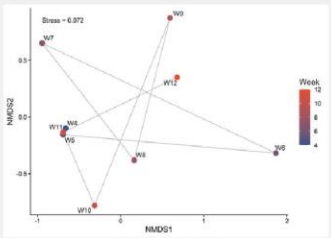


Fig. 9. NMDS



Figure-10: Family Acrididae - A. *Diabolocatantops axillaris*; B.*Spathosternum prasiniferum*; C. *Hieroglyphus banian*; D.*Trilophidia* sp.; E. *Punctifrons* sp.; F. *Pirithoicus ophthalmicus* G. *Xenocatantops* sp.; H. Family: Acrididae I. *Acorypha* sp.; J. *Paramastax sp* K. *Xenocatantops humilis*; L. *Chitaura indica.*

Conclusion

The survey provides a baseline assessment of Orthoptera diversity and temporal dynamics at the study site during the monsoon season. The increasing species richness, high temporal turnover, and absence of distinct temporal clustering highlight considerable variation in the assemblage. The incomplete species accumulation curve further indicates that longer-term and repeated sampling may reveal additional species and provide a more comprehensive understanding of local Orthoptera diversity.