

### CHAPTER 4

#### DIVERSITY OF ENTOMOLOGY FAUNA

##### 4.1 Introduction

Insects are the largest and the most diverse class among six kingdoms of living world in which global insect species is 0.9 millions of 1.4 million living species. Insects are ecologically fundamental species of ecosystem of any environments. Insects provide the food to all other various kinds of animals. They have Ecological functions of insects such as pollination to nocturnal and diurnal endosperms, seed dispersal, etc, drive the energy pathways to the living organisms of sustaining ecosystem. Some insects are scavenger species, cleaning the environment, by eating and destroying the debris and decaying materials and break down to tiny particles which enrich soil fertility for the plants. The highest population size and immense species richness of insect take part in an important role. Insects are best food supplying animals in which all adult frogs and toad species, most species of snakes and lizards, 65 % of birds and 650 bat species are insect eating vertebrates. Hence, the insects are fundamental food source for the higher animals. Insects are particularly suited for use in environment impact assessment because of their high species diversity and role in the functioning of ecosystem.

Some insects are indicator species for the condition of the ecosystem. Although more than 30 insect orders, to assess the nature's health, the following groups were conducted the entomological survey:

1. Lepidoptera (Butterfly species)
2. Odonata (Dragonfly and damselfly species)
3. Coleoptera (Beetle species)
4. Dermaptera (Earwigs)

## Annex D-5: Ecological Survey Report: Insects

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### 4.2 Species composition of insect species

A total of 15 insect species including four orders, Lepidoptera (six butterfly species), Odonata (six dragonfly and damselfly species), Coleoptera (2 beetle species), Dermaptera (one earwig species), were collected. Insects were collected from six survey sites (Table 4.1).

### 4.3 Different study sites and observed frequency of insects

Depending on the study sites and insect fauna, the site 2 is highest in species (9 species) number and the site 5 is lowest in species (2 species). Maximum population was investigated in site 2 (20 species), while the least number of insects was observed in site 5 (2 individuals).

Among six survey sites, number of study sites observed for each species was as observed frequency. Hence, the range of observed frequency was from 1 to 6. Two species *Neurothemis fulvia* and *Rhodothemis rufa* under order Odonata (4 times) were recorded as the highest observed frequency (Table 4.2).

### 4.4 Discussion of habitat types and condition

Insect diversity was very low in this project area that are due to the absence of habitats form the insect species. The insect species collected were only from the water sources and near villages, no trees or plants were found to be live and food sources.

### 4.5 Mitigation measures and management plan

## Annex D-5: Ecological Survey Report: Insects

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**Table 4.1 Species composition of insects from TLW Project Area**

Order	Family	Species
Lepidoptera	Pieridae	1. <i>Captopsilia pomona Pomona</i>
	Danaiidae	2. <i>Danaus genutia genutia</i>
		3. <i>Euploea modesta modesta</i>
	Nymphalidae	4. <i>Junonia atlites</i>
		5. <i>Neptis jumbah jumbah</i>
	Hesperiidae	6. <i>Parnara naso blade</i>
Odonata	Libellulidae	7. <i>Neurothemis tullia tullia</i>
		8. <i>Neurothemis inquirendae</i>
		9. <i>Neurothemis fulvia</i>
		10. <i>Rhodothemis rufa</i>
		11. <i>Trithemis kirbyi kirbyi</i>
	Coenagrionidae	12. <i>Coenagrion</i> sp.
Coleoptera	Chrosomelidae	13. <i>Agetocera filicorhis</i>
		14. <i>Aulocophora foveicollis</i>
Dermaptera	Forficulidae	15. <i>Allodablia scabruscula</i>

## Annex D-5: Ecological Survey Report: Insects

**Table 4.2 Different study sites and observed frequency of insects from TLW  
Project Area**

Species	Study sites						Total	Freq.
	I	II	III	IV	V	VI		
1. <i>Captopsilia pomona pomona</i>			1				1	1
2. <i>Danaus genutia genutia</i>	1			1			2	2
3. <i>Euploea modesta modesta</i>						1	1	1
4. <i>Junonia atlites</i>	1	1					2	2
5. <i>Neptis jumbah jumbah</i>	1				1	1	3	3
6. <i>Parnara naso blada</i>		1					1	1
7. <i>Neurothemis tullia tullia</i>		5		1		2	8	3
8. <i>Neurothemis inquirendae</i>		1			1		2	2
9. <i>Neurothemis fulvia</i>		2	1	2		1	6	4
10. <i>Rhodothemis rufa</i>	1		1	1		1	4	4
11. <i>Trithemis kirbyi kirbyi</i>	1	3					4	2
12. <i>Coenagrion</i> sp.		1					1	1
13. <i>Agetocera filicorhis</i>		5					5	1
14. <i>Aulocophora foveicollis</i>		1					1	1
15. <i>Allodablia scabriscula</i>						1	1	1
<b>Total number of species</b>	<b>5</b>	<b>9</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>6</b>	<b>15</b>	
<b>Total number of individuals</b>	<b>5</b>	<b>20</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>7</b>	<b>42</b>	

I. Alunswut village and its environs, II. Thilawa old village and its environs,  
 III. Bay Pauk stream and its environs, IV. Shwe Pyauk stream and its environs,  
 V. Phalann stream and its environs, VI. Hmhaw Wun stream and its environs

### 4.6 References

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## Annex D-5: Ecological Survey Report: Insects

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## Annex D-5: Ecological Survey Report: Insects

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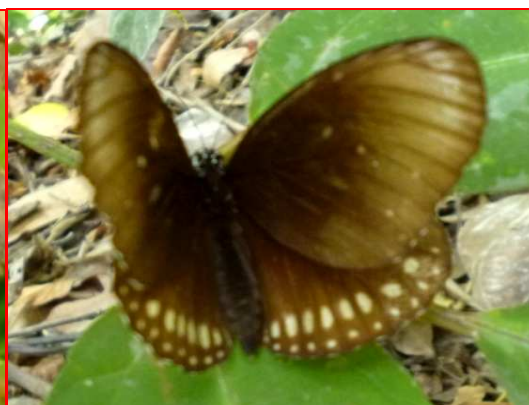
A. *Captosilia pomona pomona*



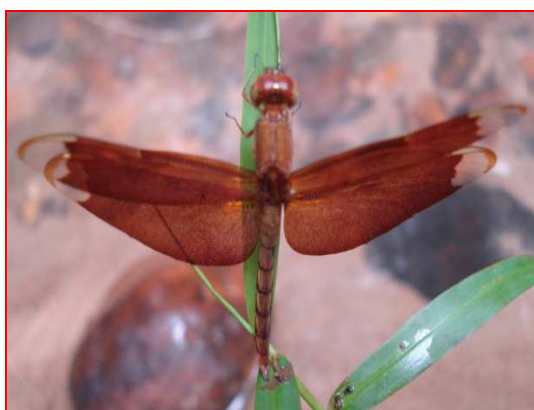
B. *Neptis jumbah jumbah*



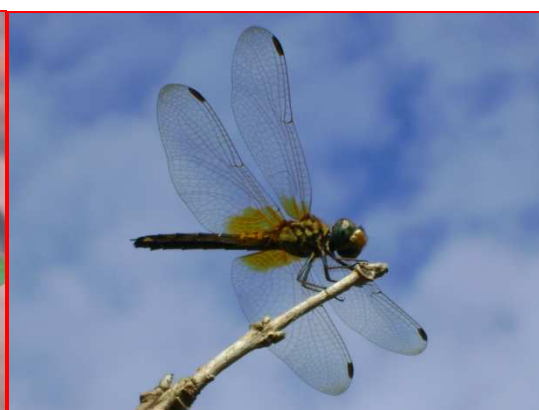
C. *Junonia altites*



D. *Euploea modesta modesta*



E. *Neurothemis inquirendae*



F. *Rhodothemis rufa*

**Plate 1. Insectofauna collected from the area of Thilawa Project**





A. *Trithemis kirbyi kirbyi*



B. *Neurothemis tullia tullia*



C. *Coenagrion* sp.



D. *Agetocera filicorhis*



E. *Aulocophora foveicollis*



F. *Allodablia scabriscula*

**Plate 2. Insectofauna collected from the area of Thilawa Project**