

Bugs R All

Newsletter of the
Invertebrate Conservation & Information Network of South Asia (ICINSA)

Diversity of spider fauna in Sundarvan, Ahmedabad, India

The current world list of spider includes 48,418 species under 4,159 genera and 120 families and India has over 1,700 species belonging to 450 genera under 61 families (World Spider Catalog 2021). The spider diversity of Gujarat consists of 415 species under 169 genera and 40 families. Out of these, 29 genera and 17 families are endemic to Gujarat (Yadav et al. 2017).

The study was conducted from August 2019 till January 2020. Bushes, tree trunks, ground surface, foliage and grasslands were all searched for spiders. Spiders were found in different strata in a habitat, so different methods were applied to study them. Methods which were employed to collect the data included active search following Yadav et al. (2017), vegetation-beating following Sebastian & Peter (2009), and leaf-litter sampling (Yadav et al. 2017).

Live specimens of spiders were photographed using a Canon EOS 80D camera with Canon EF-F 18–135 mm f/3.5–5.6 IS USM lens. Other equipment used as aid to get better photographs were a Photron Stedy Pro 560V tripod and Wipro Emerald Rechargeable LED torch.



Aerial representation of Sundarvan through maps.

GPS information was recorded using the GPS status and toolbox application for Android which uses the in-built accelerometer and gyroscope sensors of a modern-day cell phone. The data was later on verified with Google Earth service.

Sundarvan, set in Ahmedabad, Gujarat, India, is a unique facility of the Centre for Environment Education (CEE). This 1.3 ha of land was originally a mango orchard, later converted into a nature discovery centre.

During the study, 46 species were recorded belonging to 31 genera and 14 families. A total number of 105 individuals were recorded. Seven different types of guild structures were also observed.

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Checklist of spider species recorded during the study.

Family	Scientific Name	Guild	Family	Scientific Name	Guild
Araneidae	<i>Argiope anasuja</i>	Orb Web Weavers	Pholcidae	<i>Crossopriza iyon</i>	Space Web Builders
	<i>Cyclosa</i> sp.	Orb Web Weavers		<i>Pholcidae</i> sp.	Space Web Builders
	<i>Cytophora</i> sp. 1	Orb Web Weavers	Salticidae	<i>Hyllus semicupreus</i>	Stalkers
	<i>Cytophora</i> sp. 2	Orb Web Weavers		<i>Menemerus bivittatus</i>	Stalkers
	<i>Cytophora</i> sp. 3	Orb Web Weavers		<i>Menemerus</i> sp.	Stalkers
	<i>Eriovixia</i> sp. 1	Orb Web Weavers		<i>Phintella</i> sp.	Stalkers
	<i>Eriovixia</i> sp. 2	Orb Web Weavers		<i>Phintelloides</i> sp.	Stalkers
	<i>Larinia</i> sp. 1	Orb Web Weavers		<i>Rudakius</i> sp.	Stalkers
	<i>Neoscona crucifera</i>	Orb Web Weavers		<i>Stenaelurillus</i> sp.	Stalkers
	<i>Neoscona</i> sp. 1	Orb Web Weavers		<i>Thyene imperialis</i>	Stalkers
	<i>Neoscona</i> sp. 2	Orb Web Weavers	Scytodidae	<i>Scytodes</i> sp.	Ground Runners
	<i>Neoscona</i> sp. 3	Orb Web Weavers	Sparassidae	<i>Heteropoda</i> sp.	Foliage Runners
	<i>Neoscona</i> sp. 4	Orb Web Weavers		<i>Olios</i> sp.	Foliage Runners
	<i>Poltys</i> sp.	Orb Web Weavers	Tetragnathidae	<i>Guizygiella</i> sp.	Orb Web Weavers
Dictynidae	<i>Nigma</i> sp.	Space Web Builders		<i>Leucauge decorata</i>	Orb Web Weavers
Eresidae	<i>Stegodyphus</i> sp.	Sheet Web Builder	Therididae	<i>Paraseatoda</i> sp.	Space Web Builders
Gnaphosidae	<i>Gnaphosidae</i> sp.	Ground Runners		<i>Rhomphaea</i> sp.	Space Web Builders
Hersiliidae	<i>Hersilia savignyi</i>	Ambush Hunters		<i>Therididae</i> sp.	Space Web Builders
Oxyopidae	<i>Oxyopes biramicus</i>	Ambush Hunters	Thomisidae	<i>Oxytate</i> sp.	Ambush Hunters
	<i>Oxyopes</i> sp. 1	Ambush Hunters		<i>Thomisidae</i> sp.	Ambush Hunters
	<i>Oxyopes</i> sp. 2	Ambush Hunters	Uloboridae	<i>Uloborus plumipies</i>	Orb Web Weavers
	<i>Oxyopes</i> sp. 3	Ambush Hunters		<i>Uloborus</i> sp.	Orb Web Weavers
	<i>Oxyopes</i> sp. 4	Ambush Hunters		<i>Zosis</i> sp.	Orb Web Weavers

During this study, a total of 105 individuals were observed. Forty-six species were identified which belonged to 31 genera and 14 families. Among the observations, family Araneidae was the most abundant among all. Forty-four individuals (41.9% of the total count) were found from family Araneidae which belonged to seven genera and 14 species. Occurrence of high number of

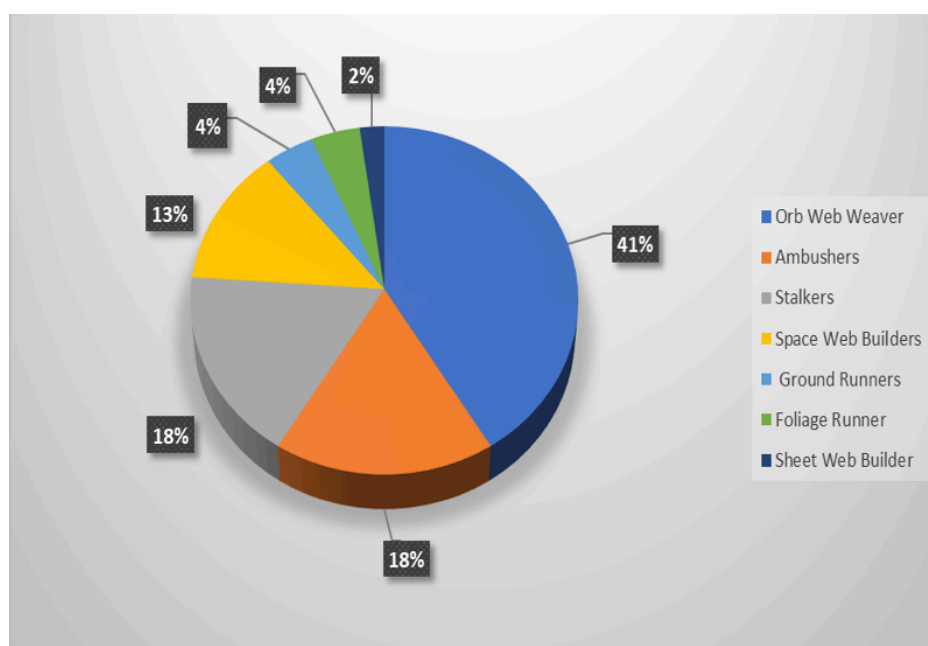
araneids could be due to mixed vegetation of Sundarvan, which provides enough space to build webs of different sizes. Orb web weavers (19 species, 42%) are the most dominant guild observed. The results show that spider diversity in Sundarvan (which is located in middle of the city) is much higher and more intensive studies may yield more information.

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Family wise distribution of the number of spiders observed.

	Family	Genera	Species	No. of Individuals
1.	Araneidae	7	14	44
2.	Dictynidae	1	1	1
3.	Eresidae	1	1	1
4.	Gnaphosidae	1	1	1
5.	Hersiliidae	1	1	4
6.	Oxyopidae	1	5	8
7.	Pholicidae	2	2	4
8.	Salticidae	7	8	16
9.	Scytodidae	1	1	4
10.	Sparassidae	2	2	4
11.	Tetragnathidae	2	2	3
12.	Therididae	2	3	5
13.	Thomisidae	1	2	3
14.	Uloboridae	2	3	7
	Total	31	46	105



Composition (%) of guild structure of Spiders from Sundarvan.

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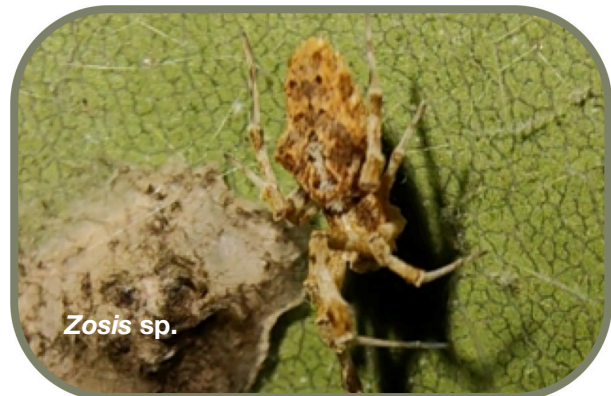
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Invertebrate Conservation & Information Network of South Asia (ICINSA)*Argiope anasuja**Heteropoda sp.**Oxyopes sp. 2**Phintelloides sp.**Hersilia savignyi* Lucas*Hyllus semicupreus**Oxyopes sp. 3**Neoscona crucifera*

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Invertebrate Conservation & Information Network of South Asia (ICINSA)*Guizygiella* sp.*Oxytate* sp.*Rudakius* sp.*Gnaphosidae* sp.*Neoscona* sp. 4*Zosis* sp.*Cyrtophora* sp3*Phintella* sp.

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Eriovixia sp. 1sp.



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