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BUTTERFLY DIVERSITY IN WADEGAON VILLAGE, TALUKA BALAPUR, DISTRICT AKOLA, MAHARASHTRA

Zoology

Shubham R. Rathod Asst. Prof., Shri R. L. T. College of Science, Akola.

ABSTRACT

Butterflies are well-known for their vivid colors and fascinating patterns. They contribute to the total biodiversity of the ecosystem. They add to the beauty of natural settings and serve as a source of inspiration for artists, writers, and musicians. They are part of a complex web of interactions between various species, and their presence reflects the health of an ecosystem. The study of butterfly diversity within a geographic area can help us comprehend the intricate interplay between biodiversity, environmental factors, and species richness. During this investigation in Wadegoan village, a total of 13 butterfly species were discovered belonging to 12 genera and 4 families. The Papilionidae family contained the most species (04). There were also Pieridae (03), Nymphalidae (02), and Lycaenidae (03) species discovered.

KEYWORDS

Butterflies, Biodiversity, Wadegon, Papilionidae.

INTRODUCTION

Butterflies are among the most beautiful insects, inspiring youngsters, naturalists, and scientists alike Wadatkar and Shirbhate, (2004). They play an important role in pollination because they carry pollen from one blossom to another while feasting on nectar. Many plant species, including many crops used by humans, rely on this method for reproduction. The presence or absence of specific butterfly species can serve as an indicator of the overall health of an ecosystem. Environmental disturbances or imbalances, such as habitat loss, pollution, or climate change, can cause butterfly population fluctuations Zamre et al., (2019). Many species are completely seasonal and prefer only a few places. Despite this, community ecologists have mostly ignored butterflies, with few studies available on their community structures, population dynamics, and the eco-climatic variables that affect them. Wadegaon is a village in the Indian state of Maharashtra, located in the Akola district of the Vidharbha region. Wadegaon is part of the Balapur Taluka. This settlement is also known as Vidharbha's Bardoli. It is well-known for its lemon production and export. The inhabitants' major source of income is farming. Wadegaon is located on the state route between Patur and Balapur. Wadegaon lies at latitude 20° 34' 40" North, longitude 76° 51' 6" East, at an elevation of 925 feet (282 meters) above sea level. The annual temperature ranges from 48°C (118°F) to 10°C (50°F), resulting in favorable vegetation for butterflies. The principal occupation of the inhabitants is lemon cultivation.

MATERIALS AND METHODS

Various water places, agricultural lands, and vegetation-covered regions were chosen as sampling sites for the study around the hamlet. The selected sampling sites contain a variety of caterpillar host plants as well as flowering plants used by butterflies for nectar. The butterflies were sampled for four months, from January to April 2023. Field observations were conducted twice a week. The survey was conducted between the hours of 9.00 and 17.00. Butterflies were obtained using a variety of approaches, including direct observation, collecting, and photography. Some of the obtained specimens were narcotized in a bottle with menthol crystals and then air-dried before mounting on an insect wooden mount Senthilkumar et. al., (2006).

The observations were made at a distance of 1 to 3 meters and were recognized using accessible material, which included conventional insect keys such as illustration pictures, guides, the internet, research papers, and literature, among other things. Butterflies of the Indian Region, M. A. Wynter-Blyth (1995) and the Identification of Indian Butterflies, Evans. W.H., (1932) was used to identify lepidopterans. For sample collection, a photographic method was used, and the smartphone used to capture photographs of butterflies was a Realme 7i with a 64-megapixel (f/1.8) primary camera, an 8-megapixel (f/2.2) camera, a 2-megapixel (f/2.4) camera, and a 2-megapixel (f/2.4) camera. To catch butterflies, a sweeping net constructed of a light metal pipe, a light metal ring, and a soft, thin mosquito net was utilized.

Butterflies were chased through the field, and when they came within sweeping range, the net was quickly lowered on the butterfly. These butterflies were immobilized immediately after capture since butterflies flap and struggle to escape, damaging their wings in the process. Butterfly sightings were classified as VC- Very common (more than 100 sightings), C- Common (50-100 sightings), NR- Not rare (10-15 sightings), R- Rare (2-15 sightings), and VR- Very rare (1-2 sightings).

OBSERVATION

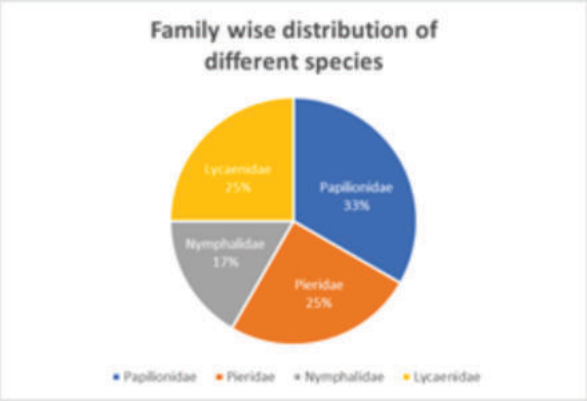
During the present study 12 species of butterflies were recorded belonging to 11 genera and 4 families. Of the total species, maximum species observed were from family Papilionoidea. The result of present study done at Wadegeon village is shown in the following table.

Sr. No.	Family	Common name	Genus	Species	Status
1)	Papilio-nidae	Common rose	Pachliopta	aristolochiae	VC
2)	Papilio-nidae	Lime butterfly	Papilio	demoleus	VC
3)	Papilio-nidae	Common Mormon	Papilio	polytes	C
4)	Papilio-nidae	Tailed jay	Graphium	agamemnon	C
5)	Pieridae	Common gull	Cepora	nerissa	C
6)	Pieridae	Common grass yellow	Eurema	hecabe	VC
7)	Pieridae	Cabbage white	Pieris	canidia	R
8)	Nym-phalidae	Evening common brown	Melanitis	leda	NR
9)	Nym-phalidae	Tawny coster	Acraea	violae	VC
10)	Lycae-nidae	Common pierrot	Castalius	rosimon	R
11)	Lycae-nidae	Grass jewel	Freyeria	trochylus	C
12)	Lycae-nidae	Lime blue	Chilades	lajus	R

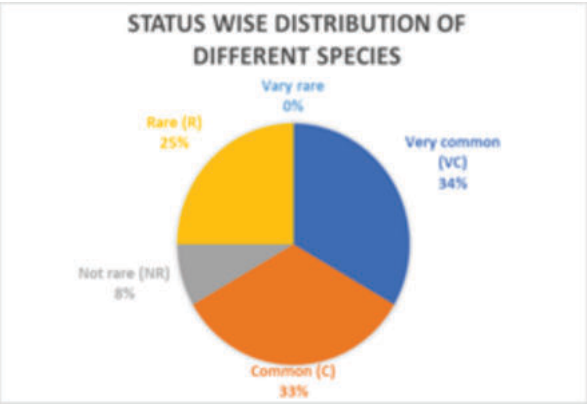
VC- Very common, C- Common, NR- Not rare, R- Rare, VR- Very rare.

RESULT

The current study is undeniably a comprehensive effort to investigate butterfly variety in Wadegaon, Akola district of Maharashtra in general, and the area under examination in particular. During the current study, a total of 12 butterfly species from four families were documented throughout four months from January 2023 to April 2023. Table 1 shows the total number of butterfly species seen. Four of the total butterfly species listed are Papilionidae, three are Pieridae, three are Lycaenidae, and two are Nymphalidae. The family-wise distribution is shown in graph 1 and the status-wise distribution is shown in graph 2.



Family-wise Distribution Of Different Species



Status-wise Distribution Of Different Species

The Lime butterfly (Papilio demolus) was found to be the most abundant butterfly in this study across all sampling sites. Caterpillars that feed on citrus trees such as lemon, orange, and Indian gooseberry are more common in the area surrounding Wadegaon village because lemon cultivation is more prevalent.

DISCUSSION AND CONCLUSION

The Papilionidae family (Lepidoptera: Papilionoidea) is a butterfly family with considerable ecological and conservation value Xin-Tong Yu and colleagues, (2023). According to Gogoi et al., Lepidopteran butterflies are a natural treasure that play an important role in the environment. In the Soraipung range of Dehing Patkai National Park, they discovered 92 species from 5 families. The Nymphalidae were found to be dominating among the five families, followed by Papilionidae, Lycaenidae, Hesperidae, and least Pieridae, but in our study, Papilionidae was found to be more dominant and Nymphalidae was found to be less dominant. Senthilkumar et al., (2006) discovered 37 butterfly species in Gibbon Wildlife Sanctuary, Assam, belonging to 12 genera and 10 families. Family Nymphlidae and Papilionidae had the largest number of species among the collected samples. Also, during our investigation we found largest number species belonged to family Papilionidae only.

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