

**A CONTRIBUTION TO THE BUTTERFLY FAUNA
OF MANJEERA WILDLIFE SANCTUARY,
ANDHRA PRADESH, INDIA (LEPIDOPTERA)**

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ABSTRACT: The butterfly fauna of the Manjeera wildlife sanctuary was studied between December 2010 and December 2011. A total of 62 species of butterflies spread over 5 families were recorded of which family Nymphalidae accounted for 38.70% followed by Pieridae (27.41%), Lycaenidae (16.12%), Papilionidae (11.29%) and Hesperidae (6.45%).

KEY WORDS: Manjeera Wildlife Sanctuary, Medak, Andhra Pradesh, India.

River Godavari the largest of the peninsular Indian rivers has a catchment area spread over the states of Maharashtra, Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Orissa and Karnataka. It originates in the Thriambak hills in Nashik district of Maharashtra and flows southeast to join the Bay of Bengal. One of the important tributaries of the Godavari river system is the river Manjeera. The Manjeera river originates in the Balaghat hills in Madhya Pradesh, flows through Latur district in Maharashtra and Bidar district of Karnataka entering into Medak district of Andhra Pradesh before emptying into the Godavari River at Basara near Nizamabad district. The Manjeera basin encompasses an area of 30914 km² of which agriculture lands occupy almost about 59.4%, followed by pasture lands (39.5%), forest (0.65%) and water (0.45%) (Gosain and Rao, 2009). It is the main source of drinking water to Medak, Nizamabad districts and also to the twin cities of Hyderabad. The Singur barrage is of the important irrigation projects taken up in the river Godavari constructed on the Manjeera river in Medak district of Andhra Pradesh. An area of 2,800 ha between Singoor and Manjira Barrage was declared a crocodile sanctuary, The Manjira wildlife sanctuary (17° 57' 52" N, 78° 02' 22" E) (Fig. 1) was established in 1978 in Medak district, Andhra Pradesh. The Sanctuary follows the course of river Manjira over a length of 36 km. This is the abode for a number of resident and migratory birds in addition to being home for the marsh crocodile *Crocodylus palustris*.

The Manjeera reservoir is dotted with nine islands that are relatively elevated areas among the submerged areas. The reservoir supports submergent and emergent vegetation. A narrow margin of *Typha* sp., *Ipomoea* sp. and *Acacia* sp. fringe the waterline, while agriculture lands surround the reservoir and the river. The forest tracts are a typical tropical scrub forest type with *Acacia* sp., *Prosopis juliflora*, *Pithecelobium dulce*, *Tamarindus indicus*, *Butea monosperma* and *Azadirachta indica* as the major species. Other plant species found here are *Chrozophora rottleri*, *Nymphoides hydrophylla*, *Polygonum glabrum*, *Leucas aspera*, *Centella asiatica*, *Abutilon indicum*, *Ipomea cornea*, *Ipomea cairica*, *Argemone Mexicana*, *Xanthium strumarium*, *Spilanthus calva*, *Pistia stratiotes*,

Eichhornia crassipes, *Hydrilla verticillata*, *Vallisneria spiralis* and *Marsilea quadrifolia*, *Bothriochloa pertusa*, *Chloris barbata*, *Cynodon dactylon*, *Cyperus rotundus*, *Heteropogon contortus*, *Dactyloctenium aegyptium*. Grass species like *Bothriochloa pertusa*, *Chloris barbata*, *Cynodon dactylon*, *Cyperus rotundus*, *Heteropogon contortus*, *Dactyloctenium aegyptium* are present in the Sanctuary and surroundings.

Very few studies have been done on the butterfly diversity in Andhra Pradesh. Gupta et al. (2012) recorded a total of 50 species of butterflies belonging to five families. ENVID (2000-2002) recorded a total of 60 species of butterflies. Rao et al. (2004) reported the presence of 89 species of butterflies belonging to five families from Nagarjunasagar Srisailem Tiger Reserve. Srinivasulu and Rao (1999) reported a total of 15 species of butterflies belonging to 3 families from Gundla Bramehwaram Wildlife Sanctuary. Preliminary and casual surveys have yielded upto 19 species of butterflies belonging to four families in Kawal Wildlife Sanctuary (C. Srinivasulu, pers. obs.). As no study exists documenting the butterfly fauna of Manjeera Wildlife Sanctuary, we aim to fill this lacuna through a year-long study.

This wetland, apart from being the abode for the mugger crocodile, is home to five species of cultured fishes; 10 species of amphibians; 26 species of reptiles, 18 species of mammals and over 170 species of birds (Prasad et al. in prep.).

The Manjeera Wildlife Sanctuary experiences a tropical climate with temperatures ranging between 42°C in the summers to 15°C in the winters and receives about 1000-1100mm of rainfall annually. The soil type here is red loamy, sandy and black cotton soil fertile for growing cotton, rice, jowar, maize and sugarcane.

MATERIAL AND METHODS

As a part of the faunistic surveys of the Manjeera Wildlife Sanctuary a preliminary survey was conducted between December 2010 and December 2011 to access the butterfly diversity of the region. The survey period was categorised into post-monsoon (November-February), pre-monsoon (March to May) and monsoon (June to October). Observations were carried out both in the mornings and evenings when the butterflies were the most active between 7.30 to 12.30 A.M. and 3.00 to 6.00 P.M. Four habitat types were chosen namely, marshy areas, agriculture lands, small woodlands and grasslands and survey was conducted along transects passing through these habitats. Voucher specimens were not collected due to want of permissions from the forest department hence photo vouchers were maintained and were deposited in the Natural History Museum of Osmania University, Hyderabad. The species were identified using standard literature (Kunte, 2000; Kehimkar, 2008).

RESULTS AND DISCUSSION

Manjeera Wildlife Sanctuary is known for its rich avian diversity and has been accorded Important Bird Area (IBA) status (Islam & Rahmani, 2005). The present survey shows that this area is rich in butterfly diversity and a total of sixty species of butterflies spread over five families have been recorded (Table 1). The family Nymphalidae exhibited the maximum species richness (35%), comprising of 21 species, followed by Pieridae (18 species, 30%), Lycaenidae (10 species, 16.7%), Papilionidae (7 species, 11.7%) and Hesperidae (4 species, 6.6%). Grass yellows (*Eurema* sp.), blues, crimson tips, orange tips, mormons, common baron were

most common during monsoons. Grass blues, grass jewel, blue pansy and the joker are such species that prefer herbaceous vegetation over grasses. Butterflies such as common evening browns, spotless grass yellow, blue pansy, lemon pansy, painted lady and leopard are found in areas with good growth of grass as well as areas with herbaceous growth while pierrots and ceruleans are seen in areas with no herbaceous growth. Common Baron and Great Egfly were observed to prefer feeding on *Santalum album* flowers present on one of the nine islands in the reservoir.

Butterflies are indicators of environment and ecosystem health as any slight changes in the ecosystem or ambient conditions affect their populations drastically. Hence, further detailed studies on butterfly fauna with regards to their role in the wetland ecosystem needs to be carried out for better conservation of fast dwindling wetlands.

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Table 1. List of butterflies recorded from Manjeera Wildlife Sanctuary, Andhra Pradesh.

S.No.	Scientific Name	Common Name	Abundance	Habitat Preference
Family Papilionidae				
1	<i>Graphium doson</i>	Common Jay	C	SW, A, G
2	<i>Graphium Agamemnon</i>	Tailed Jay	C	SW, A, G
3	<i>Papilio polytes Romulus</i>	Common Mormon	O	SW, A, G
4	<i>Papilio polytes stichius</i>	Common Mormon	C	SW, A, G
5	<i>Papilio demoleus</i>	Lime Butterfly	C	SW, A, G
6	<i>Atrophaneura aristolochiae</i>	Common Rose	C	SW, A, G
7	<i>Atrophaneura hector</i>	Crimson Rose	C	SW, A, G
Family Pieridae				
8	<i>Eurema blanda</i>	Three-Spot Grass Yellow	O	SW, A, G
9	<i>Eurema andersoni</i>	One Spot Grass Yellow	C	SW, A, G, M
10	<i>Eurema hecabe</i>	Common Grass Yellow	C	SW, A, G, M
11	<i>Catopsilia pomona</i>	Common Emigrant	C	SW, A, G, M
12	<i>Catopsilia pyranthe</i>	Mottled Emigrant	C	SW, A, G, M
13	<i>Ixias pyrene</i>	Yellow Orange Tip	O	SW, A, G, M
14	<i>Cepora nerissa</i>	Common Gull	C	SW, A, G
15	<i>Delias eucharis</i>	Common Jezebel	C	SW, A, G

S.No.	Scientific Name	Common Name	Abundance	Habitat Preference
16	<i>Colotis etrida</i>	Small Orange Tip	O	SW, A, G
17	<i>Colotis eucharis</i>	Plain Orange Tip	O	SW, A, G
18	<i>Ixias marianne</i>	White Orange Tip	O	SW, A, G
19	<i>Pareronia valeria</i>	Common Wanderer	C	SW, A
20	<i>Colotis danae</i>	Crimson-Tip	O	SW, A
21	<i>Colotis fausta</i>	Large Salmon Arab	VR	SW, G, M
22	<i>Belenois aurota</i>	Pioneer	C	SW, A, G, M
23	<i>Eurema laeta</i>	Spotless grass Yellow	C	SW, A, G, M
24	<i>Pareronia avatar</i>	Pale Wanderer	VR	SW, A
25	<i>Tirumala limniace</i>	Blue Tiger	C	SW, A, G, M
Family Nymphalidae				
26	<i>Danaus chrysippus</i>	Plain Tiger	C	SW, A, G, M
27	<i>Danaus genutia</i>	Striped Tiger	C	SW, A, G, M
28	<i>Euploea core</i>	Common Indian Crow	C	SW, A, G, M
29	<i>Melanitis leda</i>	Common Evening Brown	C	SW, A, G
30	<i>Mycalesis perseus</i>	Common Bushbrown	C	SW, A, G
31	<i>Mycalesis visala</i>	Long Brand Bushbrown	C	SW, A, G
32	<i>Melanitis zitenius</i>	Great Evening Brown	C	SW, A, G

S.No.	Scientific Name	Common Name	Abundance	Habitat Preference
33	<i>Acraea violae</i>	Tawny Coster	C	SW, A, G, M
34	<i>Phalanta phalantha</i>	Common Leopard	C	SW, A, G, M
35	<i>Euthalia aconthea</i>	Common Baron	O	SW, A, G
36	<i>Ariadne merione</i>	Common Castor	C	SW, A, G
37	<i>Ariadne ariadne</i>	Angled Castor	O	SW, A, G
38	<i>Byblia ilithyia</i>	Joker	C	SW, A, G
39	<i>Junonia orithya</i>	Blue Pansy	C	SW, A, G, M
40	<i>Junonia atlites</i>	Gray Pansy	C	SW, A, G, M
41	<i>Junonia almana</i>	Peacock Pansy	C	SW, A, G, M
42	<i>Junonia lemonias</i>	Lemon Pansy	C	SW, A, G, M
43	<i>Hypolimnas misippus</i>	Danaid Egg fly	C	SW, A
44	<i>Hypolimnas bolina</i>	Great Egg fly	O	SW, A
45	<i>Vanessa cardui</i>	Painted Lady	VR	SW, A, M
46	<i>Euthalia nais</i>	Baronet	O	SW, A
Family Hesperidae				
47	<i>Spialia galba</i>	Indian Skipper	C	A, G, M
48	<i>Borbo cinnara</i>	Rice Swift	C	A, G, M
49	<i>Pelopidas mathias</i>	Small Branded Swift	C	A, G, M
50	<i>Hasora chromus</i>	Common Banded Awl	C	SW, A, G, M

S.No.	Scientific Name	Common Name	Abundance	Habitat Preference
Family Lycaenidae				
51	<i>Zizula hylax</i>	Tiny Grass Blue	C	SW, A, G, M
52	<i>Pseudozizeeria maha</i>	Pale Grass Blue	O	SW, A, G, M
53	<i>Catachrysops strabo</i>	Forget-Me-Not	C	SW, A, G
54	<i>Spindasis vulcanus</i>	Common Silverline	O	A, G
55	<i>Tarucus nara</i>	Rounded Pierrot	O	SW, A, G
56	<i>Euchrysops cnejus</i>	Gram Blue	O	SW, A, G, M
57	<i>Leptotes plinius</i>	Zebra Blue	O	SW, A, G
58	<i>Castalius rosimon</i>	Common Pierrot	C	SW, A, G
59	<i>Freyeria trochylus</i>	Grass jewel	C	SW, A, G
60	<i>Jamides celeno aelianus</i>	Common Cerulean	C	SW, A, G, M

Key: Abundance: C - Common, O - Occasional, VR - Very Rare.
Habitat: SW - Small Woodlands, A - Agriculture Lands, G – Grasslands, M - Marshy areas.