

# Bugs R All

Newsletter of the  
Invertebrate Conservation & Information Network of South Asia (ICINSA)

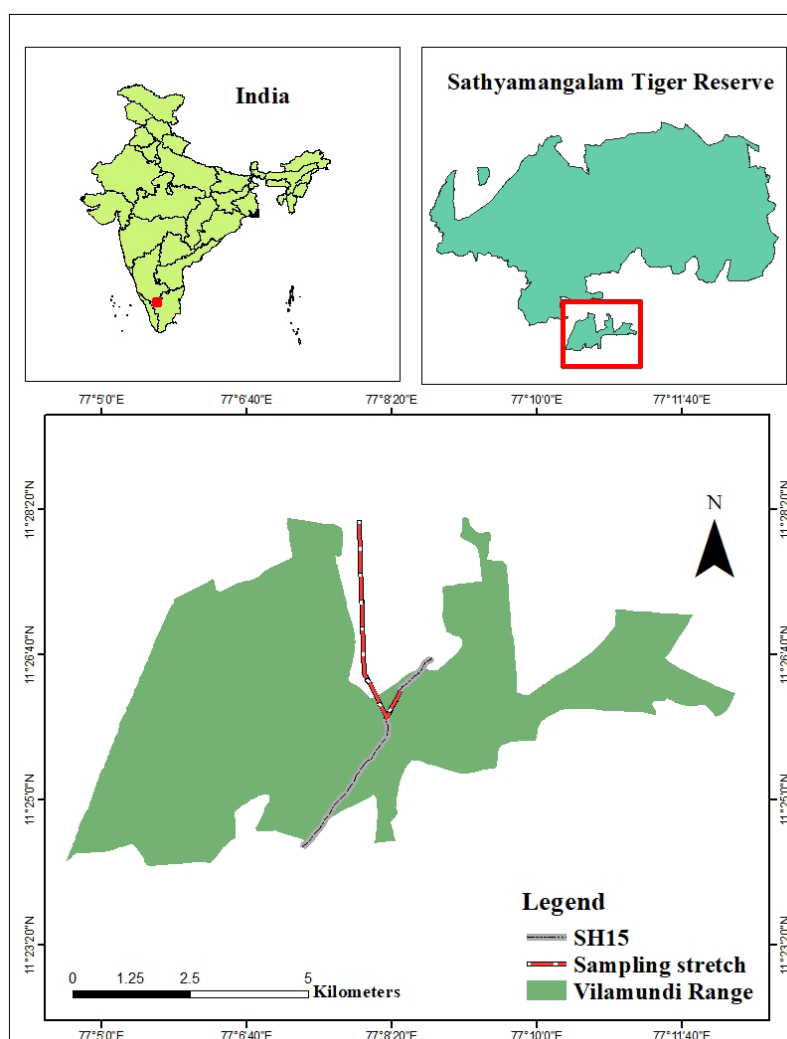
## Road mortality of butterflies in the Bhavanisagar -Mettupalayam Road, Sathyamangalam Tiger Reserve, Tamil Nadu, India

The most noticeable impacts of roads are perhaps associated with vehicle collisions. Roads are the line corridors that can cause high mortality risks where traffic volume is high (Samways 1994). Butterflies are one of the most common insect groups killed on roads by vehicles; however, the effects of road traffic on butterflies have been poorly studied in India. The impact of road mortality is expected to be high in insects than in other taxa (Rao & Girish 2007). This study documents the road mortality of butterflies at Sathyamangalam Tiger Reserve over a short period of time during the summer month.

The study area is part of the Vilamundi Forest Range of the Sathyamangalam Tiger Reserve (STR), Tamil Nadu. The STR is a connective junction of Eastern and Western Ghats, which is one of the

largest tiger reserves of Tamil Nadu ( $10.4875^{\circ}\text{N}$ – $11.71972^{\circ}\text{N}$  &  $76.84611^{\circ}\text{E}$ – $77.45611^{\circ}\text{E}$ ) established in 2013 and which covers an area of 1,400 km<sup>2</sup>.

We selected a 5-km road stretch from Bhavanisagar to the Nalroad and a portion from SH 15 that runs from Erode to Gudalur, Tamil Nadu. The road

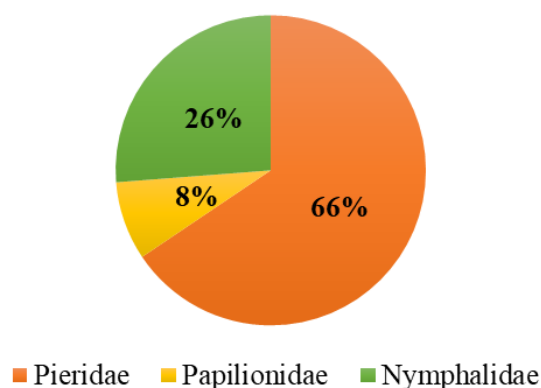


Vilamundi Forest Range of Sathyamangalam Tiger Reserve.

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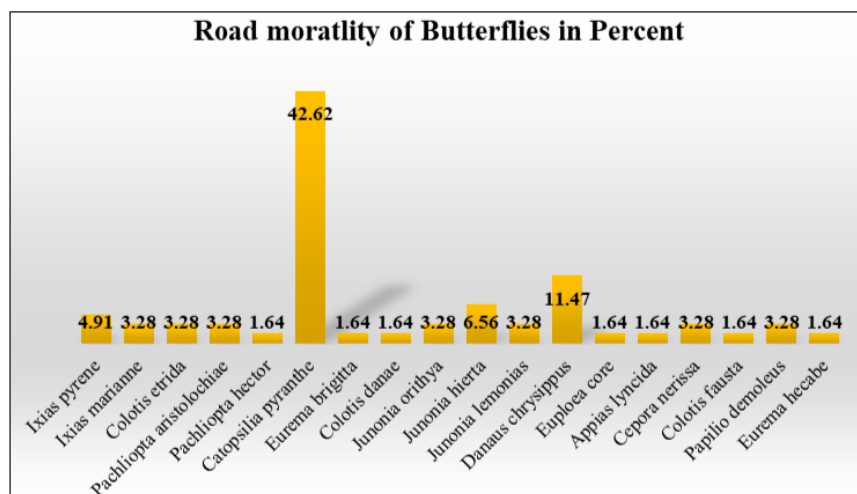
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**Family-wise proportion in Roadkills of Butterflies**



Proportion of family-wise roadkills in butterflies.

**Road mortality of Butterflies in Percent**



Proportion of road kills in butterflies.

passes through the tropical thorn forest patch of the STR.

Field observation was made on six days in the month of June 2018. The survey was conducted between 0830 h and 1130 h. A checklist was prepared based on the study of road-killed butterflies in

Bhavanisagar to Nalroad.

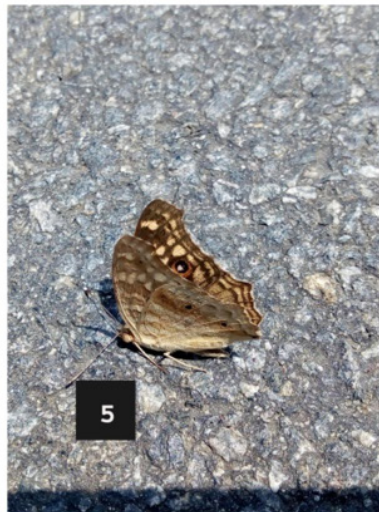
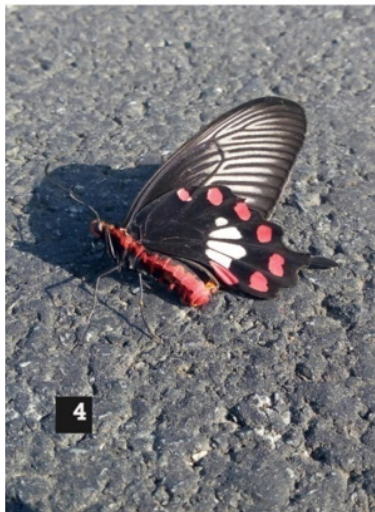
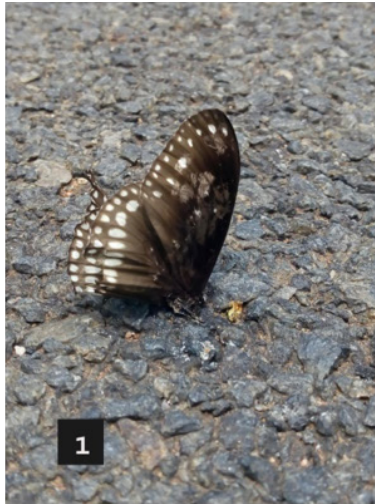
The butterfly number was quantified through the roadside walk, and the return walk was on the opposite side of the first walk. Road kills were photographed from the spot and identified with the help of a field guide (Kasambe 2018).

We encountered roadkills of 61 individuals in six days of June 2018, which consisted of 18 species, 11 genera, and three families, respectively (Table 1). Among the roadkills, 66% belonged to the Pieridae family, followed by Nymphalidae 26%, and Papilionidae 8%. Mottled Emigrant *Catopsilia pyranthe* was the most affected species by road kills 42.62%, followed by Plain Tiger *Danaus chrysippus* 11.47%.

Mainly, road kill studies focus on bigger animals in India, such as mammals, reptiles, birds, and amphibians. Similar road kill studies on butterflies have been conducted in the Indian landscape on a small scale. Rao & Girish (2007) have observed road kill of 1,269 individuals from the Bandipur National Park; among them, 35% were butterflies. Similarly, the Wayanad District of Kerala was reported to have lost nearly 206 butterflies due to vehicle collisions over a day; all were under two families and the highest number of individuals road killed were the

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A view of butterfly road kills at the Vilamundi Range of Sathyamangalam Tiger Reserve: 1—Common Crow | 2—Chocolate Albatross | 3—Mottled Emigrant | 4—Common Rose | 5—Lemon Pansy | 6—Common Grass Yellow | 7—Large Salmon Arab | 8—Small Grass Yellow | 9—Yellow Pansy © Vishnu, C.S.

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A view of butterfly road kills at the Vilamundi Range of Sathyamangalam Tiger Reserve: 10—Crimson Tip | 11—Blue Pansy | 12—Plain Tiger | 13—White Orange-tip | 14—Crimson Rose | 15—Yellow Orange-tip | 16—Common Gull | 17—Lime Butterfly. © Vishnu, C.S.

Table1. Checklist of the road killed butterflies.

|    | Common Name         | Family       | Binomial Name                   | Count |
|----|---------------------|--------------|---------------------------------|-------|
| 1  | Yellow Orange-tip   | Pieridae     | <i>Ixias pyrene</i>             | 3     |
| 2  | White Orange-tip    | Pieridae     | <i>Ixias marianne</i>           | 2     |
| 3  | Small Orange-tip    | Pieridae     | <i>Colotis etrida</i>           | 2     |
| 4  | Crimson Tip         | Pieridae     | <i>Colotis danae</i>            | 1     |
| 5  | Large Salmon Arab   | Pieridae     | <i>Colotis fausta</i>           | 1     |
| 6  | Common Grass Yellow | Pieridae     | <i>Eurema hecabe</i>            | 1     |
| 7  | Small Grass Yellow  | Pieridae     | <i>Eurema brigitta</i>          | 1     |
| 8  | Mottled Emigrant    | Pieridae     | <i>Catopsilia pyranthe</i>      | 26    |
| 9  | Chocolate Albatross | Pieridae     | <i>Appias lyncida</i>           | 1     |
| 10 | Common Gull         | Pieridae     | <i>Cepora nerissa</i>           | 2     |
| 11 | Blue Pansy          | Nymphalidae  | <i>Junonia orithya</i>          | 2     |
| 12 | Yellow Pansy        | Nymphalidae  | <i>Junonia hierta</i>           | 4     |
| 13 | Lemon Pansy         | Nymphalidae  | <i>Junonia lemonias</i>         | 2     |
| 14 | Plain Tiger         | Nymphalidae  | <i>Danaus chrysippus</i>        | 7     |
| 15 | Common Crow         | Nymphalidae  | <i>Euploea core</i>             | 1     |
| 16 | Common Rose         | Papilionidae | <i>Pachliopta aristolochiae</i> | 2     |
| 17 | Crimson Rose        | Papilionidae | <i>Pachliopta hector</i>        | 1     |
| 18 | Lime Butterfly      | Papilionidae | <i>Papilio demoleus</i>         | 2     |

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Blue Tigers *Tirumala septentrionis* (Roshnath & Cyriac 2013). Also, Sony & Arun (2015) have documented 135 butterfly road kills belonging to three families, nine genera, and 12 species in the Anaikkatty Hills of Tamil Nadu; among them, the proportion of nymphalid butterflies was high at 70%.

However, a total of about 61 individuals' deaths during a shorter span is a call for proper investigation in this region. Insects are essential to the ecosystem as pollinators; still, very few conservation efforts have been made to protect them. However, we suggest that butterfly populations must be protected from road deaths through meaningful conservation measures in the future.

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