

A STUDY ON BUTTERFLY DIVERSITY IN ETURUNAGARAM WILDLIFE SANCTUARY WARANGAL DISTRICT, TELANGANA, INDIA.

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ABSTRACT

The Sanctuary is located in Eturnagaram division in Warangal district, Telangana. It is bordered to the Maharashtra and Chattisgarh. It consists of hilly with many streams and rich flora and fauna. Topography of this sanctuary is mostly dry deciduous forest. A study on the diversity of butterflies was carried out over a period of one year from October 2015 to September 2016. A total of 30 butterfly species were identified belonging to 4 families, Nymphalidae was recorded as the most dominant family with (13 species) followed by Pieridae (11 species), Papilionidae (5 species) and Lycaenidae (1 species) respectively.

KEYWORDS: Butterfly Species diversity, Eturnagaram wildlife Sanctuary, Nymphalidae, Papilionidae and Lycaenidae..

INTRODUCTION

Butterflies are beautiful flying insects with large scaly wings. They are approximately 20,000 species of butterflies in the world. Plants and butterflies are inter linked, They feed on nectar, larvae and foliage, they are important components of food web and aesthetic value. They are important natural resource and provide economic and ecological benefits. They are good environmental indicators^{[1][2]} and pollinators of plants.

Occurrence and diversity of butterflies is generally considered as indicators of an ecosystem^[3] some species prefer some set of habitats.^[4] They are generally affected by local climatic condition.^[5] They are potential indicators of the ecosystem as they are sensitive to microclimate, temperature solar radiation. They are highly sensitive to environmental fluctuation like temperature humidity, rainfall and light.^{[6][7]}

MATERIALS AND METHODS

The study area is located at Eturnagaram wildlife sanctuary (Thadvai, Chelpaka, Malyala and Kalvapalli forest habitats) in Warangal district. The observations were made regularly from morning 9:00 a.m. to till 5:00 p.m, in the afternoon, which is the peak time for butterfly activity. Butterflies were identified in the field its self; in difficult cases by following capture or photography and even by using Aerial insect sweeping nets and hand picking methods also. The work was carried out during October, 2015 to September, 2016. The collected butterflies' specimens were brought to the laboratory and

killed in killing bottles by using naphthalene or chloroform poisoning.

The collected butterflies' 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^{[8][9][10]} and field guides. All scientific names followed in the present study are based on the work.^[11] Butterflies were categorized in five categories on the basis of their abundance such as VC-Very Common (100 sightings), C-Common(51-100 sightings).NR-Not Rare(16-50 sightings),R- Rare(3-15 sightings),VR-Very Rare(1-2 sightings).^[12]

RESULTS AND DISCUSSION

A total of 30 butterfly species representing 4 families and 20 genera have been recorded during the study period (Table-1). It was observed that Nymphalidae family is more abundant. 13 species belonging to Nymphalidae were very common. Pieridae family is second most abundant with 11 species followed by Papilionidae family with 5 species. Among these Lycaenidae family is the least in abundance with only one species and it is rare.

The Nymphalidae and Pieridae are highly abundant in Eturnagaram wildlife sanctuary, Warangal and it indicates a varied assembling of plant species. The butterfly habitat is associated with host plant.^[13]

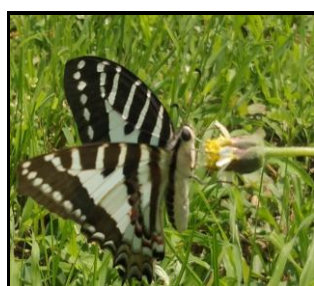
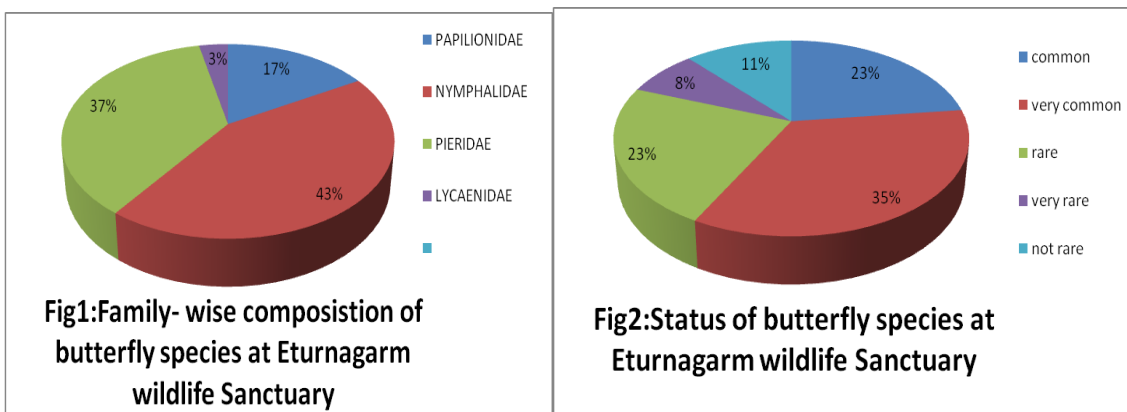
Butterflies preferred host plants in this habitat are *Tectona grandis*, *Zizuphus jujube*, *Calotropis gigantea*, *Achyranthes aspera*, *Aervalanata*, *Cassia auriculata*, *Celoosia agrentea*, *Acacia nilotica*, *Butea superb*, *Barleria cristata*, *Buchanania lanzan*, *Amaranthus*

spinosus, *Aerva lanata*, *Andrographis paniculata*. It also comprised of different kinds of grass, herbs, Shrubs to longer trees. The butterfly diversity varies with season.^[14]

Table 1: List of butterflies recorded from at Eturunagaram wildlife Sanctuary together with the status and flight period.

SL.NO	FAMILY	COMMON NAME	SCIENTIFIC NAME	STATUS	FLIGHT PERIOD
I	Papilionidae (5)				
1		Spot swardtail	<i>Graphiumnomius</i> (Esper,1793)	VC	S
2		Common lime	<i>Papilio demoleus</i> (Linnaeus,1758)	VC	S,R,W
3		Common rose	<i>Pachlio ptaaristolochiae</i> (Fabricius,1775)	C	S,R,W
4		Crimson rose	<i>Pachiliopta hector</i> (Linnaeus,1758)	C	W
5		Blue Mormon	<i>Papilio polymnester</i> (Cramer,1775)	R	R,W
II	Nymphalidae (13)				
6		Common Indian crow	<i>Euploea core</i> (cramer,1780)	VC	S,R,W
7		Plain Tiger	<i>Danaus chrysippus</i> ((Linnaeus,1758)	C	S,R,W
8		Common Tiger	<i>Danaus geutia</i> (Cramer,1779)	C	S,R,W
9		Blue Tiger	<i>Tirumala limniace</i> (Linnaeus,1775)	VC	S,R,W
10		Common leopard	<i>Phalanta phalantha</i> (Dury,1773)	C	R,W
11		Tawny Coster	<i>Acraea terpscore</i> (Linnaeus,1758)	VC	S,R,W
12		Common sailer	<i>Neptis hylas</i>	R	S
13		Baronet	<i>Ethalia nails</i> (Forster,1774)	NR	R,W
14		Lemon pansy	<i>Junonia lemonias</i> (Linnaeus,1758)	VR	S,R,W
15		Blue pansy	<i>Junonia orithya</i>	R	R,W
16		Pecock pansy	<i>Junonia almona</i>	VR	W
17		Chocolate pansy	<i>Junonia iphita</i>	NR	R,W
18		Gray pansy	<i>Junonia atlites</i>	NR	R,W
IV	Pieridae (11)				
19		Common Emmigrant	<i>Catopsilia pomana</i> (Fabricius,1775)	VC	S,R,W
20		Small grass yellow	<i>Eurema brigitta</i>	VC	S,R,W
21		Grass yellow	<i>Eurema andersoni</i> Rubbela	C	S,R,W
22		Spotless grass yellow	<i>Eurema laeta</i> (Bioduval)	C	R,W
23		Cloudless sulpher	<i>Phoebis sennae</i>	C	W
24		Pioneer(Copperwhite)	<i>Anaphaeis aurota</i> , <i>Leptosia nina</i>	R	R,W
25		Common Jezebel	<i>Delias eucharis</i> (Drury,1773)	R	S,R,W
26		Small orange tip	<i>Catotis etrida</i>	C	W,S
27		Crimson tip	<i>Colotisdanae</i>	C	S,W
28		Yellow orange tip	<i>Ixiaspyrene</i>	NR	W
29		Molted Emmigrant	<i>Catopsilia pyranthe</i> (Latreille,1758)	C	S,R,W
	Lycaenidae(1)				
30		Tailless line blue	<i>Prosotasdubiosa</i>	R	W

Note: Listed in Indian Wildlife (Protection) Act, 1972 VC- Very Common(>100 sightings),C-Common(50-100 sighting),R-Rare(2-5 sightings),VR- Very Rare(1-2 sightings), S-Summer,R- Rain ,W- Winter



Spot swardtail



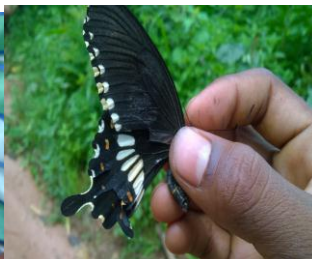
Common lime



Common rose



Crimson rose



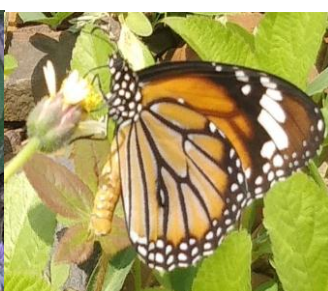
Blue mormon



Common Indian crow



Plain Tiger



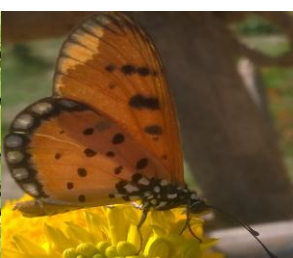
Common Tiger



Blue Tiger



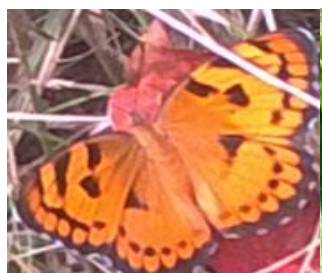
Common leopard



Tawny Coster



Common Sailer



Baronet



Blue pansy



Lemon Pansy



Peacock pansy



Chocolate pansy



Gray pansy



Common Emmigrant



Small grass yellow



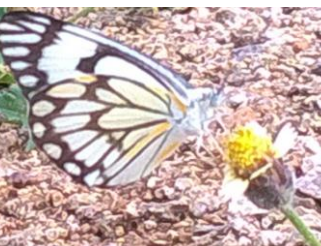
Grass yellow



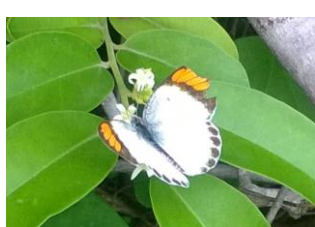
Spotless grass yellow



Cloudless sulphur



Common Jezebel



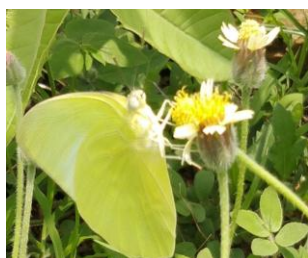
Small orange tip



Crimsontip



Yellow orange tip



Molted Emmigrant



Tailless line blue

Plate: Photographs of the butterflies observed at Eturunagaram Wildlife Sanctuary in Warangal (Table for corresponding names).

CONCLUSION

The Nymphalidae and Pieridae are highly abundant in the most abundant IS Lycaenidae family in Eturunagaram wildlife Sanctuary. Diversity butterfly normal this is because due to available water resources. However Conservation is necessary to preserve the diversity butterfly.

CONFLICT: The authors declare that there is no conflict of interest.

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Ethical Matter: The Present Work Involves No Experimental Animals There for Ethical Matter Does not Erase.

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