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# Documenting arachnid diversity around embassy pristine apartments, Bengaluru Karnataka

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**Abstract**
This study investigates the diversity of arachnid species around Embassy Pristine Apartments, Bengaluru. Using the Visual Encounter Survey (VES) method during November 2023, a total of 11 spider species from 5 families were documented. Over 800 arachnid individuals were counted, with *Araneus ventricosus* being the most abundant species. The infestation of midge flies from Bellandur Lake significantly increased the spider population, particularly within the Araneidae family. The study highlights the biodiversity within an urban apartment complex and suggests further seasonal studies to understand the correlation between arachnid diversity and seasonal insect populations.

**Keywords:** Arachnid, diversity, spiders, urban, biodiversity

## Introduction
Spiders occupy a vast range of habitats and ecosystems and several genera are comfortable in urban regions as well. The number of spider species known from India has steadily increased from 1067 species (Tikader, 1987) [13], 1442 species (Siliwal *et al*., 2005) [14], 1520 species (Sebastian & Peter, 2009) [15] to 1686 species (Keswani *et al*., 2012) [16]. Presently, 1964 species belonging to 498 genera in 62 families are known (Caleb, J.T.D. & Sankaran, P.M., 2023) [3].
A survey was conducted in Embassy Pristine Apartments, Iblur. The Visual Encounter Survey (VES) method was used to assess arachnid diversity.

**Study area:** The study area was conducted in an apartment named Embassy Pristine and its perimeter. The apartment complex is sandwiched between the iblur firing range and Bellandur Lake, making it a strong biodiversity mini hotspot.

**Study Duration:** A short study duration within the month of November 2023 to photo document the variety of arachnid species was conducted. Identification was done primarily using webpage (Caleb, J.T.D. & Sankaran, P.M., 2023) [3].

**Materials:** Species observed were photographed using Canon 600D DSLR Camera and Moto E7 Plus mobile phone
The infestation of midge fly variants from Bellandur Lake has led to a drastic surge of spider population, particularly members of the Araneidae family. A total of 11 species of spider, belonging to 5 families were observed. Over 800 arachnid individuals were counted, with *Araneus ventricosus* being the most abundant. Most arachnids observed were found to be web spiders, with a few exceptions of active hunters.
Further study involving different seasonal studies is recommended, to correlate the species diversity to other seasonal insects such as the midge fly.

**Table 1:** Arachnid diversity observed in study area with total number of individuals

| Sl. No. | Family | Scientific name | No of individuals |
|---|---|---|---|
| 1. | Araneidae | *Araneus ventricosus* | 515 |
| 2. | | *Argiope keyserlingi* | 16 |
| 3. | | *Cyrtophora citricola* | 4 |
| 4. | | *Gasteracantha geminata* | 1 |
| 5. | | *Telamonia dimidiata* | 1 |
| 6. | | *Caerostris sexcuspidata* | 1 |
| 7. | | *Araneus diadematus* | 8 |
| 8. | Tetragnathidae | *Tetragnatha montana* | 223 |
| 9. | Salticidae | *Marpissa muscosa* | 3 |
| 10. | Pholcidae | *Pholcus phalangioides* | 34 |
| 11. | Filistatidae | *Pritha pallida* | 1 |

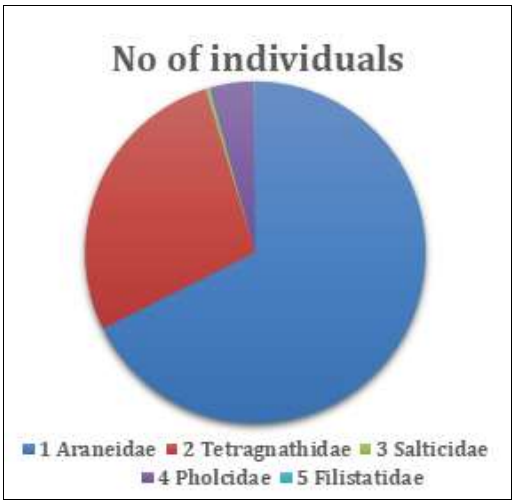



**Chart 1:** Distribution of arachnid families in embassy pristine apartments

**Fig 1:** *Araneus ventricosus*

**Fig 2:** *Argiope keyserlingi*

**Fig 3:** *Cyrtophora citricola*

**Fig 4:** *Gasteracantha geminate*

**Fig 5:** *Telamonia dimidiate*

**Fig 6:** *Caeristris sexcuspidata*

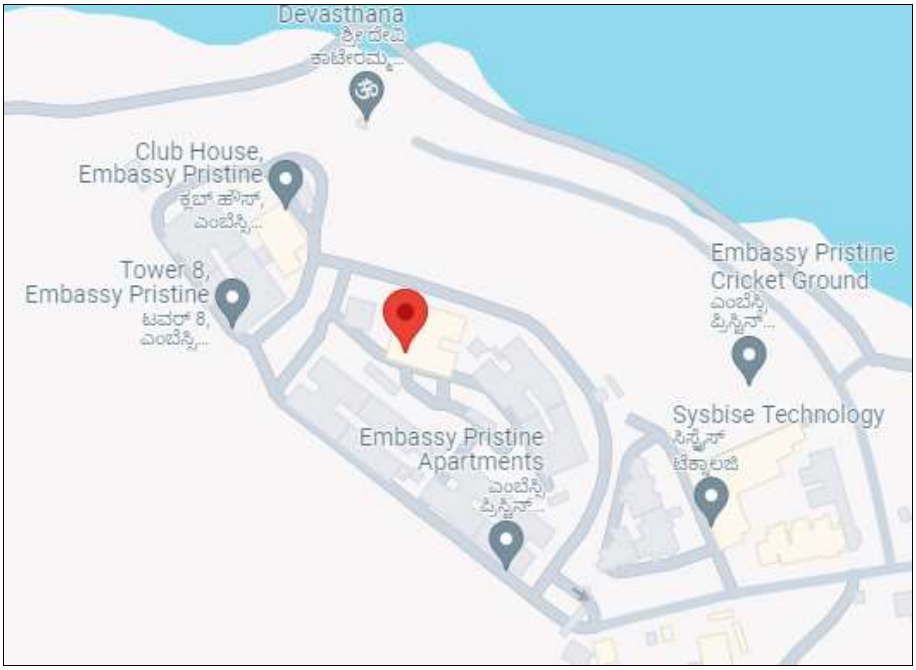
**Fig 7:** *Araneus diadematus*

**Fig 8:** *Tetragnatha montana*

**Fig 9:** *Marpissa muscosa*

**Fig 10:** *Pholcus phalangioides*

**Fig 11:** *Pritha pallida*




**Map 1:** Embassy Pristine Apartments in Bengaluru Map (Source: Google Maps)


**Map 2:** Satellite Map of Embassy Pristine Apartments with study area highlighted (red)

## Conclusion

The study at Embassy Pristine Apartments in Bengaluru, conducted in November 2023, identified 11 spider species from 5 families, totaling over 800 individuals. *Araneus ventricosus* was the most prevalent species, reflecting a notable increase in spider populations likely due to the midge fly infestation from Bellandur Lake. This surge particularly affected the Araneidae family. The findings reveal significant arachnid biodiversity in this urban setting and underscore the impact of seasonal insect populations on spider diversity. Further research across different seasons is recommended to better understand these ecological interactions and their effects on arachnid communities.

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