

## **Foraging and Behavioural study of Gaint Wood Spider in Nilambur area**

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Spiders form one of the most ubiquitous groups of predaceous organisms in the animal kingdom. They are the most diverse, female-dominated and entirely predatory order in the arthropod world. They belong to class Arachnida of the phylum Arthropoda, animals that possess jointed appendages and a chitinous exoskeleton. The members of the class Arachnida are generally characterised by two body regions, the cephalothorax having four pairs of segmented legs attached to it and the abdomen. Unlike insects, arachnids do not have antennae. They colonize almost all habitats and have great ability in resisting to adverse ecological conditions. Spiders can be clearly differentiated from other arachnids by the presence of the pedicel, a narrow stalk that joins the cephalothorax and the abdomen. Spiders are also unique as they possess spinners situated near the hind end of the abdomen, which produce silk. Spiders

constitute of the largest order of arachnids. The order Araneae ranks seventh in total species diversity among all other groups of organisms. Currently more than 39,000 valid species in 3,642 genera and 111 families have been described([reference](#)). This probably represents only a small portion of the actual number. This estimated total extend of world spider species can only be guessed at and many research speculate that up to 170000 species could exist. Evidently many species remain to be discovered and described especially in tropics ([Peter&Sebastian, year](#)).

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Spiders are usually carnivore, preying on insects and other spiders. A few large species also prey on birds and lizards. There was an observation in 2008 identifying a vegetarian species *Bagheera kiplingi*, a Central American species ([reference](#)). All spiders except the family Uloboridae possess a pair of venom gland situated near the cheliurea or in the cephalothorax, spiders depend on the venom to overpower their pest and to defence themselves against their enemies. Spiders venom are neurotoxic but only a few species pose threat to humans.

Among the spider species *Nephila pilipes* possess many uniqueness especially regarding their size and size of the web they built. *Nephila pilipes* (common Wood Spider) is seen in both tropical and sub-tropical regions of the world. They are adapted to live in a variety of habitats. They are found in primary and secondary forests and gardens. Distributed in Japan, Taiwan, Malaysia, China, Vietnam, Laos, Philippines, Sri Lanka, India, Nepal, Australia, Papua New Guinea. They are quite common in well wooded and human dominated location where there is good vegetation.

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The *Nephila pilipes* golden web is vertical with a fine irregular mesh and not symmetrical, with the hub usually nearer the top. Rather than egg sacs being hung in the web, a pit is dug which is then covered with plant debris or soil. The first, second, and fourth pairs of legs of juvenile females have dense hairy brushes, but these brushes disappear as the spider matures. They exhibit sexual dimorphism, the presence of exhibitory difference between male and female.in them female spiders are very much longer than male (male can be 4-10 times smaller than females). Their sexual style can be explained by two hypothesis male dwarfism and female gigantism. Females are large and grow to a body size of 30-50mm (overall size up to 20cm) males growing to 5-6mm(reference).

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Fairly good number of webs of *Nephila pilipes* were found in the Nilambur area. Population rise in this particular species was observed in the campus premises of D.G.M.M.E.S Mampad College campus which is geographically within the Niligiri biosphere reserve. Seasonal change in the spider webs and sudden increase in the number of webs were observed here. This was the motive behind choosing this area as the field of study.

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The study intended to deal with the an assessment of population and foraging activity of Common Wood Spider (*Nephila pilipes*) in Nilambur. By having a random outlook over the population of Common Wood Spider in Nilambur area. Here

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it was observed that their abundance in the number of nests and individual species are seen. The proposed project will be dealing with the population estimation, evaluating their foraging activities, estimating the size of nest and nesting behaviour, prey catching behaviour and building of traps. Parasitic features, seasonal differences and seasonal prey base changes. Change in season and number of species in different seasons will be studied. Threats for the species relating with the human interaction and changes happening in nesting and foraging due to human interaction will be assessed.

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As such, spiders are key components of all ecosystems in which they live. Being highly diverse and abundant predators, spiders are important regulators of terrestrial arthropod populations and may prove to be useful indicators of the overall species richness and health of terrestrial communities. They maintain ecological equilibrium by suppressing insect population. Spiders are extremely sensitive to small changes in the habitat structure, which make them an ideal candidate for land conservation studies. Studies were not much conducted about the population rise of particular species (*Nephila pilipes*) in a particular area. This study may help to have enough information gathered regarding their population and foraging.

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