

Studies on butterfly diversity in forest habitats of Warangal district, Telangana, India

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ABSTRACT

Butterflies are winged insects. They are one of the most interesting insect groups for research. They are important natural resources and provide economics and ecological benefits. They are good environmental indicators and pollinator of plants. They are found in agro ecosystem etc. And they are cosmopolitan. The objective of the present study focused on the assessment of the diversity and conservation priorities in the study area it is afferent species were collected by a total of 20 species of butterflies under 4 families, were recorded during the winter season (November, 2015 to February, 2016) from Madagudem, Gangaram and Kodishalamitta forest habitats of Pakhal Wildlife Sanctuary, Warangal. Nymphalidae was recorded as the most dominant family with (9) species followed by Pieridae (5), Papilionidae (4), Lycaenidae (2). out of 20 species.

Keywords: butterfly diversity, forest habitats, Pakhal wildlife sanctuary

INTRODUCTION

Lepidoptera is occupying a major part in the global biodiversity and are the second largest order in the class insecta. Lepidoptera regarded as one of the important components of biodiversity and are the second largest order among insects, approximately 150,000 species so far known to the literature. Butterflies are winged insects, they are the important natural resources and provide economic and ecological benefits. Butterflies are good environmental indicators and pollinators of plants. Butterflies are broadly considered as potent ecological indicators and are sensitive to the temperature, humidity, light levels and also to the habitat disturbance (Balmer and Erhardh, 2000). Butterflies occupy different environmental conditions in the ecosystem. Due to the harmful gases and chemicals liberated by the industries affects the life of butterflies. At the same time Pesticides are also one of the factors effecting life of butterflies. Radiation from various resources also affects butterflies in the ecosystem.

MATERIALS AND METHODS

The study area is located at Pakhal wildlife Sanctuary in three sites, they are Madagudem, Gangaram and Kodishalamitta forest habitats in Warangal district. The butterflies were collected by using aerial insect sweeping nets and hand picking methods during the winter season (November 2015 to February 2016). The collected specimens were brought to the laboratory and killed in killing bottles by using chloroform or naphthalene poisoning. The collected specimens were preserved by both dry and wet preservation methods. They were identified with the available literature by following standard Keys, illustration picture guides of Zoological Survey of Indian and Bombay Natural History Society, Mumbai, and Standard guides (Kunte & Gadgil (2000); Husain, (2008); Evans WH (1932); Kehimkarl (2008) and field guides.

RESULTS AND DISCUSSION

A Total of 20 species of butterfly representing 4 families and 17 genera have been recorded during the study period (Table-1). It was observed that Nymphalidae family maximum abundance belonging to 9 species (very common). Pieridae family is the second most abundance with 5 species followed by papilionidae family with 4 species. Among the Lycaenoidae family is the least abundance with 2 species and belongs to rare category. The butterflies habitats is associated with host plants (M,S Thagur, 2012). The rich diversity of

How to Site This Article:

E. Narayana, Ramesh R. and Lakshmi M (2017). Studies on butterfly diversity in forest habitats of Warangal district, Telangana, India. *Biolife*. 5(1), pp 44-47. doi:10.17812/blj.2017.5108

Received: 17 January 2017

Accepted: 1 February 2017 & Published on 6 February 2017

Table-1. List of butterflies recorded from Pakhal wild life Sanctuary together with status and flight period

S.NO.	Common Name	Scientific Name	Status	Flight period
Papilionidae (4)				
1	Common lime	<i>Papilio demoleus</i> (Linnaeus, 1758)	V C	W
2	Blue Mormon	<i>Papilio polymnester</i> (Cramer, 1775)	R	W
3	Common rose	<i>Pachlioptaaristolocheiae</i> (Fabricius, 1775)	C	W
4	Crimson rose	<i>Pachliopta hector</i> (Linnaeus, 1758)	C	W
Nymphalidae (9)				
5	Baronet	<i>Ethalia nails</i> (Forster, 1774)	R	W
6	Lemon pansy	<i>Junonia lemonias</i> (Linnaeus, 1758)	R	W
7	Common evening Brown	<i>Melanitis leda</i> (Linnaeus, 1758)	R	W
8	Common Indian crow	<i>Euploea core</i> (cramer, 1780)	V C	W
9	Plain Tiger	<i>Danaus chrysippus</i> ((Linnaeus, 1758)	V C	W
10	Common Tiger	<i>Danaus geutia</i> (Cramer, 1779)	V C	W
11	Tawny Coster	<i>Acraea terpscore</i> (Linnaeus, 1758)	V C	W
12	Sullied Sailer	<i>Neptis soma</i> (Linnaeus, 1758)	R	W
13	Blue Tiger	<i>Tirumala limniace</i> (Linnaeus, 1775)	C	W
Pieridae(5)				
14	Indian cabbage White	<i>Pieris canidia</i> (Linnaeus, 1768)	C	W
15	Cloudless Sulpher	<i>Phoebis sennae</i>	C	W
16	One-Spot Gras Yellow	<i>Eurema andersonii</i> Moore	V C	W
17	Common Emmigrant	<i>Catopsilia pyranthe</i> (Latreille, 1758)	V C	W
18	Common Jezebel	<i>Delias eucharis</i> (Drury, 1773)	R	W
Lycaeniidae(2)				
19	Indian Cupid	<i>Chilades parrhasius</i> (Fabricius, 1793)	R	W
20	Tailless Lineblue	<i>Prosotas dubiosa</i> (Semper, 1879)	R	W

Listed in Indian Wildlife (Protection) Act, 1972 VC-Very Common (>100 sightings), C-Common (50-100 sightings), R-Rare (2-5 sightings), VR- Very Rare (1-2 sightings), W- winter

butterflies Nymphalidae and Pieridae in Pakhal wildlife Sanctuary, Warangal indicates a varied assembling of plant species. Butterflies for habitats were associated with the following plants *Milletta Pinnata*, *Terminalia Arjuna*, *Tectona Grandis*, *Ziziphus Jujuba*, *Calotropis Gigantea*, *Achyranthes Aspera*, *Aervalanata*, *Cassia Auriculata*, *Hypti Suaveolens*, *Celoosia agrentea*, *Glossocardia Bosvolia*, *Rhychospora Wightiana* and *Acacia Milotica*. The study area also comprises different Grasses, Herbs, and Shrubs to longer trees. Butterfly diversity varies with season Kunte (2000) and Aiswarya (2012) reported their abundance for only a few month and rare or absent during other months of the year. The diversity of butterflies may increase in rich vegetation for butterfly conservation as well as they pollinators (Aiswarya V, 2014).

The present study is revealed that the importance of the butterflies and interrelationship between the preferred habitats and butterfly diversity.

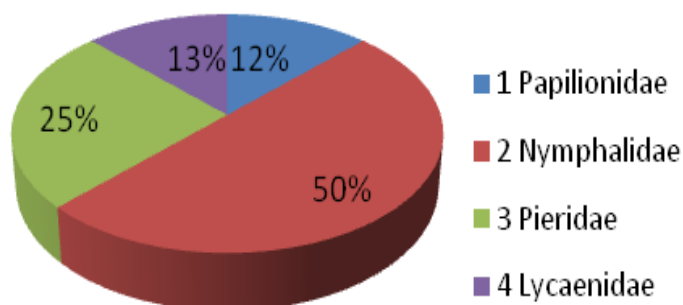
Figure-1. Family-wise composition of butterfly species at Pakhal wild life Sanctuary, Warangal

Plate: Photographs of the butterflies observed at Pakhal Wild life Sanctuary in Warangal (Table for corresponding names)

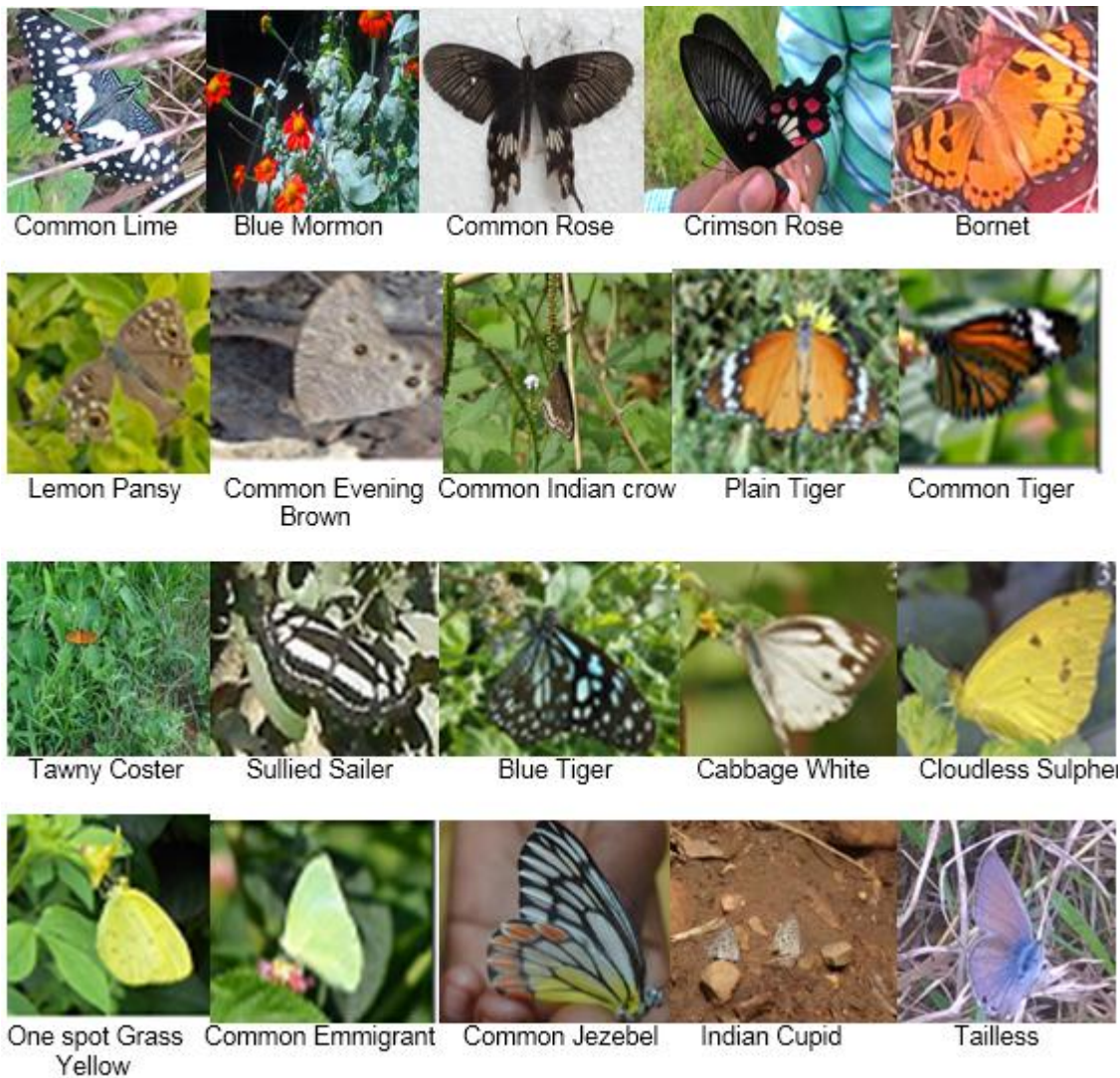
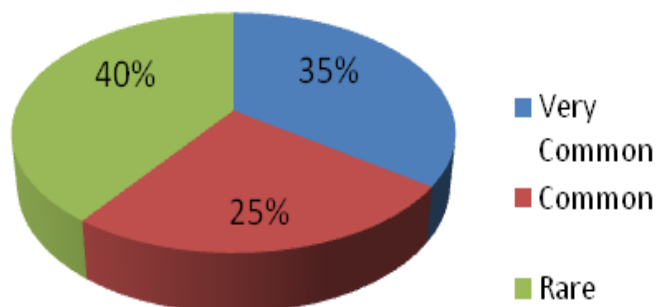


Figure-2. Status of butterfly species at Pakhal wild life sanctuary, Warangal



Conflict of Interests

Authors declare that there is no conflict of interests regarding the publication of this paper.

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