



Royal Forest Department



**International Tropical
Timber Organization**

**Management of the Emerald Triangle Protected Forest Complex to Promote
Cooperation for Transboundary Biodiversity Conservation between
Thailand, Cambodia and Laos (Phase III)**

PROJECT: PD 289/04 Rev. 1 (F)



Ecology Consultant Technical Report

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Royal Forest Department
&
International Tropical Timber Organization

**“Management of the Emerald Triangle Protected
Forest Complex to Promote Cooperation for
Transboundary Biodiversity Conservation between
Thailand, Cambodia and Laos (Phase II)”**

PROJECT: PD 289/04 Rev. 1 (F)

Host Government:	Thailand
Executing Agency:	Royal Forest Department
Project Coordinator:	Mr. Sunan Arunnopparat
Starting Date:	1 March 2008
Project Duration:	18 Months



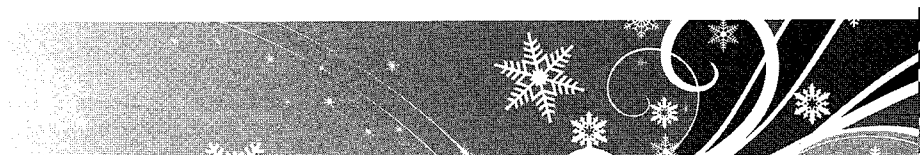
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(ITTO Project PD 289/04 Rev.1(F))

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2. Objective

To investigate species lists of edible insects and insect pollinators in Pha Taem National Park, Kaeng Tana National Park, Phu Jong-Na Yoi National Park, Yod Dom Wildlife Sanctuary, and Bun Thrik-Yod Mon Proposed Wildlife Sanctuary.

3. Methods and Identification

3.1 Data Procedure

The species lists of insects in terms of edible and pollinators were collected in 2 ways; primary data (direct survey) and secondary data collection.

Primary data collection, the survey was carried out in dry evergreen forest (DEF), dry dipterocarp forest (DDF), and mixed deciduous forest (MDF) within 5 sites, Pha Taem National Park, Kaeng Tana National Park, Phu Jong-Na Yoi National Park, Yot Dom Wildlife Sanctuary, and Bun Thrik – Yot Mon Proposed Wildlife Sanctuary, respectively during dry season. Insect collection conducted in both day (direct survey) and night time (light trap).

Secondary data collection, journals, reports, and books were investigated.

3.2 Identification and Analysis

All collected specimens from the fields were mounted at Department of Forest Biology, Faculty of Forestry, Kasetsart University. They were consequently identified by using many references and comparing with insect collection specimens by following order, family, genera, and species levels, respectively. All insects from each site were classified into 2 groups, being insect pollinators and edible insects.

4. Results

4.1 General Insects

A total of 187 species belongs to 130 genera, 45 families, and 9 orders were presented within the project areas (Table 1). Due to the project areas contain similar forest types with many deciduous forests, so that most insect species were found to be common and similar such as *Patanga succincta* (F. Acrididae; O. Orthoptera), *Gryllotalpa africana* (F. Gryllotalpidae; O. Orthoptera), *Orthetrum sabina* (F. Libellulidae; O. Odonata), *Catopsilia pomona pomona* (F. Pieridae; O. Lepidoptera), *Papilio demoleus malayanus* (F. Papilionidae; O. Lepidoptera), etc. In addition, many species were found in forest and agricultural areas, including *Xylotrupes gideon* (F. Scarabaeidae; O. Coleoptera), *Vespa tropica* and *V. affinis* (F. Vespidae; O. Hymenoptera), *Chrysomya megacephala* (F. Calliphoridae; O. Diptera) etc. The most species were found in MDF (123 species, 130 genera, 40 families, 9 orders), followed by DDF (104, 95, 43, 9) and DEF (102, 68, 16, 6) respectively. Many species were presented the pest status (Fig. 1) such as *Xyleutes leuconotus* and *Zeuzera coffeae* (F. Cossidae; O. Lepidoptera), *Aristobia horridula* and *Batocera rubra* (F. Cerambycidae; O. Coleoptera), *Oryctes rhinoceros* (F. Scarabaeidae; O. Coleoptera), *Hypomeces squamosus* (F. Curculionidae; O. Coleoptera) etc. However, these areas were rather low in numbers of species because the collection were made during the dry period while most insects will be commonly found in the wet season.

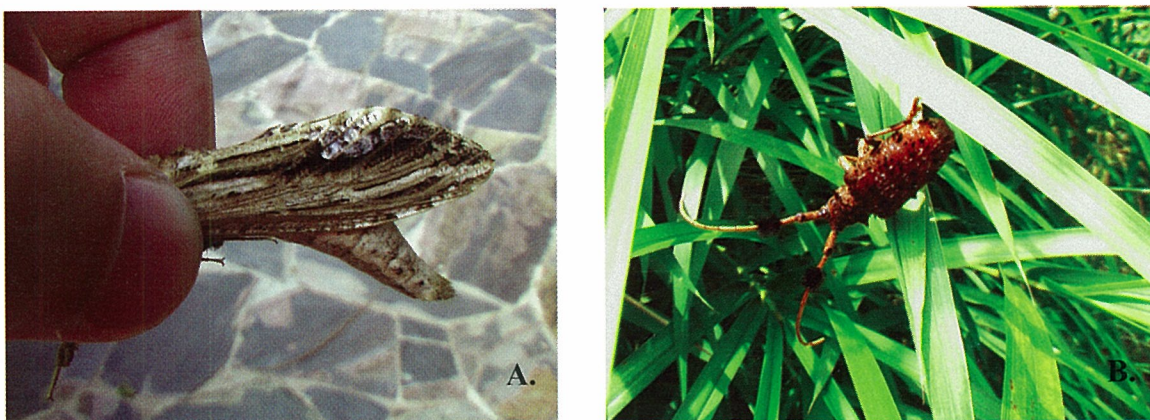


Figure 1 Some insect pests in project areas.

A. *Xyleutes ceramicus*

B. *Aristobia horridula*

Table 1 List of insects at project areas

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
1		<i>Sinoxylon</i> sp.	Bostrychidae	Coleoptera	1	1	0	✓	Direct
2	Scarab beetle	<i>Xylotrupes gideon</i>	Scarabaeidae	Coleoptera	0	1	0	✓	Direct
3		<i>Prosopocoilus giraffa</i>	Lucanidae	Coleoptera	0	0	1		Indirect
4	Oil beetle	<i>Mylabris phalerata</i>	Meloidae	Coleoptera	1	1	0	✓	Direct
5	Long-horned beetle	<i>Aristobia approximata</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
6		<i>Aristobia horridula</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
7	Long-horned beetle	<i>Celosterna pollinosa sulphurea</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
8	Long-horned beetle	<i>Xylorhiza adusta</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
9	Long-horned beetle	<i>Dorystenes granulosa</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
10	Long-horned beetle	<i>Dorystenes walkeri</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
11		<i>Batocera rubra</i>	Cerambycidae	Coleoptera	1	1	0	✓	Direct
12	Metallic beetle	<i>Sternocera ruficornis</i>	Buprestidae	Coleoptera	1	0	0	✓	Direct
13		<i>Hypomeces squamosus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
14		<i>Rhynchophorus furrugineus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
15		<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	1	1	0	✓	Direct
16		<i>Hydrous cavistanum</i>	Hydrophilidae	Coleoptera	1	1	0		Direct
17	Scarab beetle	<i>Copris nevinsoni</i>	Scarabaeidae	Coleoptera	1	1	0	✓	Direct
18	Scarab beetle	<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
19	Scarab beetle	<i>Heliocopris bucephalus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
20	Scarab beetle	<i>Heliocopris dominus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
21	Scarab beetle	<i>Holotrichia</i> sp.	Scarabaeidae	Coleoptera	1	1	0		Direct
22	Scarab beetle	<i>Anomala cupriper</i>	Scarabaeidae	Coleoptera	1	1	0	✓	Direct
23	Scarab beetle	<i>Anomala</i> sp.	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
24	Scarab beetle	<i>Adoretus compressus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
25	Scarab beetle	<i>Oryctes rhinoceros</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
26	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0		Direct
27	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0		Direct

Table 1 List of insects at project areas (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
28	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1		Direct
29	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0		Direct
30	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0		Direct
31		<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	1	1	0		Direct
32		<i>Laccotrephes ruber</i>	Nepidae	Hemiptera	1	1	0		Direct
33		<i>Tesseratoma javanica</i>	Pentatomidae	Hemiptera	1	1	0	✓	Direct
34		<i>Meimuna</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
35		<i>Pompania</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
36		<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	1	1	0	✓	Direct
37		<i>Anisops</i> sp.	Notonectidae	Hemiptera	1	1	0		Direct
38	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1		Direct
39	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0		Direct
40	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0		Direct
41	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1		Direct
42	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1		Direct
43	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0		Direct
44		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0		Direct
45		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0		Direct
46		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0		Direct
47	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1		Direct
48		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0		Direct
49		<i>Macrotermes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
50		<i>Termes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
51		<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	✓	Direct
52		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	✓	Direct
53		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	✓	Direct
54	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct

Table 1 List of insects at project areas (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
55	The Double-branded Blue	<i>Euploea sylvester</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
56	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
57	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
58	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
59	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
60		<i>Buzura sp.</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
61		<i>Buzura sp.</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
62		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
63	The White Imperial	<i>Neomyrina nivea</i>	Hesperiidae	Lepidoptera	0	1	1	✓	Direct
64	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	✓	Direct
65	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
66	The Common Snow Flat	<i>Tagiades japeus</i>	Hesperiidae	Lepidoptera	1	1	1	✓	Direct
67	The Brown Awl	<i>Badamia exclamationis</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
68	The Common Imperial	<i>Cheritra freja freja</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
69	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
70	The Common Cerulean	<i>Jamides celeno</i>	Lycanidae	Lepidoptera	0	1	1	✓	Indirect
71	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
72	The Club Silverline	<i>Spindasis syama</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
73	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
74	The Common Yamfly	<i>Loxura atymnus</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
75	The Common Pierrot	<i>Castalius rosomon rosomon</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
76	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	✓	Direct
77	The Fluffy Tit	<i>Zeltus amasa</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
78	The Common Imperial	<i>Cheritra freja</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
79		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	✓	Direct
80		<i>Tarsolipsis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	✓	Direct
81	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct

Table 1 List of insects at project areas (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
82	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
83	The Leopard Lacewing	<i>Cethosia cyane evanthes</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
84	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
85	The Common Plain Sailor	<i>Neptis hylas kamarurpa</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
86	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
87	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Indirect
88	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
89	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
90	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
91	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
92	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
93	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	✓	Direct
94	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
95	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
96	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
97	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
98	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
99	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
100	The Grey Pansy	<i>Junonia atlites atlites</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
101	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
102	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
103	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
104	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Indirect
105	The Common Earl	<i>Tanaecia iulii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
106	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
107	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
108	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct

Table 1 List of insects at project areas (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
109	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
110	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
111	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
112	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
113	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
114	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
115	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
116	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
117	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
118	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
119	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
120	The Common Mime	<i>Chilasa clytia clytia</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
121	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
122	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	✓	Direct
123	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
124	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
125	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
126	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
127	The Chain Swordtail	<i>Graphium aristus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
128	The Spot Swordtail	<i>Graphium nomius swinhoi</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
129	The Common Rose	<i>Pachioptera aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
130	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
131	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
132	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	✓	Indirect
133	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
134	The Red Helen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
135	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct

Table 1 List of insects at project areas (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
136	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
137	The Psyche	<i>Leptostia nina nina</i>	Pieridae	Lepidoptera	1	1	1	✓	Indirect
138	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
139	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
140	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
141	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
142	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	✓	Indirect
143	The Painted Jezebel	<i>Delias hypparete</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
144	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	✓	Direct
145	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
146	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
147	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
148	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
149	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
150		<i>Thalasodes falsaria</i>	Pyralidae	Lepidoptera	1	1	0	✓	Direct
151		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	✓	Direct
152	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	✓	Indirect
153	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	✓	Direct
154	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	✓	Direct
155	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	✓	Indirect
156		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
157		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
158		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
159		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
160		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
161		<i>Pergesa acteus</i>	Sphingidae	Lepidoptera	1	1	1	✓	Direct
162		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct

Table 1 List of insects at project areas (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
163		<i>Psilogramma menephron menephron</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
164		<i>Marumba saishuana saishuana</i>	Sphingidae	Lepidoptera	1	0	0	✓	Direct
165		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
166		<i>Lyssa zampa</i>	Uraniidae	Lepidoptera	0	1	0	✓	Indirect
167	Mantid	<i>Hierdula</i> sp.	Mantidae	Mantodea	1	1	0		Direct
168	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
169	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	1		Direct
170	Dragonfly	<i>Crocothemis servilia</i>	Libellulidae	Odonata	1	0	0		Direct
171	Dragonfly	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	1	1	0		Direct
172	Dragonfly	<i>Orthetrum sabina</i>	Libellulidae	Odonata	1	1	0		Direct
173	Dragonfly	<i>Orthetrum triangulare</i>	Libellulidae	Odonata	1	1	0		Direct
174	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
175	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	0		Direct
176		<i>Anax guttatus</i>	Aeshnidae	Odonata	1	1	0		Direct
177	Mole Cricket	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	1	1	0		Direct
178	Cricket	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	1	1	0		Direct
179	Cricket	<i>Acheta testacea</i>	Gryllidae	Orthoptera	1	1	0		Direct
180	Cricket	<i>Acheta confirmata</i>	Gryllidae	Orthoptera	1	1	0		Direct
181	Cricket	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	1	1	0		Direct
182	Long-horned grasshopper	<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	1	1	0		Direct
183	Long-horned grasshopper	<i>Euconocephalus</i> sp.	Tettigoniidae	Orthoptera	1	1	0		Direct
184	Locust	<i>Patanga succincta</i>	Acrididae	Orthoptera	1	1	0		Direct
185	Locust	<i>Acrida willemsei</i>	Acrididae	Orthoptera	1	1	0		Direct
186	Locust	<i>Chondracris rosea</i> brunner	Acrididae	Orthoptera	1	1	0		Direct
187	Locust	<i>Ducetia japonica</i>	Acrididae	Orthoptera	1	1	0		Direct

The insects were collected in each area as described below;

1.1 Pha Taem National Park

This area were found to be the highest numbers of species which 174 species belongs to 124 genera, 42 families and 9 orders were collected (Table 2). Most insects were found in MDF (128 species and 101 genera), followed by DDF (104 species and 91 genera) and DEF (102 species and 62 genera) respectively.

Interesting species in this area was the metallic beetle (*Sternocera ruficornis*) because it was one species of all insects which is very beautiful in color. It lives in dry dipterocarp forest. This area was the area which found to be high abundance in Thailand for this species. Generally it uses to make a beautiful products and souvenirs (Fig. 2).



Figure 2 Metallic beetle and products or souvenirs

1.2 Kaeng Tana National Park

This area found in the lowest numbers of species which 159 species belongs to 114 genera, 40 families and 9 orders that were collected (Table 3). The most insects were found in MDF (117 species and 92 genera), followed by DDF (96 species and 81 genera) and DEF (91 species and 59 genera) respectively. Although it was small area but insects were similar in species with another areas. The common insect species belongs to O. Lepidoptera such as *Euploea core godartii* (F. Danaidae), *Neptis hylas kamarurpa* (F. Nymphalidae), *Junonia atlites atlites* (F. Nymphalidae), *Pachiopta aristolochiae goniopiltis* (F. Papilionidae), etc.

No the interesting species was found in this area. The insects found in this area were very common species but it varied in numbers of species.

1.3 Phu Jong – Na Yoi National Park

This area found in the second highest numbers of species. 167 species belongs to 121 genera, 44 families and 9 orders that were collected (Table 4). Most insects were found in MDF (122 species and 95 genera), followed by DDF (101 species and 88 genera) and DEF (94 species and 64 genera) respectively.

Interesting insect was butterflies. There found high abundance in some areas, especially around waterfall such as *Catopsilia pomona pomona* (F. Pieridae), *Graphium sarpedon* (F. Papilionidae), *Euploea sylvestre* (F. Danaidae), etc.

1.4 Yod Dom Wildlife Sanctuary

This area found in the third highest numbers of species which 164 species belongs to 118 genera, 41 families and 9 orders that were collected (Table 5). Most insects were found in MDF (120 species and 94 genera), followed by DDF (98 species and 83 genera) and DEF (92 species and 59 genera) respectively.

No interesting species was presented in this area.

1.5 Bun Thrik – Yod Mon proposed Wildlife Sanctuary

This area found in the forth numbers of highest species which 162 species belongs to 115 genera, 39 families and 9 orders that were collected (Table 6). Most insects were found in MDF (116 species and 91 genera), followed by DDF (97 species and 83 genera) and DEF (93 species and 61 genera) respectively.

The interesting species was not seen in this area.

Table 2 List of insects at Pha Taem National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
1	Bark beetle	<i>Sinoxylon</i> sp.	Bostrychidae	Coleoptera	1	1	0	✓	Direct
2	Scarab beetle	<i>Xylotrupes gideon</i>	Scarabaeidae	Coleoptera	0	1	0	✓	Direct
3		<i>Prosopocoilus giraffa</i>	Lucanidae	Coleoptera	0	0	1		Indirect
4	Oil beetle	<i>Mylabris phalerata</i>	Meloidae	Coleoptera	1	1	0	✓	Direct
5	Long-horned beetle	<i>Aristobia horridula</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
6	Long-horned beetle	<i>Celosterna pollinosa sulphurea</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
7	Long-horned beetle	<i>Xylorhiza adusta</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
8	Long-horned beetle	<i>Dorystenes granulosa</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
9	Long-horned beetle	<i>Dorystenes walkeri</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
10	Metallic beetle	<i>Sternocera ruficornis</i>	Buprestidae	Coleoptera	1	0	0	✓	Direct
11	Weevil	<i>Hypomeces squamosus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
12	Weevil	<i>Rhynchophorus furrugineus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
13		<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	1	1	0	✓	Direct
14		<i>Hydrous cavistanum</i>	Hydrophilidae	Coleoptera	1	1	0		Direct
15	Scarab beetle	<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
16	Scarab beetle	<i>Heliocopris bucephalus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
17	Scarab beetle	<i>Heliocopris dominus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
18	Scarab beetle	<i>Holotrichia</i> sp.	Scarabaeidae	Coleoptera	1	1	0		Direct
19	Scarab beetle	<i>Anomala cuprifer</i>	Scarabaeidae	Coleoptera	1	1	0	✓	Direct
20	Scarab beetle	<i>Adoretus compressus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
21	Scarab beetle	<i>Oryctes rhinocerus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
22	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0		Direct
23	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0		Direct
24	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1		Direct
25	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0		Direct
26	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0		Direct
27	Giant water bug	<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	1	1	0		Direct

Table 2 List of insects at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
28		<i>Laccotrepes ruber</i>	Nepidae	Hemiptera	1	1	0		Direct
29		<i>Tesseratoma javanica</i>	Pentatomidae	Hemiptera	1	1	0	✓	Direct
30	Cicadas	<i>Meimuna</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
31	Cicadas	<i>Pompania</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
32	Cicadas	<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	1	1	0	✓	Direct
33		<i>Anisops</i> sp.	Notonectidae	Hemiptera	1	1	0		Direct
34	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1		Direct
35	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0		Direct
36	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1		Direct
37	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1		Direct
38	Carpenter bee	<i>Xylcopa</i> sp.	Apidae	Hymenoptera	1	0	0		Direct
39	Red ant	<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0		Direct
40	Tiger Wasp	<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0		Direct
41	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1		Direct
42	Tiger Wasp	<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0		Direct
43	Termite	<i>Macrotermes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
44	Termite	<i>Termes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
45	Carpenter moth	<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	✓	Direct
46	Carpenter moth	<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	✓	Direct
47	Carpenter moth	<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	✓	Direct
48	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
49	The Double-branded Blue	<i>Euploea sylvestris</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
50	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
51	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
52	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
53	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
54		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct

Table 2 List of insects at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
55		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
56	The White Imperial	<i>Neomyrina nivea</i>	Hesperiidae	Lepidoptera	0	1	1	✓	Direct
57	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	✓	Direct
58	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
59	The Common Snow Flat	<i>Tagiades jipetus</i>	Hesperiidae	Lepidoptera	1	1	1	✓	Direct
60	The Brown Owl	<i>Badamia exclamatoris</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
61	The Common Imperial	<i>Cheritra freja freja</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
62	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
63	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
64	The Club Silverline	<i>Spindasis syama</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
65	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
66	The Common Yamfly	<i>Loxura atymnus</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
67	The Common Pierrot	<i>Castalius rosomon rosomon</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
68	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	✓	Direct
69	The Fluffy Tit	<i>Zelus amasa</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
70	The Common Imperial	<i>Cheritra freja</i>	Noctuidae	Lepidoptera	1	1	0	✓	Direct
71		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	0	1	1	✓	Direct
72	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
73	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
74	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
75	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
76	The Common Plain Sailor	<i>Neptis hylas kamarurpa</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
77	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
78	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Indirect
79	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
80	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
81	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect

Table 2 List of insects at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
82	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
83	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
84	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	✓	Direct
85	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
86	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
87	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
88	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
89	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
90	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
91	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
92	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
93	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
94	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Indirect
95	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
96	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
97	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
98	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
99	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
100	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
101	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
102	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
103	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
104	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
105	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
106	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
107	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
108	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct

Table 2 List of insects at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
109	The Commander	<i>Modura procris</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
110	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
111	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	✓	Direct
112	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
113	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
114	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
115	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
116	The Chain Swordtail	<i>Graphium aristaeus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
117	The Spot Swordtail	<i>Graphium nomius swinhoi</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
118	The Common Rose	<i>Pachioptera aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
119	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
120	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
121	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	✓	Indirect
122	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
123	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
124	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
125	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
126	The Psyche	<i>Leptostia nina nina</i>	Pieridae	Lepidoptera	1	1	1	✓	Indirect
127	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
128	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
129	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
130	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
131	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	✓	Indirect
132	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
133	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	✓	Direct
134	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
135	The Chocolate Albatross	<i>Appias lycida</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct

Table 2 List of insects at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
136	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
137	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
138	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
139		<i>Actias</i> sp.	Saturniidae	Lepidoptera	1	0	0	✓	Direct
140	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	✓	Indirect
141	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	✓	Direct
142	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	✓	Direct
143	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	✓	Indirect
144		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
145		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
146		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
147		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
148		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
149		<i>Pergesa acteus</i>	Sphingidae	Lepidoptera	1	1	1	✓	Direct
150		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
151		<i>Psilogramma menephoron menephoron</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
152		<i>Marumba saishuiana saishuiana</i>	Sphingidae	Lepidoptera	1	0	0	✓	Direct
153		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
154		<i>Lyssa zampa</i>	Uranidae	Lepidoptera	0	1	0	✓	Indirect
155	Mantid	<i>Hierdula</i> sp.	Mantidae	Mantodea	1	1	0	✓	Direct
156	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	1	✓	Direct
157	Dragonfly	<i>Crocothemis servilia</i>	Libellulidae	Odonata	1	0	0	✓	Direct
158	Dragonfly	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	1	1	0	✓	Direct
159	Dragonfly	<i>Orthetrum sabina</i>	Libellulidae	Odonata	1	1	0	✓	Direct
160	Dragonfly	<i>Orthetrum triangulare</i>	Libellulidae	Odonata	1	1	0	✓	Direct
161	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0	✓	Direct
162	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	0	✓	Direct

Table 2 List of insects at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
163		<i>Anax guttatus</i>	Aeshnidae	Odonata	1	1	0		Direct
164	Mole Cricket	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	1	1	0	✓	Direct
165	Cricket	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
166	Cricket	<i>Acheta testacea</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
167	Cricket	<i>Acheta confirmata</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
168	Cricket	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
169		<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	1	1	0	✓	Direct
170		<i>Euconocephalus</i> sp.	Tettigoniidae	Orthoptera	1	1	0	✓	Direct
171	Locust	<i>Patanga succincta</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
172	Locust	<i>Acrida willmersei</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
173	Locust	<i>Chondracris roseaapbrunner</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
174	Locust	<i>Ducetia japonica</i>	Acrididae	Orthoptera	1	1	0	✓	Direct

Table 3 List of insects at Kaeng Tana National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
1	Bark beetle	<i>Sinoxylon</i> sp.	Bostrychidae	Coleoptera	1	1	0	✓	Direct
2	Scarab beetle	<i>Xylotrupes gideon</i>	Scarabaeidae	Coleoptera	0	1	0	✓	Direct
3		<i>Prosopocoilus giraffa</i>	Lucanidae	Coleoptera	0	0	1		Indirect
4	Oil beetle	<i>Mylabris phalerata</i>	Meloidae	Coleoptera	1	1	0	✓	Direct
5	Long-horned beetle	<i>Aristobia approximata</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
6	Long-horned beetle	<i>Aristobia horridula</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
7	Long-horned beetle	<i>Celosterna pollinosa sulphurea</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
8	Long-horned beetle	<i>Dorystenes granulosa</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
9	Long-horned beetle	<i>Dorystenes walkeri</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
10	Long-horned beetle	<i>Batocera rubra</i>	Cerambycidae	Coleoptera	1	1	0	✓	Direct
11	Weevil	<i>Hypomeces squamosus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
12	Weevil	<i>Rhynchophorus furrugineus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
13		<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	1	1	0	✓	Direct
14		<i>Hydrous cavistanum</i>	Hydrophilidae	Coleoptera	1	1	0		Direct
15	Scarab beetle	<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
16	Scarab beetle	<i>Heliocopris bucephalus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
17	Scarab beetle	<i>Heliocopris dominus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
18	Scarab beetle	<i>Holotrichia</i> sp.	Scarabaeidae	Coleoptera	1	1	0		Direct
19	Scarab beetle	<i>Anomala</i> sp.	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
20	Scarab beetle	<i>Adoretus compressus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
21	Scarab beetle	<i>Oryctes rhinoceros</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
22	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0		Direct
23	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0		Direct
24	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0		Direct
25	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0		Direct
26		<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	1	1	0		Direct
27		<i>Laccotrephes ruber</i>	Nepidae	Hemiptera	1	1	0		Direct

Table 3 List of insects at Kaeng Tana National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
28		<i>Meimuna</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
29		<i>Pompania</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
30		<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	1	1	0	✓	Direct
31		<i>Anisops</i> sp.	Notonectidae	Hemiptera	1	1	0		Direct
32	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1		Direct
33	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0		Direct
34	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1		Direct
35	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1		Direct
36	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0		Direct
37		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0		Direct
38		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0		Direct
39		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0		Direct
40	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1		Direct
41		<i>Macrotermes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
42		<i>Termes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
43		<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	✓	Direct
44		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	✓	Direct
45	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
46	The Double-branded Blue	<i>Euploea sylvest</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
47	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
48	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
49	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
50		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct
51		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct
52		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
53	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	✓	Direct
54	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct

Table 3 List of insects at Kaeng Tana National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
55	The Common Snow Flat	<i>Tagiades jipetus</i>	Hesperiidae	Lepidoptera	1	1	1	✓	Direct
56	The Brown Awl	<i>Badamia exclamationis</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
57	The Common Tailed Judy	<i>Abisara neophron</i>	Lycaenidae	Lepidoptera	1	1	1	✓	Direct
58	The Common Cerulean	<i>Jamides celeno</i>	Lycaenidae	Lepidoptera	0	1	1	✓	Indirect
59	The Club Silverline	<i>Spindasis svama</i>	Lycaenidae	Lepidoptera	1	1	1	✓	Direct
60	The Angled Sunbeam	<i>Curetis acuta</i>	Lycaenidae	Lepidoptera	0	0	1	✓	Indirect
61	The Common Yamfly	<i>Loxura atymnus</i>	Lycaenidae	Lepidoptera	1	1	1	✓	Direct
62	The Common Pierrot	<i>Castalius rosimon rosimon</i>	Lycaenidae	Lepidoptera	1	1	1	✓	Direct
63	The Fluffy Tit	<i>Zeltus amasa</i>	Lycaenidae	Lepidoptera	1	1	0	✓	Direct
64	The Common Imperial	<i>Cheritra freja</i>	Lycaenidae	Lepidoptera	1	1	1	✓	Direct
65		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	✓	Direct
66	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
67	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
68	The Leopard Lacewing	<i>Cethosia cyane evanthes</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
69	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
70	The Common Plain Sailor	<i>Neptis hylas kamarurpa</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
71	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
72	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Indirect
73	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
74	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
75	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
76	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	✓	Direct
77	The White-edged blue Baron	<i>Euthalia phenius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
78	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
79	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
80	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
81	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct

Table 3 List of insects at Kaeng Tana National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
82	The Grey Pansy	<i>Junonia altilites altilites</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
83	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
84	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
85	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
86	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Indirect
87	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
88	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
89	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
90	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
91	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
92	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
93	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
94	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
95	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
96	The Great Assyrian	<i>Terinos alita</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
97	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
98	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
99	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
100	The Common Mime	<i>Chilasa clytia clytia</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
101	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
102	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	✓	Direct
103	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
104	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
105	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
106	The Chain Swordtail	<i>Graphium aristus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
107	The Common Rose	<i>Pachioptera aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
108	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct

Table 3 List of insects at Kaeng Tana National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
109	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	✓	Indirect
110	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
111	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
112	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
113	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
114	The Psyche	<i>Leptosia nina nina</i>	Pieridae	Lepidoptera	1	1	1	✓	Indirect
115	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
116	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
117	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
118	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	✓	Indirect
119	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
120	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	✓	Direct
121	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
122	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
123	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
124	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
125	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
126		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	✓	Direct
127	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	✓	Indirect
128	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	✓	Direct
129	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	✓	Direct
130	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	✓	Indirect
131		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
132		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
133		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
134		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
135		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct

Table 3 List of insects at Kaeng Tana National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
136		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
137		<i>Psilogramma menephron menephron</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
138		<i>Marumba saishuiana saishuiana</i>	Sphingidae	Lepidoptera	1	0	0	✓	Direct
139		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
140		<i>Lyssa zampa</i>	Uraniidae	Lepidoptera	0	1	0	✓	Indirect
141	Mantid	<i>Hierdula</i> sp.	Mantidae	Mantodea	1	1	0		Direct
142	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
143	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	1		Direct
144	Dragonfly	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	1	1	0		Direct
145	Dragonfly	<i>Orthetrum sabina</i>	Libellulidae	Odonata	1	1	0		Direct
146	Dragonfly	<i>Orthetrum triangulare</i>	Libellulidae	Odonata	1	1	0		Direct
147	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
148	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	0		Direct
149		<i>Anax guttatus</i>	Aeshnidae	Odonata	1	1	0		Direct
150	Mole Cricket	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	1	1	0		Direct
151	Cricket	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	1	1	0		Direct
152	Cricket	<i>Acheta testacea</i>	Gryllidae	Orthoptera	1	1	0		Direct
153	Cricket	<i>Acheta confirmata</i>	Gryllidae	Orthoptera	1	1	0		Direct
154	Cricket	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	1	1	0		Direct
155		<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	1	1	0		Direct
156		<i>Euconocephalus</i> sp.	Tettigoniidae	Orthoptera	1	1	0		Direct
157	Locust	<i>Patanga succincta</i>	Acrididae	Orthoptera	1	1	0		Direct
158	Locust	<i>Acrida willemsei</i>	Acrididae	Orthoptera	1	1	0		Direct
159	Locust	<i>Chondracris roseaapbrunner</i>	Acrididae	Orthoptera	1	1	0		Direct

Table 4 List of insects at Phu Jong – Na Yoi National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
1		<i>Sinoxylon</i> sp.	Bostrychidae	Coleoptera	1	1	0	✓	Direct
2	Scarab beetle	<i>Xylotrupes gideon</i>	Scarabaeidae	Coleoptera	0	1	0	✓	Direct
3		<i>Prosopocoilus giraffa</i>	Lucanidae	Coleoptera	0	0	1		Indirect
4	Oil beetle	<i>Mylabris phalerata</i>	Meloidae	Coleoptera	1	1	0	✓	Direct
5	Long-horned beetle	<i>Aristobia approximata</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
6	Long-horned beetle	<i>Celosterna pollinosa sulphurea</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
7	Long-horned beetle	<i>Xylorhiza adusta</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
8	Long-horned beetle	<i>Dorysphenes granulosa</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
9	Long-horned beetle	<i>Dorysphenes walkeri</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
10		<i>Batocera rubra</i>	Cerambycidae	Coleoptera	1	1	0	✓	Direct
11	Metallic beetle	<i>Sternocera ruficornis</i>	Buprestidae	Coleoptera	1	0	0	✓	Direct
12		<i>Hypomeces squamosus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
13		<i>Rhynchophorus furrugineus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
14		<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	1	1	0		Direct
15		<i>Hydrous cavistatum</i>	Hydrophilidae	Coleoptera	1	1	0		Direct
16		<i>Copris nevinsoni</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
17		<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
18		<i>Helicocopris bucephalus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
19		<i>Helicocopris dominus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
20		<i>Anomala cuprifer</i>	Scarabaeidae	Coleoptera	1	1	0	✓	Direct
21		<i>Anomala</i> sp.	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
22		<i>Adoretus compressus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
23	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0		Direct
24	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0		Direct
25	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1		Direct
26	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0		Direct
27		<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	1	1	0		Direct

Table 4 List of insects at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
28		<i>Laccotrepes ruber</i>	Nepidae	Hemiptera	1	1	0		Direct
29		<i>Tesseratoma javanica</i>	Pentatomidae	Hemiptera	1	1	0	✓	Direct
30		<i>Meimuna</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
31		<i>Pompania</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
32		<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	1	1	0	✓	Direct
33	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1		Direct
34	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0		Direct
35	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0		Direct
36	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1		Direct
37	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0		Direct
38		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0		Direct
39		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0		Direct
40		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0		Direct
41	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1		Direct
42		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0		Direct
43		<i>Macrotermes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
44		<i>Termes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
45		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	✓	Direct
46		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	✓	Direct
47	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
48	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
49	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
50	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
51	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
52		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct
53		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
54	The White Imperial	<i>Neomyrina nivea</i>	Hesperiidae	Lepidoptera	0	1	1	✓	Direct

Table 4 List of insects at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
55	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	✓	Direct
56	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
57	The Brown Awl	<i>Badamia exclamationis</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
58	The Common Imperial	<i>Cheritra freja freja</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
59	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
60	The Common Cerulean	<i>Jamides celeno</i>	Lycanidae	Lepidoptera	0	1	1	✓	Indirect
61	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
62	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
63	The Common Yamfly	<i>Loxura atymnus</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
64	The Common Pierrot	<i>Castalius rosomon rosomon</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
65	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	✓	Direct
66	The Common Imperial	<i>Cheritra freja</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
67		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	✓	Direct
68		<i>Tarsolepis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	✓	Direct
69	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
70	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
71	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
72	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
73	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
74	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Indirect
75	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
76	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
77	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
78	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	✓	Direct
79	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
80	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
81	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct

Table 4 List of insects at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
82	The common Map	<i>Cyrestis thyodamas thyodamus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
83	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
84	The Grey Pansy	<i>Junonia atlites atlites</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
85	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
86	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
87	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
88	The Common Earl	<i>Tanaecia juii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
89	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
90	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
91	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
92	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
93	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
94	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
95	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
96	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
97	The Blue Nawab	<i>Polynura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
98	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
99	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
100	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
101	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
102	The Common Mime	<i>Chilasa clytia clytia</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
103	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	✓	Direct
104	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
105	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
106	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
107	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
108	The Spot Swordtail	<i>Graphium nomius swinhoi</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct

Table 4 List of insects at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
109	The Common Rose	<i>Pachioptia aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
110	The Black and White Helen	<i>Papilio nepheles chaon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
111	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
112	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	✓	Indirect
113	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
114	The Red Helen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
115	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
116	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
117	The Psyche	<i>Leptostia nina nina</i>	Pieridae	Lepidoptera	1	1	1	✓	Indirect
118	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
119	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
120	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
121	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
122	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	✓	Indirect
123	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
124	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	✓	Direct
125	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
126	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
127	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
128	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
129	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
130		<i>Thalasodes falsaria</i>	Pyralidae	Lepidoptera	1	1	0	✓	Direct
131		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	✓	Direct
132	The Nigger	<i>Orsotriaena mechus</i>	Satyridae	Lepidoptera	0	1	1	✓	Indirect
133	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	✓	Direct
134	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	✓	Direct
135	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	✓	Indirect

Table 4 List of insects at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
136		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
137		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
138		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
139		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
140		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
141		<i>Pergesa acteus</i>	Sphingidae	Lepidoptera	1	1	1	✓	Direct
142		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
143		<i>Psilogramma menephoron menephoron</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
144		<i>Marumba saishuana saishuana</i>	Sphingidae	Lepidoptera	1	0	0	✓	Direct
145		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
146		<i>Lyssa zampa</i>	Uranidae	Lepidoptera	0	1	0	✓	Indirect
147	Mantid	<i>Hierdula sp.</i>	Mantodea	Mantodea	1	1	0		Direct
148	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
149	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	1		Direct
150	Dragonfly	<i>Crocothemis servilia</i>	Libellulidae	Odonata	1	0	0		Direct
151	Dragonfly	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	1	1	0		Direct
152	Dragonfly	<i>Orthetrum sabina</i>	Libellulidae	Odonata	1	1	0		Direct
153	Dragonfly	<i>Orthetrum triangulare</i>	Libellulidae	Odonata	1	1	0		Direct
154	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
155	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	0		Direct
156		<i>Anax guttatus</i>	Aeshnidae	Odonata	1	1	0		Direct
157	Mole Cricket	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	1	1	0	✓	Direct
158	Cricket	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
159	Cricket	<i>Acheta testacea</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
160	Cricket	<i>Acheta confirmata</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
161	Cricket	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
162		<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	1	1	0	✓	Direct

Table 4 List of insects at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
163		<i>Euconocephalus</i> sp.	Tettigoniidae	Orthoptera	1	1	0	✓	Direct
164	Locust	<i>Patanga succincta</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
165	Locust	<i>Acrida willemsei</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
166	Locust	<i>Chondracris roseaapbrunner</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
167	Locust	<i>Ducetia japonica</i>	Acrididae	Orthoptera	1	1	0	✓	Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
1		<i>Sinoxylon</i> sp.	Bostrychidae	Coleoptera	1	1	0	✓	Direct
2	Scarab beetle	<i>Xylotrupes gideon</i>	Scarabaeidae	Coleoptera	0	1	0	✓	Direct
3		<i>Prosopocoilus giraffa</i>	Lucanidae	Coleoptera	0	0	1		Indirect
4	Oil beetle	<i>Mylabris phalerata</i>	Meloidae	Coleoptera	1	1	0	✓	Direct
5	Long-horned beetle	<i>Aristobia approximata</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
6		<i>Aristobia horridula</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
7	Long-horned beetle	<i>Celosterna pollinosa sulphurea</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
8	Long-horned beetle	<i>Xylorhiza adusta</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
9	Long-horned beetle	<i>Dorystenes granulosa</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
10	Long-horned beetle	<i>Dorystenes walkeri</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
11		<i>Batocera rubra</i>	Cerambycidae	Coleoptera	1	1	0	✓	Direct
12	Metallic beetle	<i>Sternocera ruficornis</i>	Buprestidae	Coleoptera	1	0	0	✓	Direct
13		<i>Rhynchophorus ferrugineus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
14		<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	1	1	0		Direct
15		<i>Copris nevinsoni</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
16		<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
17		<i>Helicopris bucephalus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
18		<i>Helicopris dominus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
19		<i>Holotrichia</i> sp.	Scarabaeidae	Coleoptera	1	1	0		Direct
20		<i>Anomala cupripes</i>	Scarabaeidae	Coleoptera	1	1	0	✓	Direct
21		<i>Adoretus compressus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
22		<i>Oryctes rhinoceros</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
23	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0		Direct
24	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0		Direct
25	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0		Direct
26	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0		Direct
27		<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	1	1	0		Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
28		<i>Laccotrepes ruber</i>	Nepidae	Hemiptera	1	1	0		Direct
29		<i>Meimuna</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
30		<i>Pompania</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
31		<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	1	1	0	✓	Direct
32		<i>Anisops</i> sp.	Notonectidae	Hemiptera	1	1	0		Direct
33	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0		Direct
34	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0		Direct
35	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1		Direct
36	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1		Direct
37		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0		Direct
38		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0		Direct
39		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0		Direct
40	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1		Direct
41		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0		Direct
42		<i>Macrotermes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
43		<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	✓	Direct
44		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	✓	Direct
45		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	✓	Direct
46	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
47	The Double-branded Blue	<i>Euploea sylvestris</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
48	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
49	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
50	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
51		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct
52		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
53	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	✓	Direct
54	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
55	The Common Snow Flat	<i>Tagiades japetus</i>	Hesperiidae	Lepidoptera	1	1	1	✓	Direct
56	The Brown Awl	<i>Badamia exclamatoris</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
57	The Common Imperial	<i>Cheritra freja freja</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
58	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
59	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
60	The Club Silverline	<i>Spindasis syama</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
61	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
62	The Common Yamfly	<i>Loxura atynnus</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
63	The Common Pierrot	<i>Castalius rosomon rosomon</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
64	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	✓	Direct
65	The Fluffy Tit	<i>Zelus amasa</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
66	The Common Imperial	<i>Cheritra freja</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
67		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	✓	Direct
68		<i>Tarsolepis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	✓	Direct
69	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
70	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
71	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
72	The Common Plain Sailor	<i>Neptis hylas kamarurpa</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
73	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
74	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Indirect
75	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
76	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
77	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
78	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
79	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	✓	Direct
80	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
81	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
82	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
83	The common Map	<i>Cyrestis thyodamas thyodamus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
84	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
85	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
86	The Grey Pansy	<i>Junonia alites alites</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
87	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
88	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
89	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
90	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Indirect
91	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
92	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
93	The Common Five-ring	<i>Ypthima balbus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
94	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
95	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
96	The Common Glassy Tiger	<i>Parantica aglea melanoidea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
97	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
98	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
99	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
100	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
101	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
102	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
103	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
104	The Common Mime	<i>Chilasa chlytia chlytia</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
105	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
106	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	✓	Direct
107	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
108	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
109	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
110	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
111	The Chain Swordtail	<i>Graphium aristus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
112	The Common Rose	<i>Pachioptia aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
113	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
114	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
115	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	✓	Indirect
116	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
117	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
118	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
119	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
120	The Psyche	<i>Leptostia nina nina</i>	Pieridae	Lepidoptera	1	1	1	✓	Indirect
121	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
122	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
123	The Common Wanderer	<i>Parerionia anais</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
124	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	✓	Indirect
125	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
126	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	✓	Direct
127	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
128	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
129	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
130	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
131		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	✓	Direct
132	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	✓	Indirect
133	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	✓	Direct
134	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	✓	Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
135	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	✓	Indirect
136		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
137		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
138		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
139		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
140		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
141		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
142		<i>Psilogramma menephoron menephoron</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
143		<i>Marumba saishuiana saishuiana</i>	Sphingidae	Lepidoptera	1	0	0	✓	Direct
144		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
145		<i>Lyssa zampa</i>	Uraniidae	Lepidoptera	0	1	0	✓	Indirect
146	Mantid	<i>Hierdula sp.</i>	Mantodea	Mantodea	1	1	0		Direct
147	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
148	Dragonfly	<i>Aethriamanta brevipedis</i>	Libellulidae	Odonata	1	1	1		Direct
149	Dragonfly	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	1	1	0		Direct
150	Dragonfly	<i>Orthetrum sabina</i>	Libellulidae	Odonata	1	1	0		Direct
151	Dragonfly	<i>Orthetrum triangulare</i>	Libellulidae	Odonata	1	1	0		Direct
152	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
153	Dragonfly	<i>Aethriamanta brevipedis</i>	Libellulidae	Odonata	1	1	0		Direct
154		<i>Anax guttatus</i>	Aeshnidae	Odonata	1	1	0		Direct
155	Mole Cricket	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	1	1	0	✓	Direct
156	Cricket	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
157	Cricket	<i>Acheta testacea</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
158	Cricket	<i>Acheta confirmata</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
159	Cricket	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
160		<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	1	1	0	✓	Direct

Table 5 List of insects at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
161		<i>Euconocephalus</i> sp.	Tettigoniidae	Orthoptera	1	1	0	✓	Direct
162	Locust	<i>Patanga succincta</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
163	Locust	<i>Chondracris roseaapbrunner</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
164	Locust	<i>Duceitia japonica</i>	Acrididae	Orthoptera	1	1	0	✓	Direct

Table 6 List of insects at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
1		<i>Sinoxylon</i> sp.	Bostrychidae	Coleoptera	1	1	0	✓	Direct
2		<i>Prosopocoilus giraffa</i>	Lucanidae	Coleoptera	0	0	1		Indirect
3	Oil beetle	<i>Mylabris phalerata</i>	Meloidae	Coleoptera	1	1	0	✓	Direct
4	Long-horned beetle	<i>Aristobia approximata</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
5		<i>Aristobia horridula</i>	Cerambycidae	Coleoptera	1	0	0	✓	Direct
6	Long-horned beetle	<i>Celosterna pollinosa sulphurea</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
7	Long-horned beetle	<i>Xylorhiza adusta</i>	Cerambycidae	Coleoptera	0	0	1	✓	Direct
8	Long-horned beetle	<i>Dorysphenes granulosa</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
9	Long-horned beetle	<i>Dorysphenes walkeri</i>	Cerambycidae	Coleoptera	0	0	1	✓	Indirect
10	Metallic beetle	<i>Sternocera ruficornis</i>	Buprestidae	Coleoptera	1	0	0	✓	Direct
11		<i>Hypomeces squamosus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
12		<i>Rhynchophorus furrugineus</i>	Curculionidae	Coleoptera	1	1	0	✓	Direct
13		<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	1	1	0	✗	Direct
14		<i>Hydrous cavistanum</i>	Hydrophilidae	Coleoptera	1	1	0		Direct
15		<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
16		<i>Heliocopris bucephalus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
17		<i>Heliocopris dominus</i>	Scarabaeidae	Coleoptera	1	1	0		Direct
18		<i>Holotrichia</i> sp.	Scarabaeidae	Coleoptera	1	1	0		Direct
19		<i>Anomala cupripes</i>	Scarabaeidae	Coleoptera	1	1	0	✓	Direct
20		<i>Anomala</i> sp.	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
21		<i>Adoretus compressus</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
22		<i>Oryctes rhinoceros</i>	Scarabaeidae	Coleoptera	1	1	1	✓	Direct
23	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0		Direct
24	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1		Direct
25	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0		Direct
26	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0		Direct
27		<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	1	1	0		Direct

Table 6 List of insects at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
28		<i>Laccotrepes ruber</i>	Nepidae	Hemiptera	1	1	0		Direct
29		<i>Tesseratoma javanica</i>	Pentatomidae	Hemiptera	1	1	0	✓	Direct
30		<i>Meimuna</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
31		<i>Pompania</i> sp.	Cicadidae	Hemiptera	1	1	0	✓	Direct
32		<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	1	1	0	✓	Direct
33	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1		Direct
34	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0		Direct
35	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0		Direct
36	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1		Direct
37	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1		Direct
38	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0		Direct
39		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0		Direct
40	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1		Direct
41		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0		Direct
42		<i>Macrotermes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
43		<i>Termes</i> sp.	Termitidae	Isoptera	1	1	1		Direct
44		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	✓	Direct
45		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	✓	Direct
46	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
47	The Double-branded Blue	<i>Euploea sylvestris</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
48	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	✓	Direct
49	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
50	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	✓	Direct
51		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct
52		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	✓	Direct
53		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	✓	Direct
54	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	✓	Direct

Table 6 List of insects at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
55	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
56	The Brown Awl	<i>Badamia exclamatoris</i>	Hesperiidae	Lepidoptera	0	0	1	✓	Direct
57	The Common Imperial	<i>Cheritra freja freja</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
58	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
59	The Common Cerulean	<i>Jamides celeno</i>	Lycanidae	Lepidoptera	0	1	1	✓	Indirect
60	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
61	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	✓	Indirect
62	The Common Yamfly	<i>Loxura atymnus</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
63	The Common Pierrot	<i>Castalius rosimon rosimon</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
64	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	✓	Direct
65	The Fluffy Tit	<i>Zelus amasa</i>	Lycanidae	Lepidoptera	1	1	0	✓	Direct
66	The Common Imperial	<i>Cheritra freja</i>	Lycanidae	Lepidoptera	1	1	1	✓	Direct
67		<i>Tarsolepis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	✓	Direct
68	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
69	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
70	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
71	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
72	The Common Plain Sailor	<i>Neptis hylas kamarupa</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
73	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
74	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Indirect
75	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
76	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
77	The Common Bushbrown	<i>Mycalesis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
78	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
79	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	✓	Direct
80	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
81	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct

Table 6 List of insects at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
82	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
83	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
84	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
85	The Grey Pansy	<i>Junonia atlites atlites</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
86	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
87	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
88	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
89	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Indirect
90	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
91	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
92	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Indirect
93	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	✓	Direct
94	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
95	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
96	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
97	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	✓	Direct
98	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
99	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	✓	Direct
100	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
101	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
102	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	✓	Direct
103	The Common Mime	<i>Chilasa chlytia chlytia</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
104	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	✓	Direct
105	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
106	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
107	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
108	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct

Table 6 List of insects at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
109	The Chain Swordtail	<i>Graphium aristaeus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
110	The Common Rose	<i>Pachioptera aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	✓	Direct
111	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
112	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
113	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	✓	Indirect
114	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
115	The Red Halen	<i>Papilio heleenus</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
116	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	✓	Direct
117	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	✓	Direct
118	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
119	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
120	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
121	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
122	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	✓	Indirect
123	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
124	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	✓	Direct
125	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	✓	Direct
126	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	✓	Direct
127	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
128	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	✓	Indirect
129		<i>Thalasodes falsaria</i>	Pyralidae	Lepidoptera	1	1	0	✓	Direct
130		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	✓	Direct
131	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	✓	Indirect
132	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	✓	Direct
133	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	✓	Direct
134	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	✓	Indirect

Table 6 List of insects at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			Pest status	References
					DDF	MDF	DEF		
135		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
136		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
137		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	✓	Indirect
138		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
139		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
140		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
141		<i>Psilogramma menephoron menephoron</i>	Sphingidae	Lepidoptera	0	1	1	✓	Indirect
142		<i>Marumba saishuiana saishuiana</i>	Sphingidae	Lepidoptera	1	0	0	✓	Direct
143		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	✓	Direct
144		<i>Lyssa zampa</i>	Uraniidae	Lepidoptera	0	1	0	✓	Indirect
145	Mantid	<i>Hierdula sp.</i>	Mantidae	Mantodea	1	1	0		Direct
146	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
147	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	1		Direct
148	Dragonfly	<i>Crocothemis servilia</i>	Libellulidae	Odonata	1	0	0		Direct
149	Dragonfly	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	1	1	0		Direct
150	Dragonfly	<i>Orthetrum sabina</i>	Libellulidae	Odonata	1	1	0		Direct
151	Dragonfly	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	1	1	0		Direct
152	Dragonfly	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	1	1	0		Direct
153	Mole Cricket	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	1	1	0	✓	Direct
154	Cricket	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
155	Cricket	<i>Acheta testacea</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
156	Cricket	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	1	1	0	✓	Direct
157		<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	1	1	0	✓	Direct
158		<i>Euconocephalus sp.</i>	Tettigoniidae	Orthoptera	1	1	0	✓	Direct
159	Locust	<i>Patanga succincta</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
160	Locust	<i>Acrida willemsei</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
161	Locust	<i>Chondracris roseaapbrunner</i>	Acrididae	Orthoptera	1	1	0	✓	Direct
162	Locust	<i>Ducetia japonica</i>	Acrididae	Orthoptera	1	1	0	✓	Direct

4.2 Insect Pollinators

The most seen insect pollinators were the adults of butterflies and moths (O. Lepidoptera, 116 species), followed by O. Hymenoptera (11 species) and O. Diptera (5 species) respectively. Most insect species were common within the project areas such as *Pachiopta aristolochiae goniopiltis* (Lepidoptera : Papilionidae), *Papiliodemoleus malayanus* (Lepidoptera : Papilionidae), *Leptosia nina nina* (Lepidoptera : Pieridae), *Catopsillia Pomona Pomona* (Lepidoptera : Pieridae), *Euploea core godartii* (Lepidoptera : Danaidae), *Apis dorsata* (Hymenoptera : Apidae), *Chrysomya megacephala* (Diptera : Calliphoridae), and *Musca domestica* (Diptera : Muscidae), etc.

124 species, 79 genera, 20 families, and 3 orders of insect pollinators were collected at Pha Taem National Park (Table 7). They included O. Lepidoptera (110 species), O. Hymenoptera (9 species), and O. Diptera (5 species).

111 species, 73 genera, 20 families, and 3 orders at Kaeng Tana National Park were found (Table 8). 98 species were found in O. Lepidoptera, followed by 9 species in O. Hymenoptera and 4 species in O. Diptera.

116 species, 77 genera, 23 families, and 3 orders were presented at Phu Jong-Na Yoi National Park (Table 9). The most insects presented in O. Lepidoptera with 102 species, followed by O. Hymenoptera with 10 species and O. Diptera with 4 species.

116 species, 78 genera, 22 families, and 3 orders were found in Yod Dom Wildlife Sanctuary (Table 10). O. Lepidoptera included 103 species, followed by O. Hymenoptera (9 species) and O. Diptera (4 species).

114 species, 73 genera, 19 families, and 3 orders were found at Bun Thrik-Yod Mon Proposed Wildlife Sanctuary (Table 11). 100, 9, and 4 species were found in O. Lepidoptera, O. Hymenoptera, and O. Diptera respectively.

Table 7 List of insect pollinators at Pha Taem National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
1	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0	Direct
2	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0	Direct
3	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1	Direct
4	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0	Direct
5	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0	Direct
6	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1	Direct
7	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0	Direct
8	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1	Direct
9	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1	Direct
10	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0	Direct
11		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0	Direct
12		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0	Direct
13	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1	Direct
14		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0	Direct
15		<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	Direct
16		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	Direct
17		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	Direct
18	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	Direct
19	The Double-branded Blue	<i>Euploea sylvestris</i>	Danaidae	Lepidoptera	1	1	1	Direct
20	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	Direct
21	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	Direct
22	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	Direct
23	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	Direct
24		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
25		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	Direct
26	The White Imperial	<i>Neomyrina nivea</i>	Hesperiidae	Lepidoptera	0	1	1	Direct
27	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	Direct

Table 7 List of insect pollinators at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
28	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
29	The Common Snow Flat	<i>Tagiades japetus</i>	Hesperiidae	Lepidoptera	1	1	1	Direct
30	The Brown Awl	<i>Badamia exclamatoris</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
31	The Common Imperial	<i>Cheritra freja freja</i>	Lycaenidae	Lepidoptera	1	1	0	Direct
32	The Common Tailed Judy	<i>Abisara neophron</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
33	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycaenidae	Lepidoptera	0	0	1	Indirect
34	The Club Silverline	<i>Spindasis syama</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
35	The Angled Sunbeam	<i>Curetis acuta</i>	Lycaenidae	Lepidoptera	0	0	1	Indirect
36	The Common Yamfly	<i>Loxara atymnus</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
37	The Common Pierrot	<i>Castalius rosimon rosimon</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
38	The Chocolate Royal	<i>Remelana jangala</i>	Lycaenidae	Lepidoptera	0	1	1	Direct
39	The Fluffy Tit	<i>Zeltus amasa</i>	Lycaenidae	Lepidoptera	1	1	0	Direct
40	The Common Imperial	<i>Cheritra freja</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
41		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	Direct
42	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
43	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
44	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
45	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
46	The Common Plain Sailor	<i>Neptis hylas kamarupa</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
47	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
48	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	Indirect
49	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
50	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
51	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
52	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
53	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
54	The Common Cruiser	<i>Vindula erotha erotha</i>	Nymphalidae	Lepidoptera	0	1	0	Direct

Table 7 List of insect pollinators at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
55	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
56	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
57	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
58	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
59	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
60	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
61	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
62	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
63	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
64	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	Indirect
65	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
66	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
67	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
68	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
69	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
70	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
71	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
72	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
73	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
74	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
75	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
76	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
77	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
78	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
79	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
80	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	Direct
81	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	Direct

Table 7 List of insect pollinators at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
82	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
83	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	Direct
84	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	Direct
85	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	Direct
86	The Chain Swordtail	<i>Graphium aristeus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	Direct
87	The Spot Swordtail	<i>Graphium nonius swinhoi</i>	Papilionidae	Lepidoptera	0	0	1	Direct
88	The Common Rose	<i>Pachiopta aristolochiae goniopilis</i>	Papilionidae	Lepidoptera	1	1	1	Direct
89	The Black and White Helen	<i>Papilio nepheleus chaon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
90	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	Direct
91	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	Indirect
92	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	Direct
93	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	Direct
94	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	Direct
95	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	Direct
96	The Psyche	<i>Leptosia nina nina</i>	Pieridae	Lepidoptera	1	1	1	Indirect
97	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	Direct
98	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	Direct
99	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	Direct
100	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	Direct
101	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	Indirect
102	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	Direct
103	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	Direct
104	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	Direct
105	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	Direct
106	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	Direct
107	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	Indirect
108	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	Indirect

Table 7 List of insect pollinators at Pha Taem National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
109		<i>Actias</i> sp.	Saturniidae	Lepidoptera	1	0	0	Direct
110	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	Indirect
111	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	Direct
112	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	Direct
113	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	Indirect
114		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	Indirect
115		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	Direct
116		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	Indirect
117		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
118		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	Direct
119		<i>Pergesa acteus</i>	Sphingidae	Lepidoptera	1	1	1	Direct
120		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	Direct
121		<i>Psilogramma menephoron menephoron</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
122		<i>Marumba saishuana saishuana</i>	Sphingidae	Lepidoptera	1	0	0	Direct
123		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	Direct
124		<i>Lyssa zampa</i>	Uranidae	Lepidoptera	0	1	0	Indirect

Table 8 List of insect pollinators at Kaeng Tana National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
1	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0	Direct
2	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0	Direct
3	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0	Direct
4	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0	Direct
5	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1	Direct
6	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0	Direct
7	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1	Direct
8	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1	Direct
9	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0	Direct
10		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0	Direct
11		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0	Direct
12		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0	Direct
13	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1	Direct
14		<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	Direct
15		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	Direct
16	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	Direct
17	The Double-branded Blue	<i>Euploea sylvestris</i>	Danaidae	Lepidoptera	1	1	1	Direct
18	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	Direct
19	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	Direct
20	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	Direct
21		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
22		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
23		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	Direct
24	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	Direct
25	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
26	The Common Snow Flat	<i>Tagiades japetus</i>	Hesperiidae	Lepidoptera	1	1	1	Direct
27	The Brown Awl	<i>Badamia exclamatoris</i>	Hesperiidae	Lepidoptera	0	0	1	Direct

Table 8 List of insect pollinators at Kaeng Tana National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
28	The Common Tailed Judy	<i>Abisara neophron</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
29	The Common Cerulean	<i>Janides celeno</i>	Lycaenidae	Lepidoptera	0	1	1	Indirect
30	The Club Silverline	<i>Spindasis syama</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
31	The Angled Sunbeam	<i>Curetis acuta</i>	Lycaenidae	Lepidoptera	0	0	1	Indirect
32	The Common Yamfly	<i>Loxura atymnus</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
33	The Common Pierrot	<i>Castalius rosomon rosomon</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
34	The Fluffy Tit	<i>Zelus amasa</i>	Lycaenidae	Lepidoptera	1	1	0	Direct
35	The Common Imperial	<i>Cheritra freja</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
36		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	Direct
37	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
38	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
39	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
40	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
41	The Common Plain Sailor	<i>Neptis hylas kamarupa</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
42	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
43	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	Indirect
44	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
45	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
46	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
47	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	Direct
48	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
49	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
50	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
51	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
52	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
53	The Grey Pansy	<i>Junonia atlites atlites</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
54	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	Direct

Table 8 List of insect pollinators at Kaeng Tana National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
55	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
56	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
57	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	Indirect
58	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
59	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
60	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
61	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
62	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
63	The Common Glassy Tiger	<i>Parantica oglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
64	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
65	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
66	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
67	The Great Assyrian	<i>Terinos atitia</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
68	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
69	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
70	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
71	The Common Mime	<i>Chilasa clytia clytia</i>	Papilionidae	Lepidoptera	0	1	1	Direct
72	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	Direct
73	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	Direct
74	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
75	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	Direct
76	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	Direct
77	The Chain Swordtail	<i>Graphium aristus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	Direct
78	The Common Rose	<i>Pachioptera aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	Direct
79	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
80	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	Indirect
81	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	Direct

Table 8 List of insect pollinators at Kaeng Tana National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
82	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	Direct
83	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	Direct
84	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	Direct
85	The Psyche	<i>Leptosia nina nina</i>	Pieridae	Lepidoptera	1	1	1	Indirect
86	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	Direct
87	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	Direct
88	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	Direct
89	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	Indirect
90	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	Direct
91	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	Direct
92	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	Direct
93	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	Direct
94	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	Direct
95	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	Indirect
96	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	Indirect
97		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	Direct
98	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	Indirect
99	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	Direct
100	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	Direct
101	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	Indirect
102		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	Indirect
103		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	Direct
104		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	Indirect
105		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
106		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	Direct
107		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	Direct
108		<i>Psilogramma menephoron menephoron</i>	Sphingidae	Lepidoptera	0	1	1	Indirect

Table 8 List of insect pollinators at Kaeng Tana National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
109		<i>Marumba saishuihana saishuihana</i>	Sphingidae	Lepidoptera	1	0	0	Direct
110		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	Direct
111		<i>Lyssa zampa</i>	Uraniidae	Lepidoptera	0	1	0	Indirect

Table 9 List of insect pollinators at Phu Jong – Na Yoi National Park

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
1	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0	Direct
2	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0	Direct
3	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1	Direct
4	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0	Direct
5	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1	Direct
6	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0	Direct
7	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0	Direct
8	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1	Direct
9	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0	Direct
10		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0	Direct
11		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0	Direct
12		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0	Direct
13	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1	Direct
14		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0	Direct
15		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	Direct
16		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	Direct
17	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	Direct
18	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	Direct
19	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	Direct
20	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	Direct
21	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	Direct
22		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
23		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	Direct
24	The White Imperial	<i>Neomyrina nivea</i>	Hesperiidae	Lepidoptera	0	1	1	Direct
25	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	Direct
26	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
27	The Brown Awl	<i>Badamia exclamationis</i>	Hesperiidae	Lepidoptera	0	0	1	Direct

Table 9 List of insect pollinators at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
28	The Common Imperial	<i>Cheritra freja freja</i>	Lycaenidae	Lepidoptera	1	1	0	Direct
29	The Common Tailed Judy	<i>Abisara neophron</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
30	The Common Cerulean	<i>Jamides celeno</i>	Lycaenidae	Lepidoptera	0	1	1	Indirect
31	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycaenidae	Lepidoptera	0	0	1	Indirect
32	The Angled Sunbeam	<i>Curetis acuta</i>	Lycaenidae	Lepidoptera	0	0	1	Indirect
33	The Common Yamfly	<i>Loxura atymnus</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
34	The Common Pierrot	<i>Castalius rosimon rosimon</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
35	The Chocolate Royal	<i>Remelana jangala</i>	Lycaenidae	Lepidoptera	0	1	1	Direct
36	The Common Imperial	<i>Cheritra freja</i>	Lycaenidae	Lepidoptera	1	1	1	Direct
37		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	Direct
38		<i>Tarsolepis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	Direct
39	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
40	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
41	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
42	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
43	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
44	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	Indirect
45	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
46	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
47	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
48	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	Direct
49	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
50	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
51	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
52	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
53	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
54	The Grey Pansy	<i>Junonia atites atites</i>	Nymphalidae	Lepidoptera	1	1	1	Direct

Table 9 List of insect pollinators at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
55	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
56	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
57	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
58	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
59	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
60	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
61	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
62	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
63	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
64	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
65	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
66	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
67	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
68	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
69	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
70	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
71	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
72	The Common Mime	<i>Chilasa clytia clytia</i>	Papilionidae	Lepidoptera	0	1	1	Direct
73	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	Direct
74	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
75	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	Direct
76	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	Direct
77	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	Direct
78	The Spot Swordtail	<i>Graphium nomius swinhoei</i>	Papilionidae	Lepidoptera	0	0	1	Direct
79	The Common Rose	<i>Pachioptera aristolochiae goniopilis</i>	Papilionidae	Lepidoptera	1	1	1	Direct
80	The Black and White Helen	<i>Papilio nephetus chaon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
81	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	Direct

Table 9 List of insect pollinators at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
82	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	Indirect
83	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	Direct
84	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	Direct
85	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	Direct
86	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	Direct
87	The Psyche	<i>Leptostia nina nina</i>	Pieridae	Lepidoptera	1	1	1	Indirect
88	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	Direct
89	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	Direct
90	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	Direct
91	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	Direct
92	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	Indirect
93	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	Direct
94	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	Direct
95	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	Direct
96	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	Direct
97	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	Direct
98	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	Indirect
99	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	Indirect
100		<i>Thalasodes falsaria</i>	Pieridae	Lepidoptera	1	1	0	Direct
101		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	Direct
102	The Nigger	<i>Orsotriaena medus</i>	Saturniidae	Lepidoptera	0	1	1	Indirect
103	The Evening Brown	<i>Melanitis phedima ganapati</i>	Saturniidae	Lepidoptera	0	1	1	Direct
104	The Common Evening Brown	<i>Melanitis leda leda</i>	Saturniidae	Lepidoptera	1	1	1	Direct
105	The Common Palmfly	<i>Elymnias hypermnestra</i>	Saturniidae	Lepidoptera	1	1	0	Indirect
106		<i>Acosmeryx anceus subdentata</i>	SpHINGIDAE	Lepidoptera	0	0	1	Indirect
107		<i>Psilogramma menephoron</i>	SpHINGIDAE	Lepidoptera	1	1	0	Direct
108		<i>Ambulyx clavata</i>	SpHINGIDAE	Lepidoptera	0	0	1	Indirect

Table 9 List of insect pollinators at Phu Jong – Na Yoi National Park (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
109		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
110		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	Direct
111		<i>Pergesa acteus</i>	Sphingidae	Lepidoptera	1	1	1	Direct
112		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	Direct
113		<i>Psilogramma menephron menephron</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
114		<i>Marumba saishuitana saishuitana</i>	Sphingidae	Lepidoptera	1	0	0	Direct
115		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	Direct
116		<i>Lyssa zampa</i>	Uraniidae	Lepidoptera	0	1	0	Indirect

Table 10 List of insect pollinators at Yod Dom Wildlife Sanctuary

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
1	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0	Direct
2	House fly	<i>Musca domestica</i>	Muscidae	Diptera	1	1	0	Direct
3	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0	Direct
4	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0	Direct
5	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0	Direct
6	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0	Direct
7	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1	Direct
8	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1	Direct
9		<i>Ceratina</i> sp.	Anthophoridae	Hymenoptera	1	0	0	Direct
10		<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	1	1	0	Direct
11		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0	Direct
12	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1	Direct
13		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0	Direct
14		<i>Xyleutes ceramicus</i>	Cossidae	Lepidoptera	0	1	0	Direct
15		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	Direct
16		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	Direct
17	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	Direct
18	The Double-branded Blue	<i>Euploea sylvestris</i>	Danaidae	Lepidoptera	1	1	1	Direct
19	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	Direct
20	The Common Tiger	<i>Danaus genutia genutia</i>	Danaidae	Lepidoptera	1	1	1	Direct
21	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	Direct
22		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
23		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	Direct
24	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	Direct
25	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
26	The Common Snow Flat	<i>Tagiades japetus</i>	Hesperiidae	Lepidoptera	1	1	1	Direct
27	The Brown Awl	<i>Badamia exclamatoris</i>	Hesperiidae	Lepidoptera	0	0	1	Direct

Table 10 List of insect pollinators at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
28	The Common Imperial	<i>Cheritra freja freja</i>	Lycanidae	Lepidoptera	1	1	0	Direct
29	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	Direct
30	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	Indirect
31	The Club Silverline	<i>Spindasis syama</i>	Lycanidae	Lepidoptera	1	1	1	Direct
32	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	Indirect
33	The Common Yamfly	<i>Loxura atymnus</i>	Lycanidae	Lepidoptera	1	1	1	Direct
34	The Common Pierrot	<i>Castalius rosomon rosomon</i>	Lycanidae	Lepidoptera	1	1	1	Direct
35	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	Direct
36	The Fluffy Tit	<i>Zeltus amasa</i>	Lycanidae	Lepidoptera	1	1	0	Direct
37	The Common Imperial	<i>Cheritra freja</i>	Lycanidae	Lepidoptera	1	1	1	Direct
38		<i>Peridrome orbicularis</i>	Noctuidae	Lepidoptera	1	1	0	Direct
39		<i>Tarsolepis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	Direct
40	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
41	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
42	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
43	The Common Plain Sailor	<i>Neptis hylas kamarurpa</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
44	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
45	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	Indirect
46	The Common Sergeant	<i>Athyma perius perius</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
47	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
48	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
49	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
50	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	Direct
51	The White-edged blue Baron	<i>Euthalia phenius</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
52	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
53	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
54	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	Direct

Table 10 List of insect pollinators at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
55	The Marbled Map	<i>Cyrestis coeles</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
56	The Chocolate Pansy	<i>Junonia iphita iphita</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
57	The Grey Pansy	<i>Junonia atlites atlites</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
58	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
59	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
60	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
61	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	Indirect
62	The Common Earl	<i>Tanaecia julii odiina</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
63	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
64	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
65	The Eastern Five-ring	<i>Ypthima similis</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
66	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
67	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
68	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
69	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
70	The Dark Blue Tiger	<i>Tirumala septentrionis septentrionis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
71	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
72	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
73	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
74	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
75	The Common Mime	<i>Chilasa chytia chytia</i>	Papilionidae	Lepidoptera	0	1	1	Direct
76	The Burmese Raven	<i>Papilio mahadeva mahadeva</i>	Papilionidae	Lepidoptera	0	0	1	Direct
77	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	Direct
78	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
79	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	Direct
80	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	Direct
81	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	Direct

Table 10 List of insect pollinators at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
82	The Chain Swordtail	<i>Graphium aristaeus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	Direct
83	The Common Rose	<i>Pachioptera aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	Direct
84	The Black and White Helen	<i>Papilio nephelus chaon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
85	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	Direct
86	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	Indirect
87	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	Direct
88	The Red Helen	<i>Papilio helemus</i>	Papilionidae	Lepidoptera	0	0	1	Direct
89	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	Direct
90	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	Direct
91	The Psyche	<i>Leptosia nina nina</i>	Pieridae	Lepidoptera	1	1	1	Indirect
92	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	Direct
93	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	Direct
94	The Common Wanderer	<i>Pareronia anais</i>	Pieridae	Lepidoptera	1	1	1	Direct
95	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	Indirect
96	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	Direct
97	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	Direct
98	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	Direct
99	The Common Albatross	<i>Appias albina darata</i>	Pieridae	Lepidoptera	1	1	1	Direct
100	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	Indirect
101	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	Indirect
102		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	Direct
103	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	Indirect
104	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	Direct
105	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	Direct
106	The Common Palmfly	<i>Elymnias hypermnestra</i>	Satyridae	Lepidoptera	1	1	0	Indirect
107		<i>Acosmeryx anceus subdentata</i>	Sphingidae	Lepidoptera	0	0	1	Indirect
108		<i>Psilogramma menephoron</i>	Sphingidae	Lepidoptera	1	1	0	Direct

Table 10 List of insect pollinators at Yod Dom Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
109		<i>Ambulyx clavata</i>	Sphingidae	Lepidoptera	0	0	1	Indirect
110		<i>Theretra nessus</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
111		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	Direct
112		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	Direct
113		<i>Psilogramma menephron menephron</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
114		<i>Marumba saishuana saishuana</i>	Sphingidae	Lepidoptera	1	0	0	Direct
115		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	Direct
116		<i>Lyssa zampa</i>	Uranidae	Lepidoptera	0	1	0	Indirect

Table 11 List of insect pollinators at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
1	Blow fly	<i>Chrysomya megacephala</i>	Calliphoridae	Diptera	1	1	0	Direct
2	Flesh fly	<i>Parasarcophaga ruficornis</i>	Sarcophagidae	Diptera	1	1	1	Direct
3	Flower fly	<i>Episyrphus</i> sp.	Syrphidae	Diptera	1	1	0	Direct
4	Flower fly	<i>Sphaerophoria</i> sp.	Syrphidae	Diptera	1	1	0	Direct
5	Giant honey bee	<i>Apis dorsata</i>	Apidae	Hymenoptera	0	1	1	Direct
6	Dwarf honey bee	<i>Apis florea</i>	Apidae	Hymenoptera	0	1	0	Direct
7	Indian honey bee	<i>Apis cerana</i>	Apidae	Hymenoptera	0	1	0	Direct
8	Stingless bee	<i>Trigona collina</i>	Apidae	Hymenoptera	1	1	1	Direct
9	Stingless bee	<i>Trigona apicalis</i>	Apidae	Hymenoptera	1	1	1	Direct
10	Carpenter bee	<i>Xylocopa</i> sp.	Apidae	Hymenoptera	1	0	0	Direct
11		<i>Vespa tropica</i>	Vespidae	Hymenoptera	1	1	0	Direct
12	Tiger Wasp	<i>Vespa affinis</i>	Vespidae	Hymenoptera	1	1	1	Direct
13		<i>Polistes stigma</i>	Vespidae	Hymenoptera	1	1	0	Direct
14		<i>Xyleutes leuconotus</i>	Cossidae	Lepidoptera	1	0	0	Direct
15		<i>Zeuzera coffeae</i>	Cossidae	Lepidoptera	1	1	0	Direct
16	The Striped Blue Crow	<i>Euploea mulciber mulciber</i>	Danaidae	Lepidoptera	0	0	1	Direct
17	The Double-branded Blue	<i>Euploea sylvest</i>	Danaidae	Lepidoptera	1	1	1	Direct
18	The Common Indian Crow	<i>Euploea core godartii</i>	Danaidae	Lepidoptera	1	1	1	Direct
19	The Blue King Crow	<i>Euploea camaralzeman</i>	Danaidae	Lepidoptera	0	0	1	Direct
20	The Yellow Tiger	<i>Parantica aspasia aspasia</i>	Danaidae	Lepidoptera	0	0	1	Direct
21		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
22		<i>Buzura</i> sp.	Geometridae	Lepidoptera	1	0	0	Direct
23		<i>Pelagodes falsaria</i>	Geometridae	Lepidoptera	1	0	0	Direct
24	The Common Chestnut	<i>Iambrix salsala</i>	Hesperiidae	Lepidoptera	1	1	0	Direct
25	The Common Small Flat	<i>Sarangesa dasahara</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
26	The Brown Awl	<i>Badamia exclamatonis</i>	Hesperiidae	Lepidoptera	0	0	1	Direct
27	The Common Imperial	<i>Cheritra freja freja</i>	Lycaenidae	Lepidoptera	1	1	0	Direct

Table 11 List of insect pollinators at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
28	The Common Tailed Judy	<i>Abisara neophron</i>	Lycanidae	Lepidoptera	1	1	1	Direct
29	The Common Cerulean	<i>Jamides celeno</i>	Lycanidae	Lepidoptera	0	1	1	Indirect
30	The Metallic Cerulean	<i>Jamides alecto ageladas</i>	Lycanidae	Lepidoptera	0	0	1	Indirect
31	The Angled Sunbeam	<i>Curetis acuta</i>	Lycanidae	Lepidoptera	0	0	1	Indirect
32	The Common Yamfly	<i>Loxura atymnus</i>	Lycanidae	Lepidoptera	1	1	1	Direct
33	The Common Pierrot	<i>Castalius rosimon rosimon</i>	Lycanidae	Lepidoptera	1	1	1	Direct
34	The Chocolate Royal	<i>Remelana jangala</i>	Lycanidae	Lepidoptera	0	1	1	Direct
35	The Fluffy Tit	<i>Zelus amasa</i>	Lycanidae	Lepidoptera	1	1	0	Direct
36	The Common Imperial	<i>Cheritra freja</i>	Lycanidae	Lepidoptera	1	1	1	Direct
37		<i>Tarsolepis elephantorum</i>	Notodontidae	Lepidoptera	1	0	0	Direct
38	The Common Lascar	<i>Neptis hordonia hordonia</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
39	The Red Lacewing	<i>Cethosia biblis biblis</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
40	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
41	The Short-banded Sailor	<i>Neptis columella martabana</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
42	The Common Plain Sailor	<i>Neptis hylas kamarurpa</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
43	The Gray Count	<i>Tanaecia lepidea cognata</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
44	The Long-branded Blue Crow	<i>Euploea algea</i>	Nymphalidae	Lepidoptera	0	0	1	Indirect
45	The Color Sergeant	<i>Athyma nefte</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
46	The Clipper	<i>Parthenos sylvia</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
47	The Common Bushbrown	<i>Mycalopsis perseus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
48	The Tawny Rajah	<i>Charaxes bernardus</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
49	The Common Cruiser	<i>Vindula erota erota</i>	Nymphalidae	Lepidoptera	0	1	0	Direct
50	The White-edged blue Baron	<i>Euthalia phemius</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
51	The Powdered Baron	<i>Euthalia kesava</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
52	The White-tipped Baron	<i>Euthalia eriphyle</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
53	The common Map	<i>Cyrestis thyodamas thyodamas</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
54	The Marbled Map	<i>Cyrestis cocles</i>	Nymphalidae	Lepidoptera	0	1	1	Direct

Table 11 List of insect pollinators at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
55	The Grey Pansy	<i>Junonia atlites atlites</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
56	The Blue Pansy	<i>Junonia orithya</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
57	The Peacock Pansy	<i>Junonia almana almana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
58	The Lemon Pansy	<i>Junonia lemonias lemonias</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
59	The Yellow Pansy	<i>Junonia hierta hierta</i>	Nymphalidae	Lepidoptera	1	1	1	Indirect
60	The Common Earl	<i>Tanaecia julii odilina</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
61	The Knight	<i>Lebadea martha martha</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
62	The Common Five-ring	<i>Ypthima baldus</i>	Nymphalidae	Lepidoptera	0	1	1	Indirect
63	The Common Yeoman	<i>Cirrochoa tyche mithila</i>	Nymphalidae	Lepidoptera	1	1	1	Direct
64	The Leopard Lacewing	<i>Cethosia cyane euanthes</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
65	The Common Glassy Tiger	<i>Parantica aglea melanoides</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
66	The Plain Tiger	<i>Danaus chrysippus chrysippus</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
67	The Blue Glassy Tiger	<i>Ideopsis vulgaris macrina</i>	Nymphalidae	Lepidoptera	1	1	0	Direct
68	The Blue Nawab	<i>Polyura schreiber</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
69	The Great Assyrian	<i>Terinos atlita</i>	Nymphalidae	Lepidoptera	0	1	1	Direct
70	The Common Archduke	<i>Lexias pardalis dirteana</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
71	The Great Archduke	<i>Euthalia cyanipardus</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
72	The Commander	<i>Moduza procris</i>	Nymphalidae	Lepidoptera	0	0	1	Direct
73	The Common Mime	<i>Chilasa chlytia chlytia</i>	Papilionidae	Lepidoptera	0	1	1	Direct
74	The Golden Birdwing	<i>Troides aeacus aeacus</i>	Papilionidae	Lepidoptera	0	1	0	Direct
75	The Common Bluebottle	<i>Graphium sarpedon</i>	Papilionidae	Lepidoptera	0	1	1	Direct
76	The Tailed Jay	<i>Graphium agamemnon agamemnon</i>	Papilionidae	Lepidoptera	1	1	1	Direct
77	The Lime Butterfly	<i>Papilio demoleus malayanus</i>	Papilionidae	Lepidoptera	1	1	1	Direct
78	The Fivebar Swordtail	<i>Graphium antiphates pompilius</i>	Papilionidae	Lepidoptera	0	1	1	Direct
79	The Chain Swordtail	<i>Graphium aristaeus hemocrates</i>	Papilionidae	Lepidoptera	0	1	1	Direct
80	The Common Rose	<i>Pachioptia aristolochiae goniopiltis</i>	Papilionidae	Lepidoptera	1	1	1	Direct
81	The Black and White Helen	<i>Papilio nephetus chaon</i>	Papilionidae	Lepidoptera	0	1	1	Direct

Table 11 List of insect pollinators at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
82	The Common Mormon	<i>Papilio polytes polytes</i>	Papilionidae	Lepidoptera	0	1	1	Direct
83	The Great Mormon	<i>Papilio memnon agenor</i>	Papilionidae	Lepidoptera	0	0	1	Indirect
84	The Paris Peacock	<i>Papilio paris paris</i>	Papilionidae	Lepidoptera	0	0	1	Direct
85	The Red Halen	<i>Papilio helenus</i>	Papilionidae	Lepidoptera	0	0	1	Direct
86	The Adamson's Rose	<i>Pirides adamsoni</i>	Papilionidae	Lepidoptera	0	1	1	Direct
87	The Green Dragontail	<i>Lamproptera meges virescens</i>	Papilionidae	Lepidoptera	0	0	1	Direct
88	The Tree yellow	<i>Eurema harina burmana</i>	Pieridae	Lepidoptera	0	1	1	Direct
89	The Three-spot Grass Yellow	<i>Eurema blanda silhetana</i>	Pieridae	Lepidoptera	1	1	1	Direct
90	The Great Orange Tip	<i>Hebomoia glaucippe glaucippe</i>	Pieridae	Lepidoptera	1	1	1	Direct
91	The Common Wanderer	<i>Parerionia anais</i>	Pieridae	Lepidoptera	1	1	1	Direct
92	The Red-spot Jezebel	<i>Delias descombesi</i>	Pieridae	Lepidoptera	0	1	1	Indirect
93	The Painted Jezebel	<i>Delias hyparete</i>	Pieridae	Lepidoptera	1	1	1	Direct
94	The Lemon Emigrant	<i>Catopsilia pomona hilaria</i>	Pieridae	Lepidoptera	1	1	0	Direct
95	The Lemon Emigrant	<i>Catopsilia pomona pomona</i>	Pieridae	Lepidoptera	1	1	1	Direct
96	The Chocolate Albatross	<i>Appias lyncida</i>	Pieridae	Lepidoptera	0	1	1	Direct
97	The Orange Gull	<i>Cepora iudith</i>	Pieridae	Lepidoptera	0	0	1	Indirect
98	The Common Gull	<i>Cepora nerissa</i>	Pieridae	Lepidoptera	0	0	1	Indirect
99		<i>Thalasodes falsaria</i>	Pyralidae	Lepidoptera	1	1	0	Direct
100		<i>Actias sp.</i>	Saturniidae	Lepidoptera	1	0	0	Direct
101	The Nigger	<i>Orsotriaena medus</i>	Satyridae	Lepidoptera	0	1	1	Indirect
102	The Evening Brown	<i>Melanitis phedima ganapati</i>	Satyridae	Lepidoptera	0	1	1	Direct
103	The Common Evening Brown	<i>Melanitis leda leda</i>	Satyridae	Lepidoptera	1	1	1	Direct
104	The Common Palmfly	<i>Elymnias hypermestra</i>	Satyridae	Lepidoptera	1	1	0	Indirect
105		<i>Acosmeryx anceus subdentata</i>	Spingidae	Lepidoptera	0	0	1	Indirect
106		<i>Psilogramma menephoron</i>	Spingidae	Lepidoptera	1	1	0	Direct
107		<i>Ambulyx clavata</i>	Spingidae	Lepidoptera	0	0	1	Indirect
108		<i>Theretra nessus</i>	Spingidae	Lepidoptera	0	1	1	Indirect

Table 11 List of insect pollinators at Bun Thrik – Yod Mon Proposed Wildlife Sanctuary (cont.)

No.	Common Name	Scientific Name	Family	Order	Type of Forest			References
					DDF	MDF	DEF	
109		<i>Theretra clotho</i>	Sphingidae	Lepidoptera	1	1	0	Direct
110		<i>Acherontia lachesis</i>	Sphingidae	Lepidoptera	1	1	0	Direct
111		<i>Psilogramma menephron menephron</i>	Sphingidae	Lepidoptera	0	1	1	Indirect
112		<i>Marumba saishuiana saishuiana</i>	Sphingidae	Lepidoptera	1	0	0	Direct
113		<i>Ambulyx cyclastica</i>	Sphingidae	Lepidoptera	1	1	0	Direct
114		<i>Lyssa zampa</i>	Uranidae	Lepidoptera	0	1	0	Indirect

4.3 Edible Insects

Table 12 shows list of species and the presence of edible insects in each site. Total 48 species from 43 genera belongs to 22 families and 7 orders were found in all sites. Each species was presented in all sites but different in number. Some species were common to all sites : *Pastanga succincta* (Orthoptera : Acrididae), *Gryllotalpa africana* (Orthoptera : Gryllotalpidae), *Oecophylla smaragdina* (Hymenoptera : Formicidae), *Holotrichia* sp. (Coleoptera : Scarabaeidae), *Hypomeces squamosa* (Coleoptera : Curculionidae), and *Brachytrupes portentosus* (Orthoptera : Gryllidae), However, *Gryllotalpa africana* and *Oecophylla smaragdina* were very popular for cooking and selling. All insects were found in both natural forests and agricultural areas.

All insects in the sites were consumed during their immature and / or mature stage of life cycle (Table 12). Most Coleoptera and Isoptera were consumed in adult stage : Malang Thub (*Sternocera rugicornis* : Buprestidae), Malang Khom Tong (*Hypomeces squamosus* : Curculionidae), Malang Gud Jee (*Copris nevinsoni* : Scarabaeidae), Malang Ginoon Khiaw (*Anomala cupriper* : Scarabaeidae), Malang Mauw (*Macrotermes* sp. : Termitidae). Furthermore, some insects were eaten during their immature stage namely Duang Ma Praow (*Rhynchophorus furrugineus* : Curculionidae), Malang Ngum (order Odonata), Peung (*Apis* spp. : Apidae), Tior and Tan (*Vespa* spp. : Vespidae). Some species was consumed in both immature and adult, such as Malang Da Na (*Lethocerus indicus* : Belostomatidae), Muan Lam Yai (*Tesseraatoma javanica* : Pentatomidae) Chuck-a-Chun (*Dundubia intemerata* : Cicadidae), Mallang Kra Chom (*Gryllotalpa africana* : Gryllotalpidae), Jing Riid (*Gryllus bimaculatus* : Gryllidae), Tak Kra Tan Nuat Yao (*Pseudophyllus titan* : Tettigoniidae), and Tak Kra Tan Nuat San (*Patanga succincta* : Acrididae). The larvae and pupa stages of *Vespa* and *Apis* species were used as food while larvae, pupa, and adult stages of Mod Daeng (*Oecophylla smaragdina* : Formicidae) were found to be edible.

Table 12 List of edible insects at the project areas.

No.	Thai Common Name	Scientific Name	Family	Order	Stage for cooking	Remarks
1	Malang Thub	<i>Sternocera rugicornis</i>	Buprestidae	Coleoptera	Adult	
2	Malang Khom Tong	<i>Hypomeces squamosus</i>	Curculionidae	Coleoptera	Adult	
3	Duang Ma Praow	<i>Rhynchophorus ferrugineus</i>	Curculionidae	Coleoptera	Larvae	
4	Duang Nuatyao	<i>Aristobia approximata</i>	Cerambycidae	Coleoptera	Adult	
5	Malang Kok	<i>Batocera rubra</i>	Cerambycidae	Coleoptera	Adult	
6	Malang Tab Tao	<i>Cybister limbatus</i>	Dytiscidae	Coleoptera	Larvae, adult	
7	Malang Niang	<i>Hydrous cavistanum</i>	Hydrophilidae	Coleoptera	Adult	
8	Malang Gudjee	<i>Copris nevinsoni</i>	Scarabaeidae	Coleoptera	Adult	
9	Malang Gudjee	<i>Paragymnopleurus aethiops</i>	Scarabaeidae	Coleoptera	Adult	
10	Malang Gudjee	<i>Helicopris bucephalus</i>	Scarabaeidae	Coleoptera	Adult	
11	Malang Gudjee	<i>Helicopris dominus</i>	Scarabaeidae	Coleoptera	Adult	
12	Malang Kinoon Daeng	<i>Holotrichia</i> sp.	Scarabaeidae	Coleoptera	Adult	
13	Malang Ginoon Khiaw	<i>Anomala cupriper</i>	Scarabaeidae	Coleoptera	Adult	
14	Malang Krarm	<i>Xylotrupes gideon</i>	Scarabaeidae	Coleoptera	Adult	
15	Malang Dana	<i>Lethocerus indicus</i>	Belostomatidae	Hemiptera	Immature, adult	
16	Malang Khan-so	<i>Laccotrepes ruber</i>	Nepidae	Hemiptera	Immature, adult	
17	Muan Lam Yai	<i>Tessaratoma javanica</i>	Pentatomidae	Hemiptera	Immature, adult	
18	Chuck-a-Chun	<i>Meimuna</i> sp.	Cicadidae	Hemiptera	Immature, adult	
19	Chuck-a-Chun	<i>Pompania</i> sp.	Cicadidae	Hemiptera	Immature, adult	
20	Chuck-a-Chun	<i>Dundubia intemerata</i>	Cicadidae	Hemiptera	Immature, adult	
21	Muan Won	<i>Anisops</i> sp.	Notonectidae	Hemiptera	Immature, adult	

Table 12 List of edible insects at the project areas (cont.)

No.	Thai Common Name	Scientific Name	Family	Order	Stage for cooking	Remarks
22	Peung Luang	<i>Apis dorsata</i>	Apidae	Hymenoptera	Larva, pupa	
23	Peung	<i>Apis florea</i>	Apidae	Hymenoptera	Larva, pupa	
24	Mod Daeng	<i>Oecophylla smaragdina</i>	Formicidae	Hymenoptera	Larva, pupa, adult	
25	Thor	<i>Vespa tropica</i>	Vespidae	Hymenoptera	Larva, pupa	
26	Thor	<i>Vespa affinis</i>	Vespidae	Hymenoptera	Larva, pupa	
27	Tan	<i>Polistes stigma</i>	Vespidae	Hymenoptera	Larva, pupa	
28	Malang Mauw	<i>Macrotermes</i> sp.	Termitidae	Isoptera	Adult	
29	Malang Mauw	<i>Termes</i> sp.	Termitidae	Isoptera	Adult	
30	Takka Tan Tam Khao	<i>Hierdula</i> sp.	Mantidae	Mantodea	Adult	
31	Malang Ngum	<i>Crocothemis servilia</i>	Libellulidae	Odonata	Immature	
32	Malang Ngum	<i>Neurothemis fulvia</i>	Libellulidae	Odonata	Immature	
33	Malang Ngum	<i>Orthetrum sabina</i>	Libellulidae	Odonata	Immature	
34	Malang Ngum	<i>Orthetrum triangulare</i>	Libellulidae	Odonata	Immature	
35	Malang Ngum	<i>Diplacodes trivialis</i>	Libellulidae	Odonata	Immature	
36	Malang Ngum	<i>Aethriamanta brevipennis</i>	Libellulidae	Odonata	Immature	
37	Malang Ngum	<i>Anax guttatus</i>	Aeshnidae	Odonata	Immature	
38	Malang Kra Chon	<i>Gryllotalpa africana</i>	Gryllotalpidae	Orthoptera	Immature, adult	
39	Jing Kong	<i>Brachytrupes portentosus</i>	Gryllidae	Orthoptera	Immature, adult	
40	Jing Riid	<i>Acheta testacea</i>	Gryllidae	Orthoptera	Immature, adult	
41	Jing Riid	<i>Acheta confirmata</i>	Gryllidae	Orthoptera	Immature, adult	
42	Jing Riid	<i>Gryllus bimaculatus</i>	Gryllidae	Orthoptera	Immature, adult	

Table 12 List of edible insects at the project areas (cont.)

No.	Thai Common Name	Scientific Name	Family	Order	Stage for cooking	Remarks
43	Tak Kra Tan Nuat Yao	<i>Pseudophyllus titan</i>	Tettigoniidae	Orthoptera	Immature, adult	
44	Tak Kra Tan Nuat Yao	<i>Euconocephalus</i> sp.	Tettigoniidae	Orthoptera	Immature, adult	
45	Tak Kra Tan Nuat San	<i>Patanga succincta</i>	Acrididae	Orthoptera	Immature, adult	
46	Tak Kra Tan Nuat San	<i>Acrida willemsei</i>	Acrididae	Orthoptera	Immature, adult	
47	Tak Kra Tan Nuat San	<i>Chondracris roseaapbrunner</i>	Acrididae	Orthoptera	Immature, adult	
48	Tak Kra Tan Nuat San	<i>Ducetia japonica</i>	Acrididae	Orthoptera	Immature, adult	

4.3.1 Some Economic Insect Groups

In this study, some species were very common to be consumed and sold in the market, for example:

1) Mod Daeng (*Oecophylla smaragdina*). Local people like larvae, pupa, and adult stages of the Mod Daeng to be known as Khai-Mod-Daeng or Egg (larvae and pupa) and Tug-Peng (young female). This species was abundant in the over. The workers of ant built the nest in large-leafed trees such as mango by pulling the leaves to gether and gluing them, sometimes may as large as a football. The eggs “immature stage” were produced from the end of December to April and villagers sell mod daeng and their eggs dialy during this period. Collected nest was placed in a bucket of water to couse the worker ants float while the eggs and adults sink to the bottom. To remove the worker ants, a piece of cloth was used to stir through the water. Nests in high trees will be dislodged first by using a long bamboo pole.

The eggs and adults (worker and young female) were eaten by cooking and uncooking. They could be consumed within variety ways like made into salad, flied with eggs, put into bamboo shoot soup, or curried fish wrapped in banana leaves, etc. Analytical results record what will be contained per 100 g of insect : kcal 493, moisture 22%, protein 24.1 g, fat 42.2 g, carbohydrate 4.3 g, fiber 4.6 g, ash 2.8 g, calcium 40 mg, phosphorus 230 g, iron 10.4 mg, vitamin A 710 I.U., B₁ 0.22 mg, B₂ 1.13 mg, and niacin 5.7 mg.

2) Tak Kra Tan Nuat San or short-horned grasshoppers (F. Acrididae). Many species were consumed as popular dishes in Thailand. They were caught by hands with head and wings were removed when eaten. They could then be cooked by stir-fried, used in curry as a meat-sub stitute, or made into a spicy sauce. Deep-fried, crispy grasshoppers were very well-liked by a lot of people. They were eaten like shrimps, and sold everywhere with relatively high price.

3) Jing Kong or Jing Riid or cricket (F. Gryllidae). People consumed several kinds of crickets : *Brachytruper portentosus*, known as jee-pom or jing-konorjing-reed-hua-to, *Grylluss bimarculatus*, *Achetatestacea*, *A. confirmate*, to be known as jing-reed. These crickets were considered to have a rich of flavor. It was well edible, having a taste somewhat similar to shrimp. The season for crickets harvesting was in the middle of the rainy season and the beginning of winter. Between July and December, villagers sold crickets in the markets. The crickets stayed in their tunnels, which were about one foot dept, during the day and come out at night. They

consumed young plants and were accounted to be agricultural pests. Villagers used shovels to dig the crickets from the ground. There was usually one cricket per hole. The crickets may be eaten as a whole or cut into small pieces. They were fried, roasted on sticks over a fire, grilled or put into curry as a substitute for meat.

4) Malang-gra-chawn or mole cricket (F. Gryllotalpidae). The mole cricket lives in the soil and occasionally fled into house at night. The season for finding mole crickets was rainy season. They were caught and prepared similarly to crickets.

5) Malang-da-na or giant water bugs (F. Belostomatidae). The bugs are about three inches long with males are generally smaller and have a stronger odor. They live in swamps and rice paddies. During the rainy season, they come out of water and will be attracted by lights especially to blue neon light. Fishing nets are also used to harvest them from swamps and ponds. They are very popular food and available nearly all year. There are many methods for dishes preparation including roasting, steaming and grilling before soaking in fish sauce.

The male, after a grilling to increase his flavour and removing his wings, will be best for crushing into mortar to make chili sauce, known as Nam Prik Malang Da.

4.3.2 Methods of Cooking

The cooking methods for insects are not different from those used for other foods. Most popular for the different insect groups will be:

1) Frying / frittering

Deep-frying is the main technique used to prepare locusts, crickets, and beetles which are so popular and expensive dish in urban areas. Cricket, locust, and giant water bug fritters are also one of the most common dishes sold in urban restaurants and as street foods in large markets across the country.

2) Roasting

It is the most common method for all insects except bees and wasps.

3) Smoked

Some insects are used this method, including bees and wasps.

4) Baking / barbecuing

This may be used to cook crickets and giant water bugs.

5. Summary

Most insects species were very common in the project areas. 187 species belongs to 130 genera, 45 families, and 9 orders were collected. Interesting species were the metallic beetle (*Sternocera ruficornis*) and the red ant (*Oecophylla smaragdina*). Most insects were found in MDF, DDF and DEF respectively. The highest number of species was seen in Pha Taem National Park, followed by Phu Jong-Na Yoi National Park, Yod Dom Wildlife Sanctuary, Bun Thrik-Yod Mon proposed Wildlife Sanctuary, and Kaeng Tana National Park respectively. The most found insect pollinators were butterflies and moths which they distributed in MDF, DDF, and DEF of the project areas. 48 species of all species found in the project areas were classified to be the edible insects. Tak Kra Tan Nuat San, Malang-gra-chawn, Jing Kong, and Malang-da-na were very popular food for local communities. Degradation of the insect pollinators and the edible insects may come from the intensive land utilization, collecting edible insects, illegal logging, and excessive application of insecticides in the buffer zone or near the project areas. Basic knowledge of benific and harmful insects should supported to local communities, including training and practice.

Recommendation

1. There are many insect species which have not yet collected in the areas, especially in the wet season. In general, most insects present during the rainy season, so that should be considered for collection.
2. It should develop some edible insects which is high potential to make farm for local communities living around the project areas to get income such as the red ant (*Oecophylla smaragdina*), Tak Kra Tan Nuat San (*Patanga succincta*), Malang Kra Chon (*Gryllotalpa africana*) and Malang Dana (*Lethocerus indicus*). These insects are popular for Thai people in both cooking and selling in the markets.
3. The insects play very important roles to maintain the forest ecosystem. It should be investigated in ecology and management of insects for using them to maintain ecosystem in the project areas. There has still little knowledge in this cases in the project areas.
4. Due to there have many insect pests living in the project area, if the forests are disturbed or destroyed, these insects will move from the forest to agricultural area. Protection or conservation these forests, and explain information about insect pests to local communities living around areas, will be nescessary to maintain the area diversity.

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