

**Full Length Research Paper**

Diversity of Butterflies in Omkareshwar Region Nearby Area of Narmada River Bank, Madhya Pradesh India

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Abstract

A detailed study on the butterfly species diversity was carried out at Omkareshwar at Narmada river bank, in district Khandwa, Madhya Pradesh, India during 2011-13. The pattern of butterflies abundance and species richness are studied in wild (forest, scrub and grassland). A total of 70 butterfly species belonging to 8 families of order Lepidoptera were recorded during the study period. The family Nymphalidae, represented by 16 species was the most dominant followed by Papilionidae 07 Pieridae (11 species), Danaidae 05, Satyridae 08, Riodinidae 01, Lycaenidae 14 and Hesperidae 08 species. From the conservation point of view, the study area is undisturbed and rich in flora and fauna species.

Keywords: Butterfly species diversity, Omkareshwar, Narmada River bank India.

Introduction

The Narmada River is one of the most important river of Madhya Pradesh states yet to be polluted. Land areas near this bank are covered by dense forest and agriculture with wide variety of biodiversity of organism and plant. But the water quality of river is decreasing day by day due to anthropogenic activities, so to save this holy river. It is must to save its biodiversity. Biodiversity is often considered to be synonymous with species richness and relative species abundance from all sources and the ecological complexes of which they are part. In India about 1, 15, 000 species of plants and animals have been identified and described. Conservation of all animals in the ecosystem is them mega species like elephant, tiger or small beautiful creature like butterflies, is equally important. India harbors total 1504 butterfly's species (Varshney 2006) which is almost 8.74% of total world and central India covers 177 butterfly species (Kunte 2000). Butterflies with attractive beauty play important role in our food web, including pollination, and they are useful in studies of population and community ecology (Pollard 1991) as indicators of ecosystem health because they are very sensitive to changes in microclimate and habitat (Erhardt 1985; Kremen 1992). Sensitivity to environmental change, both climatic and ecological disturbances, make butterflies important "indicator taxa". With a relatively short life-cycle and host plant reliance, butterfly communities show impact quickly and can act as an early warning of portending shifts in the surrounding flora and fauna. But as their habitat is destroying we are at the stage to loss this small but important creature. The present paper aims to observe butterfly biodiversity to conserve them by conserving their habitat. This small collection from the area can add lot to our information for conserving natural habitat near Narmada river bank. No previous record of butterfly's biodiversity from Omkareshwar region of Narmada river bank, Madhya Pradesh has been monitored.

Materials and Method

The present study was carried out to know the existing diversity of butterflies nearby the area the Narmada river bank from Omkareshwar region. The visit was made from February 2011 to December 2013 random weekly observation was done. An extensive and regular (monthly) collection of butterfly was made during sampling periods using a sweep net. Butterflies were identified by direct visual observation and photographed; some specimens were collected by sweep nets placed in bottles and further identified with the help of field guide (Wynter-Blyth 1957; Kunte 2000; Varshney 1983; Gay *et al* 1992 ;).

Study area

River Narmada is the third holy and fifth longest west flowing river of India know as the biggest and one of the 13 prominent rivers of India, which covers 98,797 sq km of total water-shed area. It is the third largest river that completely flows within India after Ganges and Godavari. The Narmada river basin lies in the central part of India, between 72° 20" E to 81°45" E longitude and 21° 20" N to 23° 45" N latitude with a mean elevation of 760 m.

Sampling stations:**Omkareshwar**

Omkareshwar is a famous place of pilgrimage, situated 77 km from Indore in Khandwa District, Madhya Pradesh. Shaped like the holy Hindu Symbol 'OM' this sacred island, on the conflux of the river Narmada and Kaveri is visited by pilgrims from all over the country to seek blessing at the temple of Shri Omkar Mandhata. Millions of the pilgrims of both local & foreigners visit the place every year. It's Latitude (DMS) 22° 15', 1''N and Longitude (DMS) 76° 8'', 48''E.

Results and Discussion

Total 70 butterfly's species from 8 families are enlisted during the present study. Family wise, the numbers of species are Papilionidae- 07; Pieridae- 11; Danaidae- 05; Satyridae- 08; Nymphalidae- 16; Riodinidae-1; Lycaenidae- 14; and Hesperiidae- 08; (Table1). Oriental landscapes are increasingly dominated by human land use systems and natural forest cover is decreasing rapidly in India in general and in central India in particular. The present work embodies the diversity of butterflies in Narmada region in selected 3 ecosystems distributed all over near primary forest, agroforestry and rivers and streams in the Narmada. Both butterfly species richness and abundance are seemed to be significantly affected by habitat related modification. Human habitation may account for the increase in species richness in the forest edge and locations near and around river bank. It has been found (Spitzer *et al.* 1993) that an increase in butterfly diversity and species richness near villages occurs due to fruit trees and another plantation species being planted.

Table 1: Checklist of Butterflies from Omkareshwar, of Narmada river bank

Sr. No	Common Name	Scientific Name
A. Suborder : Rhopalocera		
Family : PAPILIONIDAE		
1. Subfamily : Papilioninae		
1	Common Mormon	<i>Papilio polytes</i> Cr.
2	Lime Butterfly	<i>Papilio demoleus</i> L.
3	Common Mime	<i>Papilio clytia</i> L.
4	Common Rose	<i>Pachliopta aristolochiae</i> F.
5	Tailed Jay	<i>Graphium Agamemnon</i> L.
6	Common Jay	<i>Graphium doson</i> Fd.
7	Common Bluebottle	<i>Graphium sarpedon</i> L.
II. Family : PIERIDAE		
1. Subfamily : Pierinae		
8	Common Jezebel	<i>Delis eucharis</i> Dry.
9	Common Gull	<i>Cepora nerissa</i> F.
10	Pioneer	<i>Anaphaeis aurota</i> F.
11	Common Albatross	<i>Appis albina darada</i> Fd.
12	White Orange Tip	<i>Ixias Marianne</i> Cr.
13	Yellow Orange Tip	<i>Ixias pyrene</i> L.
14	Common Wanderer	<i>Pareronia valeria</i> Cra.
2. Subfamily : Colladinae		
15	Lemon Emigrant	<i>Catopsilia crocale Pomona</i> F.
16	Mottled Emigrant	<i>Catopsilia pyranthe</i> L.
17	Small Grass Yellow	<i>Eurema brigitta rubella</i> Wallace
18	Common Grass Yellow	<i>Eurema hecabe</i> L.
III. Family : DANAIDAE		
1. Subfamily : Danainae		
19	Plain Tiger	<i>Danaus chrysippus</i> L.
20	Common Tiger	<i>Danaus genutia</i> Cr.
21	Blue Tiger	<i>Tirumala limniace</i>
22	Glassy Tiger	<i>Parantica aglea</i>
2. Subfamily : Euploeinae		
23	Common Indian Crow	<i>Euploea core</i> Cr.
IV. Family : SATYRIDAE		
1. Subfamily : Satyrinae		

24	Comm. Evening Brown	<i>Melanitis leda ismeme</i> Cr.
25	Common Bushbrown	<i>Mycalesis perseus</i> F.
26	Dark-Brand Bushbrown	<i>Mycalesis mineus</i> L.
27	White-line Bushbrown	<i>Mycalesis malsara</i> M.
28	Tamil Bushbrown	<i>Mycalesis Visala subdita</i> M.
29	Common Treebrown	<i>Lethe rohria</i> F.
30	Common Three -ring	<i>Ypthima asterope mahratta</i> M.
31	Common Four- ring	<i>Ypthima ceylonica huebneri</i> Kirby.
V. Family : NYMPHALIDAE		
1. Subfamily : Biblidinae		
32	Joker	<i>Byblia ilithyia</i> Dry.
33	Common Castor	<i>Ariadne merione</i> Cr.
34	Angled Castor	<i>Ariadne ariadne</i> L.
2. Subfamily : Agrynninae		
35	Common Leopard	<i>Phalanta phalantha</i> Dry.
3. Subfamily : Nymphalinae		
36	Painted Lady	<i>Cynthia cardui</i> L.
37	Lemon Pansy	<i>Junonia lemonias</i> L.
38	Grey Pansy	<i>Junonia atlited</i> L.
39	Peacock Pansy	<i>Junonia almana</i> L.
40	Orange Oak Leaf	<i>Kallima inachus</i> Bdv.
4. Subfamily : Limenitidinae		
41	Baronet	<i>Euthalia nais</i> Forst
42	Baron	<i>Euthalia aconthea</i> Cr.
43	Commander	<i>Moduza procris procris</i> Cr.
44	Common Sailer	<i>Neptis hylas varmona</i> L.
5. Subfamily : Charaxinae		
45	Common Nawab	<i>Polyura athamas</i> Dry
46	Black Rajah	<i>Charaxes fabius</i> F.
6. Subfamily : Acraeinae		
47	Tawny Coster	<i>Acraea violae</i> F.
VI. Family : RIODINIDAE		
1. Subfamily : Riodininae		
48	Plum Judy	<i>Abisara echerius</i> Stoll.
VII. Family : LYCAENIDAE		
1. Subfamily : Polyommatainae		
49	Tiny Grass Blue	<i>Zizula hylax</i> F.
50	Grass Jewel	<i>Freyeria trochylus</i> Freyer
51	Lesser Grass Blue	<i>Zizinia otis</i> F.
52	African Babul Blue	<i>Azonus jesus</i> (Guerin)
53	Common Hedge Blue	<i>Calastrina puspa</i> Moore
54	Plains Cupid	<i>Chilades pandava</i>
55	Small Cupid	<i>Chilades parrhasius</i>
56	Common Pierrot	<i>Castalius rosimon</i> (F)
57	Common Lineblue	<i>Prosotas nora</i> C & R Felder
58	Tailless Lineblue	<i>Prosotas dubiosa sivoka</i> Evans
2. Subfamily : Aphaeinae		
59	Common Silverline	<i>Spindasis vulcanus</i> F.
60	Club Silverline	<i>Spindasis syama</i> Peguanus M.
3. Subfamily : Theclinae		
61	Indian Red Flash	<i>Rapala jarbus</i> Fab.
62	Large Oak Blue	<i>Arhopala amantes</i> Hew.
B. Suborder : Grypocera		

VIII. Family : HESPERIIDAE		
1. Subfamily : Coeliadinae		
63	Brown Awl	<i>Badamia exclamationis</i> F.
64	Common Banded Awl	<i>Hasora chromus</i> Car
2. Subfamily : Pyrginae		
65	Common spotted Flat	<i>Celaenorrhinus leucocera</i> Koll.
66	Indian Skipper	<i>Spialia galba</i> F.
67	Golden Angle	<i>Odontoptilum ransonnetti</i> C & R Felder
3. Subfamily : Hesperinae		
68	Indian Palm Bob	<i>Suastus gremius</i> F.
69	Dark Palm Dart	<i>Telicota ancilla</i> Mabille
70	Common Dartlet	<i>Oriens gola</i> Moore

Conclusion

Conclusion of Butterflies diversity indicates that the butterflies diversity largely depends upon the flora diversity, so conservation of butterflies diversity may possible by enhancement of vegetation, composition of habitat those mostly preferred by butterflies. This habitat will be only preserved when anthropogenic activities are stopped, because Narmada river bank is blessed with wide variety of flora and fauna.

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