# BUTTERFLY BIODIVERSITY AT BANNERGHATTA NATIONAL PARK

***Deepanjali Tamang***
*Student, Christ University, Bangalore*
*deepanjalitamang09@gmail.com*
*Guided by*
***Dr. Antony P U***
*Department of Zoology*
*Christ University*

# ACKNOWLEDGEMENT


- Firstly I would like to express my sincere gratitude to the Organizing Committee of Lake 2010 for accepting my paper and giving me an opportunity to present it
- I would also express my most sincere gratitude and indebtedness to Dr. Antony P.U, Dr. Priyadarshini P, Maddi of Department of Zoology, Christ University, Bangalore for their guidance and support
- Last but not the least, I express my special regards to my parents for their commitment to my work and their selfless sacrifice.

# INTRODUCTION

- **Important characteristics of Butterflies:**
  - **Beautiful and highly diverse**
  - **Major role in food chain and pollination**
  - **Highly sensitive to weather and habitat changes**
- **India is home to over 1500 species (9% of the total butterfly species worldwide)**

# Objective

**To conduct a primary study on butterflies in the Bannerghatta National Park area in order to understand the distribution of butterfly diversity in that area**

# Study Area

- The Park lies between coordinates 12°48'03"N 77°34'32"E and is India's first Butterfly Park
- Key features of the park are:
  - More than 2000 butterflies at any given time representing 42 species
  - Host to research activities like DNA barcoding of Butterflies
  - Spread over 18 acres and open to public
  - Has a butterfly garden which leads to a butterfly conservatory spread over an area of 10,500 sq. feet

# MATERIALS AND METHODS
## (Line transect method)

- Notebook , Camera(Kodak, 10.2 MP, 3X zoom), Pen, and a measuring tape was used.
- The park was divided in 3 areas of approximately 15 m each for the survey. The butterflies were observed and recorded on both side of the line.
- The observations were done during evening hours for about 30 mins per area for 5 days and morning hours for 2 days.
- The observation timing are evening 4:30 pm to 6 pm and in the morning from 9 am to 10:30 am. The observations were done on every alternate day.
- The project work started on Sunday 29 August 2010 at 9 am and continued till Friday 10 September 2010 evening
- The butterflies were identified in the interpretation centre in the museum there.

# RESULTs

## Figure 1:

| Species | Total | Species | Total | Species | Total |
|---|---|---|---|---|---|
| *Catopsilia pomona* | 19 | *Ariadne merione* | 8 | *White spotted* | 7 |
| *Catopsilia pyranthe* | 10 | *Tiruala limniace* | 3 | *Euploea core* | 13 |
| *Papilia polytes* | 41 | *Troides minos* | 1 | | |
| *Pachloipta hector* | 17 | *Euthalia nais* | 25 | | |

## Figure 2:

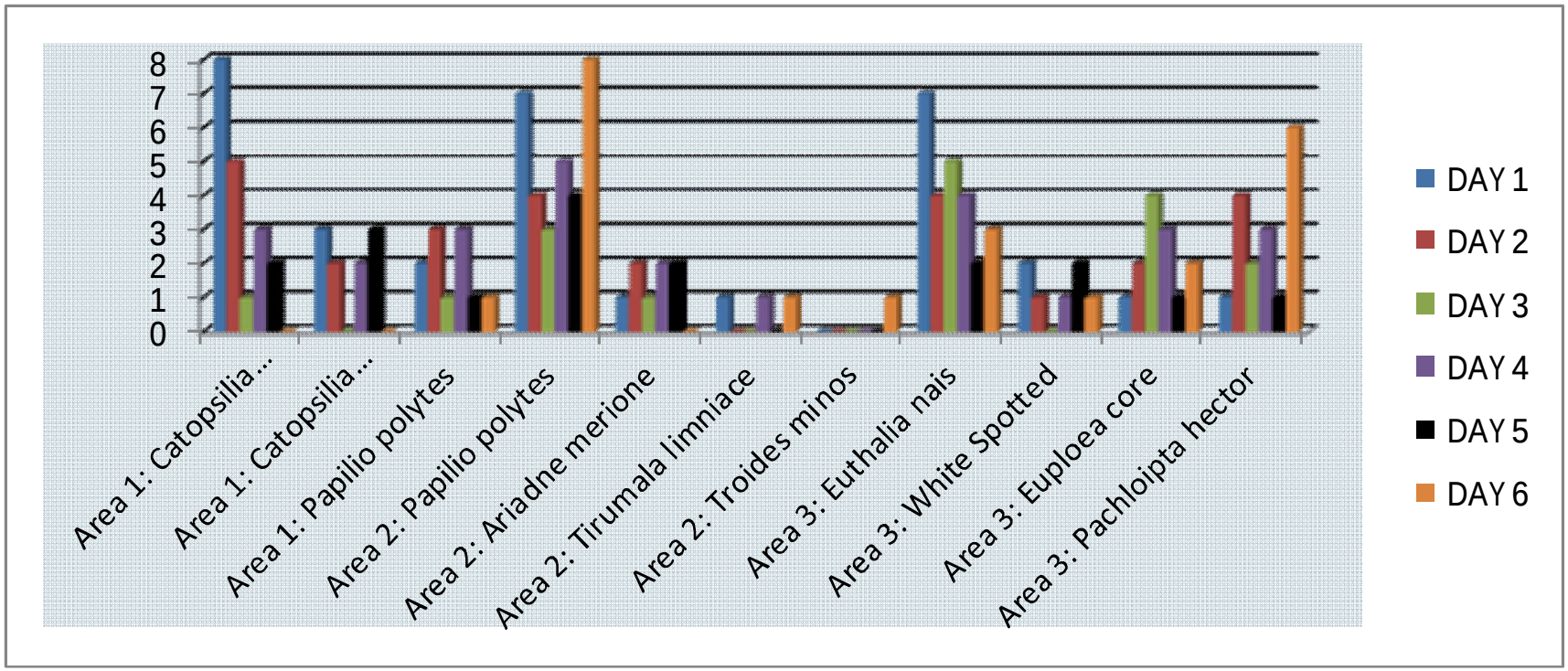
| Name of the species | | Total Count | | | | | |
|---|---|---|---|---|---|---|---|
| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
| Area 1 | *Catopsilia pomona* | 8 | 5 | 1 | 3 | 2 | 0 |
| | *Catopsilia pyranthe* | 3 | 2 | 0 | 2 | 3 | 0 |
| | *Papilio polytes* | 2 | 3 | 1 | 3 | 1 | 1 |
| Area 2 | *Papilio polytes* | 7 | 4 | 3 | 5 | 4 | 8 |
| | *Ariadne merione* | 1 | 2 | 1 | 2 | 2 | 0 |
| | *Tirumala limniace* | 1 | 0 | 0 | 1 | 0 | 1 |
| | *Troides minos* | 0 | 0 | 0 | 0 | 0 | 1 |
| Area 3 | *Euthalia nais* | 7 | 4 | 5 | 4 | 2 | 3 |
| | *White Spotted* | 2 | 1 | 0 | 1 | 2 | 1 |
| | *Euploea core* | 1 | 2 | 4 | 3 | 1 | 2 |
| | *Pachloipta hector* | 1 | 4 | 2 | 3 | 1 | 6 |

# KEY OBSERVATIONS

- ***Catopsilia pomona*** **(common emigrant) and the** ***Papilio polytes*** **(common Mormon) were seen in abundance. One of the rare species southern birdwing was also observed.**
- ***Catopsilia pomona*** **was recorded highest on the 1st day.**
- ***Papolio polytes*** **were seen on all the days with its count ranging from 1 to 3 in the first area and in area 2 it showed a count ranging from 3 to 8 in the days observed.**
- ***Papilio polytes*** **dominated area 2 by showing highest count as compared to the other species in the same area.**
- ***Ariadne merione and Tirumala limniace*** **had low counts**
- ***Troides minos*** **one of the rare and endangered species of butterfly that was observed only on day 6.**

- *Euthalia nais* dominated area 3 with its count ranging from 2 on day 5th to as high as 7 on day 1. The white spotted butterfly which could not be identified was in minority in area 3.
- *Euploea core* was observed on all.
- *Pachloipta hector* count was the second highest in area 3.
- *Papilio polytes* is the most dominant butterfly species observed followed by *Euthalia nais*.
- Least observed butterflies' species are *Tirumala limniace*, *Ariadne merione*, *Troideas minos* and the unidentified White spotted.
- *Euploea core*, *Catopsilia pomona*, *Catopsilia pyranthe* and *Pachloipta hector* were observed in moderate count ranging from 10 to 19.

**The following graph gives the total no. of butterflies observed i.e. 144 butterflies of which various species were observed in different no. are shown below:**




**The X-axis of the graph represents the species of butterflies observed and the area in which they were observed. The Y-axis represents the count of butterflies as recorded during the observation days. Different coloured bars represents the different days.**

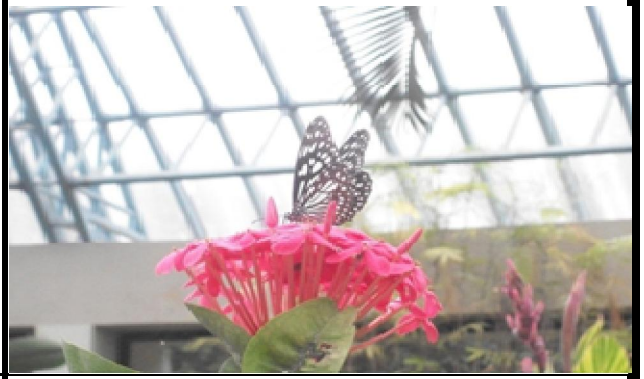
*Papilio polytes Linn (Common Mormon)*

*Euploea core cramer (Crow Butterfly)*

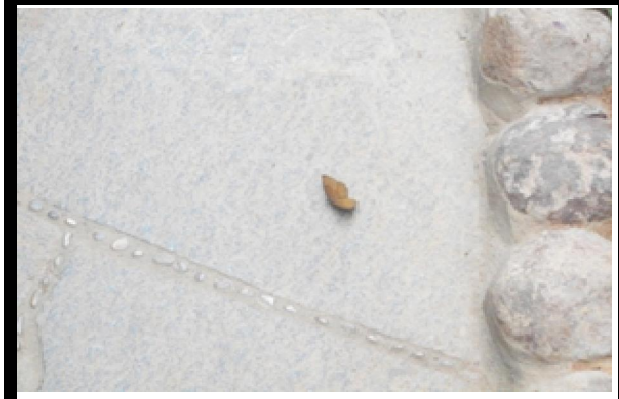
*Pieridae-Mottled Emigrants*

*Catopsilia Pomona Fab (Common Emigrant)*

*Baronet*

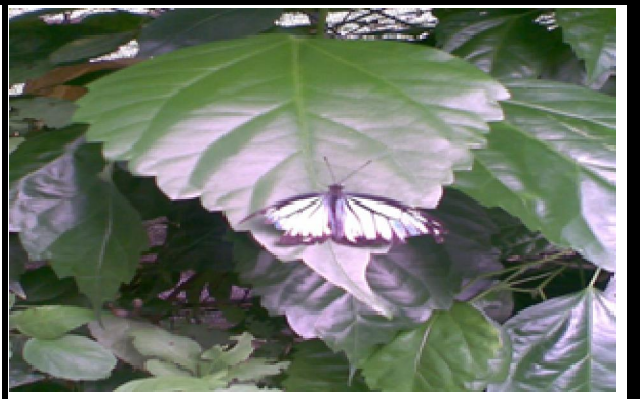


*Tiger Butterfly-Blue Tiger*



*Common Castor*

*Pachloipta hector Linn (Crimson Rose)*



*Southern Birdwing*

Unknown

Only one butterfly was not identified.

All the species were identified in the park itself at the interpretation centre in the park.

# CONCLUSION

- The Butterfly Park in Bannerghatta is a great natural habitat for the butterflies
- More care is needed for the protection of butterflies.
- Else national parks will not be able to protect them from becoming extinct
- Proper maintenance, periodic survey of the vegetation cover, predators and the prevailing butterfly species is important.
- Checking the impact of human activities is also necessary as these creatures are sensitive to environmental changes.
- As one can infer from the graph plotted , one needs to start putting effort in saving these beautiful creatures.