



## IDENTIFICATION OF BUTTERFLIES OCCURRED IN UTHANGARAI

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### **Abstract**

Arthropods are good indicators of habitat biodiversity because they respond quickly to environmental changes, and are a highly diverse tax on. Lepidoptera (butterflies and moths) are the second largest order of arthropods and making them particularly useful for biodiversity surveys. The butterflies are the best indicator of these changes and can be used as surrogate to assess the conservation threat to the biodiversity. The purpose of present investigation is to understand the butterfly diversity, seasonal variations and to analyses changes in abundance of butterflies diversity and species richness in Uthangarai. Butterflies are diurnal insects which typically have a slender body with knobbed antennae and broad colorful wings. They differ from moths which are crepuscular or nocturnal insects having a stout body and feathery or hair like antennae. They play a pivotal role in determining the stability of an ecosystem since their numbers can fluctuate drastically with even slight changes in temperature, weather conditions, degradation or pollution.

**Key Words: Butterfly, Biodiversity, Degradation.**

### **Introduction**

Arthropods are good indicators of habitat biodiversity because they respond quickly to environmental changes, and are a highly diverse tax on. Lepidoptera (butterflies and moths) are the second largest order of arthropods and making them particularly useful for biodiversity surveys. The butterflies are the best indicator of these changes and can be used as surrogate to assess the conservation threat to the biodiversity. The purpose of present investigation is to understand the butterfly diversity, seasonal variations and to analyses changes in abundance of butterflies diversity and species richness in Uthangarai. Butterflies are diurnal insects which typically have a slender body with knobbed antennae and broad colorful wings.

They differ from moths which are crepuscular or nocturnal insects having a stout body and feathery or hair like antennae. They play a pivotal role in determining the stability of an ecosystem since their numbers can fluctuate drastically with even slight changes in temperature, weather conditions, degradation or pollution. They also serve as indispensable links in the food web in the many ecosystems and niches they inhabit. In addition, butterflies have been identified as bioindicators, capable of representing the overall health of the environment (Emily *et al*, 2008). Butterflies (Lepidoptera: Rhopalocera) are one of the most plant dependent group of insects when compared to other mega diverse insect groups (Kristensen and Skalski 1999). 1. They are one of the labor forces that help in pollination; a key stone ecological process in natural sustainability throughout the world. They enhance the earth's beauty incontestably and add an aesthetic element to the ambient environment (Guptha *etal.*,2012). Butterflies bring about in nature a visual treat and are thus considered as the "fluttering jewels of nature." Nearly 1500 butterfly species<sup>3-4</sup> are identified from the Indian subcontinent, constituting 8.33% of the 18,000 known species in the world

The distribution of butterflies depends upon the availability of their host plants. Owing to habitat destruction for developmental activities in urban areas and unscientific management of natural resources, much of our native butterflies are fast disappearing and at present, their survival is under threat. Habitat fragmentation and deterioration quality are two of the major threats to biodiversity (Rosin *etal.* 2012). These threats can be narrowed down to human dominated landscape which forms a substantial and ever increasing amount of the earth's land surface (Ramesh *etal.*, 2010). However, even a minor change in the ecosystem may affect their survival and many species are likely to become extinct. It has been stated that extinction of a single species may trigger the extinction of several other species that are related to it. The objective of this study was to conduct preliminary observation to identify areas with large population of butterflies.

### **Study Area**

Our college campus- it has the botanical garden and tree plantation area, which can be surrounded by the agricultural land. It is situated in Uthangarai









### Study Area



### Materials and Methods

Preliminary survey was carried out during the day from 12 noon to 5 Pm for a period of 3 months when the insect density is high in these study area. The butterflies were collected by various methods such as netting and handpicking Techniques. All butterflies sighted were identified in the field during day time. Some species were collected with the help of sweeping nets and photographed (Jeyapraha and Ajaz Haja Mohideen 2017) The different habitats of our college campus is studied in the botanical garden and tree plantation area. Photographic documentation was done and the data was maintained. Pollard walking method was followed for observing butterflies (Pollard, 1977). Since, identification up to the species level cannot be done with only photographs, additional methods used were survey methods where in the individuals were collected by plain bag of mosquito hand net Adult butterflies were collected by sweeping net. Once the butterfly is caught in the net, it is secured as quickly as possible in a fold of the net. Then they are gently placed with their wings folded together, antennae placed extended in paper envelopes of different sizes. Collected butterflies identified up to the species level.

### Common Names of Identified Butterflies

 Crimson Rose	 Three Spot Grass Yellow	 Tawny Coster
 Malabar Raven	 Common Emigrant	 Plain Tiger



 Lime	 Common Albatross	 Common Indian Crow
 Common Grass Yellow	 Common Four Ring	 Common Evening Brown
 Psyche	 Dark Band Bush Brown	 Nigger

**List of Butterflies in Study Area**

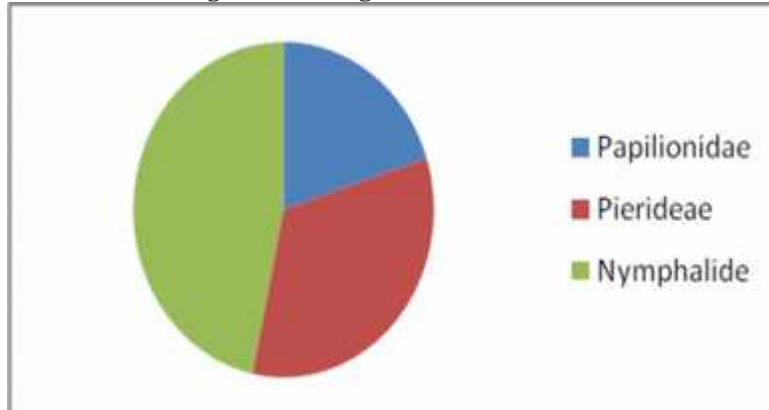
S.NO	SCIENTIFIC NAME	COMMON NAME	FAMILY
1	Pachliopta hector	Crimson Rose	Papilionidae
2	Papilio dravidarum	Malabar Raven	Papilionidae
3	Papilio demoleus	Lime	Papilionidae
4	Eurema hecabe	Common Grass Yellow	Pieridae
5	Leptosia nina	Psyche	Pieridae
6	Eurema blanda	Three Spot Grass Yellow	Pieridae
7	Catopsilia Pomona	Common Emigrant	Pieridae
8	Appias albinia	Common Albatross	Pieridae
9	Ypthima huebneri	Common Four Ring	Nymphalide
10	Mycalesis mineus	Dark Brand Bushbrown	Nymphalide
11	Acraea violae	Tawny Coster	Nymphalide
12	Danaus chrysippus	Plain Tiger	Nymphalide
13	Euploea core	Common Indian Crow	Nymphalide
14	Melanitis leda	Common Evening Brown	Nymphalide
15	Orsotriaena medus	Nigger	Nymphalide



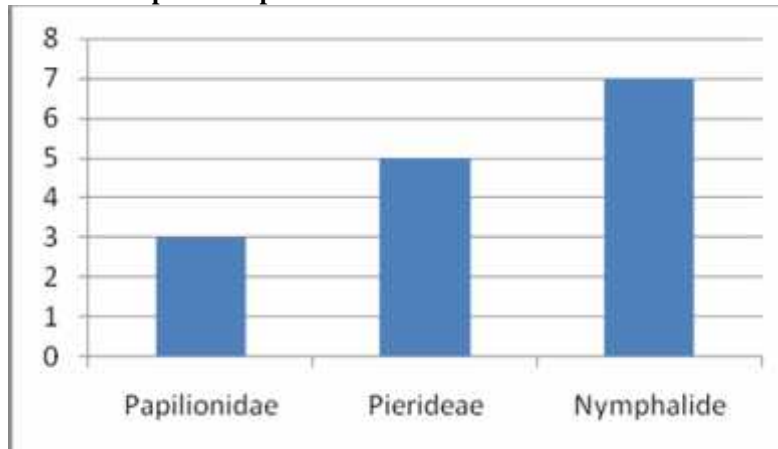
During the study period 15 species of butterflies belonging to 3 families were recorded.

S.No.	Family Name	Number of Butterflies
1	Papilionidae	3
2	Pieridae	5
3	Nymphalidae	7

**Pie Diagram Showing the Presence Of Families**



**Graphical Representation of the Families Recorded**



### Conclusion

The most important threat to butterfly diversity is urbanization. Complete eradication of greenery in an area drives the butterfly population away since there is a lack of food and reduced chances to increase the progeny. Human activities have an undeniably strong influence on the biodiversity of all existing species. Even though parks, sanctuaries and other protected areas are specifically kept off limits for humans, the effect of pollution which is a direct result of urbanization nevertheless affects biodiversity.

This was also evident from the fact the butterflies were most commonly seen near agricultural and the borders of forest areas and less in areas near human dwellings. Clark *et al.*, 2007, reported that increased human activities were associated with decreased butterfly species and claimed that the rich, rare and specialized species were the most affected. Conservation is hence necessary to keep these rare species from being pushed to extinction



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