

APPENDIX 13.7 BUTTERFLIES

Appendix 13.7.1. Butterfly species recorded in the Study Area in this and/or previous studies. Where study boundaries of previous studies extended beyond the current study area boundary, only records from within the area covered by this study are included. Note that for some sources, lists are incomplete and/or only some records are attributed to a specific locality.

Species	Conservation and Protection Status ¹	Habitat Utilised ²	NENT Study - KTN ³	Bascombe (1993) - KTN ⁴	Present Study - KTN	AFCD Biodiversity Database 2002 to June 2012 - KTN	NENT Study - FLN ³	Present Study - FLN	AFCD Biodiversity Database 2002 to June 2012 - FLN	Other Studies ⁵
Bush Hopper <i>Ampittia dioscorides</i>	-	Freshwater wetlands, abandoned paddy fields		Y		Y		Y	Y	
Forest Hopper <i>Astictopterus jama</i>	-	Grass by country trails			Y				Y	
Paintbrush Swift <i>Baoris farri</i>	-	Bamboo groves		Y						Y
Formosan Swift <i>Borbo cinnara</i>	-	Grasslands, abandoned agricultural lands		[Y]		Y			Y	
Colon Swift <i>Caltoris bromus</i>	-	(not stated)		Y#						
Dark Swift <i>Caltoris cahira</i>	-	Bamboo groves		Y#						
Banana Skipper <i>Erionota torus</i>	-	Banana groves			Y			Y		
Dark Brown Ace <i>Halpe porus</i>	LC	Bamboo groves; very rare with scattered records		Y#						
Tree Flitter <i>Hyarotis adrastus</i>	-	Forests		Y					Y	
Chestnut Bob <i>Iambrix salsala</i>	-	Near grass on forest fringes		Y	Y					
Common Redeye <i>Matapa aria</i>	-	Bamboo groves (including those in urban area)		Y	Y					
Unidentified Swift	-	-						Y		
Oriental Straight Swift <i>Parnara bada</i>	-	Open grassland, abandoned paddy fields		Y		Y				
Rare Swift <i>Parnara ganga</i>	-	Open grassland, abandoned		Y	Y	Y			Y	

Species	Conservation and Protection Status ¹	Habitat Utilised ²	NENT Study - KTN ³	Bascombe (1993) - KTN ⁴	Present Study - KTN	AFCD Biodiversity Database 2002 to June 2012 - KTN	NENT Study - FLN ³	Present Study - FLN	AFCD Biodiversity Database 2002 to June 2012 - FLN	Other Studies ⁵
		paddy fields								
Common Straight Swift <i>Parnara guttata</i>	-	Open grassland, abandoned paddy fields		Y		Y			Y	Y
Little Branded Swift <i>Pelopidas agna</i>	-	Open grasslands, shrublands, abandoned fields		Y#						
Conjoined Swift <i>Pelopidas conjunctus</i>	-	Shaded areas		[Y]	Y			Y		
Small Branded Swift <i>Pelopidas mathias</i>	-	Open grasslands, shrublands, abandoned fields						Y	Y	
Contiguous Swift <i>Polytremis lubricans</i>	-	Grasslands		Y	Y	Y		Y	Y	
Potanthus sp. Potanthus sp.	LC*	Abandoned fields, grasslands			Y					
Chinese Dart <i>Potanthus confucius</i>	-	Abandoned fields, grasslands		Y		Y				
Common Dart <i>Potanthus pseudomaesa</i>	LC	Abandoned fields, grasslands		Y#						
Lesser Band Dart <i>Potanthus trachala</i>	-	Abandoned fields, grasslands		Y#						
Indian Palm Bob <i>Suastus gremius</i>	-	Urban areas			Y					
Greenish Palm Dart <i>Telicota ancilla</i>	-	Abandoned exposed grasslands, shrublands		Y		Y				
Hainan Palm Dart <i>Telicota besta</i>	LC	Abandoned exposed grasslands, shrublands		Y#						
Pale Palm Dart <i>Telicota colon</i>	LC	Abandoned exposed grasslands, shrublands						Y		Y

Species	Conservation and Protection Status ¹	Habitat Utilised ²	NENT Study - KTN ³	Bascombe (1993) - KTN ⁴	Present Study - KTN	AFCD Biodiversity Database 2002 to June 2012 - KTN	NENT Study - FLN ³	Present Study - FLN	AFCD Biodiversity Database 2002 to June 2012 - FLN	Other Studies ⁵
Dark Palm Dart <i>Telicota ohara</i>	-	Abandoned exposed grasslands, shrublands		Y		Y				
Grass Demon <i>Udaspes folus</i>	-	Caterpillar: feeds on leaves of Zingiberaceae; Adult: <i>Hedychium coronarioim</i> bushes			Y				Y	
Spotted Angle <i>Caprona alida</i>	LC	Only near coastal shrubs; local rare skipper								Y
White-banded Flat <i>Gerosia phisara</i>	-	Well-vegetated areas		Y#						
Chestnut Angle <i>Odontoptilum angulatum</i>	-	Forests		Y	Y			Y		
Water Snow Flat <i>Tagiades litigiousus</i>	-	Woodlands		Y#						
Purple Sapphire <i>Heliophorus epicles</i>	-	Abandoned fields, woodside areas	Y	[Y]		Y			Y	
Lesser Forest Blue <i>Taraka hamada</i>	LC	Bamboo groves (with aphids infestation)		Y#						
Common Hedge Blue <i>Acytolepis puspa</i>	-	Woodsides	Y	Y	Y		Y	Y		
Forget-me-not <i>Catochrysops strabo</i>	-	Near shrubs, wastelands		Y#						
Lime Blue <i>Chilades lajus</i>	-	Coastal woodland edges	Y	Y			Y			
Gram Blue <i>Euchrysops cnejus</i>	-	Near shrubs, abandoned fields		Y	Y	Y		Y		
Tailed Cupid <i>Everes lacturnus</i>	-	Near shrubs, abandoned agricultural fields		Y	Y	Y		Y		
Small Grass Blue	-	Hillside		Y#						

Species	Conservation and Protection Status ¹	Habitat Utilised ²	NENT Study - KTN ³	Bascombe (1993) - KTN ⁴	Present Study - KTN	AFCD Biodiversity Database 2002 to June 2012 - KTN	NENT Study - FLN ³	Present Study - FLN	AFCD Biodiversity Database 2002 to June 2012 - FLN	Other Studies ⁵
<i>Famegana alsulus</i>		grasslands, abandoned agricultural fields								
Dark Cerulean <i>Jamides bochus</i>	-	Woodlands							Y	
Long-tailed Blue <i>Lampides boeticus</i>	-	Shrublands, wastelands	Y	Y	Y	Y	Y	Y	Y	Y
Transparent 6-line Blue <i>Nacaduba kurava</i>	-	Woodland edge, forests			Y					
Quaker <i>Neopithecops zalmora</i>	-	Shaded shrublands, forests		Y	Y					
Grass Blue Species	-	-			Y					
Pale Grass Blue <i>Pseudozizeeria maha</i>	-	Urban parks	Y	Y	Y	Y	Y	Y	Y	Y
Pale Hedge Blue <i>Udara dilecta</i>	LC	Numerous specimens seen forests of the central New Territories (in 2005 spring); once considered rare			Y					
Dark Grass Blue <i>Zizeeria karsandra</i>	-	Shrublands, abandoned agricultural fields			Y					
Lesser Grass Blue <i>Zizina otis</i>	-	Shrublands, abandoned agricultural fields	Y	Y	Y		Y			Y
Cornelian <i>Deudorix epijarbas</i>	-	Woodlands, near orchards		Y#						
Brown Onyx <i>Horaga albimacula</i>	LC	Information of the habitat utilisation is limited; no local sighting for many years		Y#						
Common Onyx <i>Horaga onyx</i>	-	Forests		Y	Y					
Silver Streak Blue <i>Iraota timoleon</i>	-	Woodlands			Y					

Species	Conservation and Protection Status ¹	Habitat Utilised ²	NENT Study - KTN ³	Bascombe (1993) - KTN ⁴	Present Study - KTN	AFCD Biodiversity Database 2002 to June 2012 - KTN	NENT Study - FLN ³	Present Study - FLN	AFCD Biodiversity Database 2002 to June 2012 - FLN	Other Studies ⁵
Slate Flash <i>Rapala manea</i>	-	Woodside areas		[Y]	Y	Y				
Chocolate Royal <i>Remelana jangala</i>	-	Woodlands, near shrubs		Y		Y				
Long-banded Silverline <i>Spindasis lohita</i>	-	Woodside areas, near shrubs		Y				Y		
Club Silverline <i>Spindasis syama</i>	-	Woodland edges, near shrubs		[Y]#						
Peacock Royal <i>Tajuria cippus</i>	LC	Forests, citrus orchards			Y					Y
Plum Judy <i>Abisara echerius</i>	-	Shrubs, grasslands	Y	Y	Y			Y		
Punchinello <i>Zemeros flegyas</i>	-	Shrubs, grasslands		Y	Y			Y	Y	
Common Pierrot <i>Castalius rosimon</i>	LC	Coastal shrublands, wastelands; absent in Hong Kong for many years		Y#						
Common Duffer <i>Discophora sondaica</i>	-	Near bamboo groves		Y#						
Large Faun <i>Faunis eumeus</i>	-	Forest understories	Y	Y	Y	Y	Y	Y		Y
Tawny Rajah <i>Charaxes bernardus</i>	-	Woodlands		Y	Y	Y			Y	Y
Common Nawab <i>Polyura athamas</i>	-	Forests		Y	Y					
Plain Tiger <i>Danaus chrysippus</i>	-	Near its host plants			Y					Y
Common Tiger <i>Danaus genutia</i>	-	Found in all sorts of habitats	Y	Y	Y	Y			Y	
Common Indian Crow <i>Euploea core</i>	-	City parks, near host plants of its larvae (<i>Nerium oleander</i>)	Y	Y	Y	Y	Y			
Blue-spotted Crow <i>Euploea midamus</i>	-	Bushes of <i>Ageratum conyzoides</i>	Y	Y	Y	Y	Y	Y		
Ceylon Blue Glassy Tiger <i>Ideopsis similis</i>	-	All sorts of habitats; males	Y	Y	Y	Y	Y	Y	Y	

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		likes to sip the nectar of trailside <i>Ageratum conyzoides</i>								
Glassy Tiger <i>Parantica aglea</i>	-	Forests, woodside areas; males feeds on the nectar of roadside <i>Ageratum conyzoides</i>		Y	Y					
Blue Tiger <i>Tirumala limniace</i>	-	Woodside areas; males sip the nectar of trailside <i>Ageratum conyzoides</i>		Y#						
Indian Fritillary <i>Argyreus hyperbius</i>	-	Males occur at hilltops, females occur in lowlands		Y	Y				Y	
Angled Castor <i>Ariadne ariadne</i>	-	Near host plant <i>Ricinus communis</i>	Y	Y	Y	Y		Y	Y	Y
Colour Sergeant <i>Athyma nefte</i>	-	Woodside areas, near shrubs; males congregate at summits	Y	Y		Y		Y		
Common Sergeant <i>Athyma perius</i>	-	Near shrubs; males occur in uplands	Y	Y	Y	Y	Y			
Staff Sergeant <i>Athyma selenophora</i>	-	Woodside areas		Y	Y	Y				
Rustic <i>Cupha erymanthis</i>	-	Woodland edges	Y	Y	Y	Y		Y	Y	
Common Mapwing <i>Cyrestis thyodamas</i>	-	Along country trails; males congregate on wet surfaces to puddle			Y	Y		Y		Y
Gaudy Baron <i>Euthalia lubentina</i>	-	Woodside areas; females occur near the		Y	Y					

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		host plants (<i>Macrosolen cochinchinensis</i> , <i>Scurrula parasitica</i> and <i>Taxillus chinensis</i>) of its larvae								
White-edged Blue Baron <i>Euthalia phemius</i>	-	Woodside areas, near village	Y	Y	Y		Y	Y		Y
Red-ring Skirt <i>Hestina assimilis</i>	-	Woodside areas; males congregate at summits		Y	Y	Y		Y	Y	
Great Egg-fly <i>Hypolimnas bolina</i>	-	Woodside areas, near shrubs	Y	Y	Y	Y	Y	Y	Y	Y
Danaid Egg-fly <i>Hypolimnas misippus</i>	LC	Agricultural land, fish ponds			Y					Y
Peacock Pansy <i>Junonia almana</i>	-	Grasslands, abandoned paddy fields	Y	Y	Y		Y	Y	Y	Y
Grey Pansy <i>Junonia atlites</i>	-	Abandoned paddy fields, freshwater wetlands	Y	Y	Y	Y		Y	Y	Y
Chocolate Pansy <i>Junonia iphita</i>	-	Along woodland trails							Y	
Lemon Pansy <i>Junonia lemonias</i>	-	Shrublands, woodside areas, occasionally occurs in abandoned paddy fields	Y	Y			Y	Y		
Blue Pansy <i>Junonia orithya</i>		Dry grassland; more common in fall		Y#						
Blue Admiral <i>Kaniska canace</i>	-	Shrublands, along woodland trails		Y	Y				Y	
Commander <i>Moduza procris</i>	LC	Shrublands, woodside areas near the			Y			Y		

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		host plants (<i>Uncaria hirsuta</i>) of its larvae								
Common Sailer <i>Neptis hylas</i>	-	Woodside areas, near shrubs		Y	Y	Y		Y	Y	
Common Lascar <i>Pantoporia hordonia</i>	-	Woodside, shaded areas		Y#						
Five-dot Sergeant <i>Parathyma sulphita</i>	-	Woodside areas		Y	Y					
Short-banded Sailer <i>Phaedyra columella</i>	-	Woodside areas		Y					Y	
Common Leopard <i>Phalanta phalantha</i>	-	Shrublands, gardens with weeping willows		Y	Y					
Black Prince <i>Rohana parisatis</i>	-	Woodlands	Y	Y	Y	Y	Y			
Common Jester <i>Symbrenthia lilaea</i>	-	Forests, woodside areas			Y					
Vagrant <i>Vagrans egista</i>	LC	Forests, woodland edges; very rare in Hong Kong		[Y]#						
Painted Lady <i>Vanessa cardui</i>	LC	Uplands, ridges; mainly occurs in fall and winter			Y					
Indian Red Admiral <i>Vanessa indica</i>	-	Males occurs at hilltops, females occurs in abandoned farmland near rural villages								Y
Common Palmfly <i>Elymnias hypermnestra</i>	-	Woodland edges, urban parks; larvae utilising Palmaceae as food plants			Y	Y		Y		
Banded Tree Brown <i>Lethe confusa</i>	-	Woodland edges	Y				Y	Y		

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Bamboo Tree Brown <i>Lethe europa</i>	-	Bamboo groves, woodland		Y	Y					
Common Tree Brown <i>Lethe rohria</i>	-	Woodland edges		Y#						
Common Evening Brown <i>Melanitis leda</i>	-	Forests		Y	Y	Y				Y
Dark Evening Brown <i>Melanitis phedima</i>	-	Shaded places		Y	Y	Y		Y	Y	
Dark-brand Bush Brown <i>Mycalesis mineus</i>	-	Shaded areas	Y	Y	Y	Y	Y	Y	Y	Y
South China Bush Brown <i>Mycalesis zonata</i>	-	Shaded areas		Y#						
Muirhead's Labyrinth <i>Neope muirheadii</i>	-	Woodland areas, bamboo groves		Y#						
Common Five-ring <i>Ypthima baldus</i>	-	Woodland edges, shrublands, grasslands		Y	Y	Y		Y	Y	Y
Straight Five-ring <i>Ypthima lisandra</i>	-	Woodland edges, shrublands, grasslands	Y	Y	Y	Y	Y			
Small Three-ring <i>Ypthima norma</i>	LC	Unsheltered grass slopes			Y					Y
Common Mime <i>Chilasa clytia</i>	-	Woodside areas, shrublands	Y	Y	Y	Y	Y	Y		Y
Tailed Jay <i>Graphium agamemnon</i>	-	Woodland		Y	Y	Y		Y		
Common Jay <i>Graphium doson</i>	-	Forests		Y	Y	Y		Y		
Common Bluebottle <i>Graphium sarpedon</i>	-	Forests	Y	Y	Y	Y	Y	Y	Y	Y
Common Rose <i>Pachliopta aristolochiae</i>	-	Shrublands, woodland, near host plants (<i>Aristolochia fordiana</i> and <i>Aristolochia tagala</i>) of the caterpillar		Y#						
Chinese Peacock	-	Densely		Y	Y	Y				

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<i>Papilio bianor</i>		vegetated forests								
Lime Butterfly <i>Papilio demoleus</i>	-	Open grasslands, shrublands	Y	Y	Y	Y	Y	Y		Y
Red Helen <i>Papilio helenus</i>	-	Woodside areas, citrus orchards, urban parks	Y	Y	Y			Y		Y
Great Mormon <i>Papilio memnon</i>	-	Woodland, citrus orchards, urban park	Y	Y	Y	Y		Y	Y	
Paris Peacock <i>Papilio paris</i>	-	Woodside areas	Y	Y	Y	Y	Y	Y	Y	
Common Mormon <i>Papilio polytes</i>	-	Forest edge, citrus orchards	Y	Y	Y	Y	Y	Y	Y	Y
Spangle <i>Papilio protenor</i>	-	Woodside areas, citrus orchards		Y	Y	Y		Y	Y	
Swallowtail <i>Papilio xuthus</i>	-	Woodside areas, shrublands		[Y]	Y	Y				
Five-bar Swordtail <i>Pathysa antiphates</i>	-	Woodside areas, shrublands		Y	Y					
Common Birdwing <i>Troides helena</i>	Cap.170, Appendix II in CITES	Near the host plant (<i>Aristolochia tagala</i>) of the caterpillar		[Y]#						
Lemon Emigrant <i>Catopsilia pomona</i>	-	Shrubs, urban parks	Y	Y	Y	Y	Y	Y	Y	Y
Mottled Emigrant <i>Catopsilia pyranthe</i>	-	Shrublands, urban parks		Y	Y	Y			Y	Y
Grass Yellow Species <i>Euerma sp.</i>	-	-			Y			Y		
Three-spot Grass Yellow <i>Eurema blanda</i>	-	Woodside areas, shrublands, city parks			Y					
Small Grass Yellow <i>Eurema brigitta</i>	LC	Near shrubs, abandoned agricultural lands (stay		Y#						

Species	Conservation and Protection Status ¹	Habitat Utilised ²	NENT Study - KTN ³	Bascombe (1993) - KTN ⁴	Present Study - KTN	AFCD Biodiversity Database 2002 to June 2012 - KTN	NENT Study - FLN ³	Present Study - FLN	AFCD Biodiversity Database 2002 to June 2012 - FLN	Other Studies ⁵
		close to host plant <i>Cassia mimosoides</i>)								
Common Grass Yellow <i>Eurema hecabe</i>	-	Various habitats		Y	Y	Y		Y	Y	Y
Common Gull <i>Cepora nerissa</i>	-	Woodlands, shrublands, abandoned agricultural lands						Y		
Red-base Jezebel <i>Delias pasithoe</i>	-	Areas with flowering plants	Y	Y	Y	Y	Y	Y	Y	Y
Great Orange Tip <i>Hebomoia glaucippe</i>	-	Woodlands and shrublands that near the host plants		Y	Y	Y		Y	Y	
Indian Cabbage White <i>Pieris canidia</i>	-	Near vegetable fields (caterpillar feed on family Cruciferae)	Y	Y	Y	Y	Y	Y	Y	Y
Small Cabbage White <i>Pieris rapae</i>	-	Near vegetable fields (caterpillar feed on family Cruciferae)	Y	Y	Y	Y				

Note:

- Conservation status refers to Cap. 170, <http://www.sepa.gov.cn>, UNEP-WCMC (2012), Fellowes *et al.* (2002) and IUCN (2013)
 - Cap. 170 = Chapter 170 Wild Animals Protection Ordinance
 - Conservation Status by Fellowes *et al.* (2002): LC = Local Concern.
- Lo, P.Y.F., Hui, W.L. 2010. Hong Kong Butterflies. Friends of the Country Parks and Cosmos Books Ltd. Hong Kong.
- Maunsell (2003).
- Sources: Maunsell (1997), Maunsell (2003) and HKU Biodiversity Database.
- Arup (2010), Atkins (2010), Binnie, Black and Veatch (2002), Dudgeon and Corlett (2001), Maunsell (1997), Mott Macdonald (2010 & 2012), field survey data from Agreement No. CE/2008 (CE). Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation.

Key:

- * = Common Dart *Potanthus pseudomaesa* is of Local Concern (Fellowes *et al.*, 2002).
^ = Small Grass Yellow *Eurema brigitta* is of Local Concern (Fellowes *et al.*, 2002).
Y = Species recorded in the corresponding study.
= Recorded by Bascombe (1993) but not since.
[Y] = Records listed in Maunsell (1997)/ Maunsell (2003) but no record from Study Area found in HKU Biodiversity Database and/or listed by Maunsell (1997)/Maunsell (2003) as only from Beas River.

Appendix 13.7.2. Mean and maximum numbers of butterflies recorded in systematic surveys in the Kwu Tung North NDA and observations during further surveys for this study (where no mean is shown, observations are from the further surveys).

Species	Conservation Status ¹	Hong Kong Status (Chan <i>et al.</i> 2011) ²	Habitat Type ³														
			WA	DA	PO	MA	MW	NS	CS	GR/SWG	SH	FSW/SecW	OR	PL/MP	VA	WG	UR
Forest Hopper <i>Astictopterus jama</i>	-	C										0.5(1)					
Banana Skipper <i>Erionota torus</i>	-	UC		0.2(1)										#			
Chestnut Bob <i>Iambrix salsala</i>	-	UC										0.7(2)					
Common Redeye <i>Matapa aria</i>	-	UC									0.2(1)						
Rare Swift <i>Parnara garga</i>	-	UC				√											
Conjoined Swift <i>Pelopidas conjunctus</i>	-	R									0.2(1)						
Contiguous Swift <i>Polytremis lubricans</i>	-	C				√					0.3(2)					0.2(1)	
Potanthus sp. <i>Potanthus sp.</i>	LC*	-										0.2(1)					
Indian Palm Bob <i>Suastus gremius</i>	-	UC										0.2(1)					
Grass Demon <i>Udaspes folus</i>	-	R							√					0.2(1)			
Chestnut Angle <i>Odontoptilum angulatum</i>	-	C									0.2(1)	0.2(1)					
Common Hedge Blue <i>Acytolepis puspa</i>	-	C	0.2(1)	0.3(2)		√					1.7(6)	0.2(1)		0.3(1)		0.3(2)	
Gram Blue <i>Euchrysops cnejus</i>	-	UC									0.2(1)						
Tailed Cupid <i>Everes lactumus</i>	-	C								0.2(1)	0.3(2)				0.2(1)		
Long-tailed Blue <i>Lampides boeticus</i>	-	C														0.2(1)	
Transparent 6-line Blue <i>Nacaduba kurava</i>	-	C										0.2(1)					
Quaker <i>Neopithecops zalmora</i>	-	UC										0.3(2)		0.3(2)			
Grass Blue Species	-	-		(1)													
Pale Grass Blue <i>Pseudozizeeria maha</i>	-	VC	0.2(1)	1.5(5)	0.2(1)	√		√		0.8(2)	0.7(2)	2.3(5)		2.2(9)	2.5(8)	0.8(3)	
Pale Hedge Blue <i>Udara dilecta</i>	LC	VR		0.2(1)													

Species	Conservation Status ¹	Hong Kong Status (Chan et al. 2011) ²	Habitat Type ³														
			WA	DA	PO	MA	MW	NS	CS	GR/SWG	SH	FSW/SecW	OR	PL/MP	VA	WG	UR
Dark Grass Blue <i>Zizeeria karsandra</i>	-	UC													0.5(2)		
Lesser Grass Blue <i>Zizina otis</i>	-	C													0.2(1)		
Common Onyx <i>Horaga onyx</i>	-	R									0.2(1)						
Silver Streak Blue <i>Iraota timoleon</i>	-	UC													0.2(1)		
Slate Flash <i>Rapala manea</i>	-	C										0.2(1)					
Peacock Royal <i>Tajuria cippus</i>	LC	R												0.2(1)			
Plum Judy <i>Abisara echerius</i>	-	VC									0.8(2)	0.3(1)			0.2(1)		
Punchinello <i>Zemeros flegyas</i>	-	C										0.2(1)					
Large Faun <i>Faunis eumeus</i>	-	C									0.3(2)	0.2(1)		(2)			
Tawny Rajah <i>Charaxes bernardus</i>	-	C									0.5(1)	0.2(1)	√	0.2(1)			
Common Nawab <i>Polyura athamas</i>	-	UC										√					
Plain Tiger <i>Danaus chrysippus</i>	-	UC	0.2(1)														
Common Tiger <i>Danaus genutia</i>	-	C									0.2(1)					0.2(1)	
Common Indian Crow <i>Euploea core</i>	-	C								0.2(1)	0.2(1)						
Blue-spotted Crow <i>Euploea midamus</i>	-	VC										2.0(12)	√				
Ceylon Blue Glassy Tiger <i>Ideopsis similis</i>	-	VC									0.2(1)	√					
Glassy Tiger <i>Parantica aglea</i>	-	C									0.7(3)						
Indian Fritillary <i>Argyreus hyperbius</i>	-	C									0.2(1)						
Angled Castor <i>Ariadne ariadne</i>	-	C	0.2(1)		0.2(1)	√				0.2(1)		√		0.3(2)	0.3(2)	0.3(2)	
Common Sergeant <i>Athyma perius</i>	-	UC									0.5(2)			0.2(1)			
Staff Sergeant <i>Athyma selenophora</i>	-	C									0.2(1)	√					
Rustic <i>Cupha erymanthis</i>	-	VC									0.2(1)						
Common Mapwing	-	C									0.2(1)	0.7(2)					

Species	Conservation Status ¹	Hong Kong Status (Chan et al. 2011) ²	Habitat Type ³														
			WA	DA	PO	MA	MW	NS	CS	GR/SWG	SH	FSW/SecW	OR	PL/MP	VA	WG	UR
<i>Cyrestis thyodamas</i>																	
Gaudy Baron <i>Euthalia lubentina</i>	-	UC									0.2(1)						
White-edged Blue Baron <i>Euthalia phemius</i>	-	C		0.2(1)		√		0.2(1)			0.3(1)	√		0.2(1)			
Red-ring Skirt <i>Hestina assimilis</i>	-	C							√		0.5(1)	0.2(1)			0.2(1)		
Great Egg-fly <i>Hypolimnias bolina</i>	-	C	0.8(5)	1.0(4)		√		√		0.5(2)	1.8(4)	0.7(2)		2.3(5)	1.2(4)	0.5(2)	0.2(1)
Danaid Egg-fly <i>Hypolimnias misippus</i>	LC	UC	0.3(1)								0.2(1)						
Peacock Pansy <i>Junonia almana</i>	-	C	0.3(2)														
Grey Pansy <i>Junonia atlites</i>	-	C	0.3(2)	0.2(1)							0.2(1)					0.2(1)	
Blue Admiral <i>Kaniska canace</i>	-	C									0.2(1)						
Commander <i>Moduza procris</i>	LC	VR												0.2(1)			
Common Sailer <i>Neptis hylas</i>	-	VC		(1)	0.2(1)	√		0.2(1)		0.3(2)	1.8(3)	0.7(2)		0.7(2)	0.3(1)	0.3(1)	
Five-dot Sergeant <i>Parathyma sulpitia</i>	-	C				√					0.7(4)	0.7(2)					
Common Leopard <i>Phalanta phalantha</i>	-	VR									0.3(2)						
Black Prince <i>Rohana parisatis</i>	-	C										√					
Common Jester <i>Symbrenthia lilaea</i>	-	C									0.2(1)	0.2(1)					
Painted Lady <i>Vanessa cardui</i>	LC	R	0.2(1)														
Common Palmfly <i>Elymnias hypermnestra</i>	-	C										0.2(1)			0.2(1)		
Bamboo Tree Brown <i>Lethe europa</i>	-	UC										0.2(1)		0.2(1)			
Common Evening Brown <i>Melanitis leda</i>	-	C														0.2(1)	
Dark Evening Brown <i>Melanitis phedima</i>	-	UC									0.7(3)	0.2(1)		0.2(1)			
Dark-brand Bush Brown <i>Mycalesis mineus</i>	-	VC	0.2(1)	0.2(30)		√		0.3(2)		0.2(1)	0.8(2)	5.5(10)		2.8(10)	0.5(3)	0.7(2)	
Common Five-ring <i>Ypthima baldus</i>	-	VC				√				0.3(1)	0.5(1)	0.5(2)		2.0(6)	0.5(3)		
Straight Five-ring <i>Ypthima lisandra</i>	-	C					0.3(2)				0.8(5)						

Species	Conservation Status ¹	Hong Kong Status (Chan <i>et al.</i> 2011) ²	Habitat Type ³														
			WA	DA	PO	MA	MW	NS	CS	GR/SWG	SH	FSW/SecW	OR	PL/MP	VA	WG	UR
Small Three-ring <i>Ypthima norma</i>	LC	VR				√				0.2(1)							
Common Mime <i>Chilasa clytia</i>	-	C									0.5(2)	√		0.3(1)			
Tailed Jay <i>Graphium agamemnon</i>	-	C										0.8(2)		0.2(1)	0.2(1)		
Common Jay <i>Graphium doson</i>	-	C		0.2(1)		√					0.2(1)	0.7(2)		0.2(1)		0.2(1)	
Common Bluebottle <i>Graphium sarpedon</i>	-	VC		0.2(1)				0.2(1)			2.2(9)	1.8(5)		0.7(2)	0.3(2)		
Chinese Peacock <i>Papilio bianor</i>	-	C									0.5(1)	1.3(3)		0.3(2)	0.5(2)		
Lime Butterfly <i>Papilio demoleus</i>	-	C	0.2(1)	0.2(1)						0.2(1)		0.2(1)			0.5(2)		
Red Helen <i>Papilio helenus</i>	-	VC								0.2(1)	0.3(1)	0.7(2)		1.0(4)	0.3(1)		
Great Mormon <i>Papilio memnon</i>	-	VC		0.2(1)			0.2(1)	√	√	0.2(1)	1.5(3)	2.3(5)	√	1.5(6)	0.5(3)		
Paris Peacock <i>Papilio paris</i>	-	VC				√		0.2(1)	0.2(1)	0.3(2)	1.3(2)	0.5(2)		1.2(6)	0.3(2)	0.2(1)	
Common Mormon <i>Papilio polytes</i>	-	VC	0.2(1)	0.2(1)		√	0.3(2)	0.2(1)		0.3(1)	5.8(7)	7.2(13)	0.3(2)	3.3(12)	2.3(6)	0.2(1)	0.5(3)
Spangle <i>Papilio protenor</i>	-	VC										0.5(1)					
Swallowtail <i>Papilio xuthus</i>	-	R		0.2(1)											√		
Five-bar Swordtail <i>Pathysa antiphates</i>	-	C								0.2(1)	0.3(1)	0.3(1)					
Lemon Emigrant <i>Catopsilia pomona</i>	-	C	0.8(5)	0.5(2)	0.2(1)	0.2(1)			0.5(3)	0.5(2)	0.8(2)	1.3(3)		1.0(4)	4.2(12)	0.7(2)	
Mottled Emigrant <i>Catopsilia pyranthe</i>	-	VC	0.2(1)	1.0(4)		√	0.7(4)		1.3(8)	0.2(1)	0.2(1)	0.3(1)		2.0(10)	0.2(1)		
Grass Yellow Species <i>Euerma</i> sp.	LC^	-		(1)													
Three-spot Grass Yellow <i>Eurema blanda</i>	-	C	0.2(1)	0.3(2)							0.2(1)					2.0(6)	0.8(5)
Common Grass Yellow <i>Eurema hecabe</i>	-	VC	0.2(1)	1.7(9)	0.3(2)	√	2.5(12)	1.3(8)	0.3(2)	1.3(4)	7.8(15)	6.3(12)	√	6.2(12)	3.2(5)	1.7(10)	
Red-base Jezebel <i>Delias pasithoe</i>	-	VC									0.5(3)	0.2(1)		0.2(1)	(1)		
Great Orange Tip <i>Hebomoia glaucippe</i>	-	C				√							√	0.2(1)			
Indian Cabbage White <i>Pieris canidia</i>	-	VC	21.5(100)	0.3(10)		√	3.7(20)	0.5(3)		0.3(1)	1.0(6)	0.7(3)		2.3(7)	3.8(8)	0.3(2)	0.3(2)
Small Cabbage White	-	R												0.2(1)			

Species	Conservation Status ¹	Hong Kong Status (Chan <i>et al.</i> 2011) ²	Habitat Type ³														
			WA	DA	PO	MA	MW	NS	CS	GR/SWG	SH	FSW/SecW	OR	PL/MP	VA	WG	UR
<i>Pieris rapae</i>																	
Total number of butterfly species recorded			17	22	5	20	6	11	9	19	51	49	6	34	27	18	4

Note:

1. Conservation Status by Fellowes *et al.* (2002): LC = Local Concern.

2. Hong Kong Status by Chan *et al.* (2011): VR = Very Rare; R = Rare; UC = Uncommon; C = Common; VC = Very Common.

3. Habitats: WA = Wet Agricultural Land; DA = Dry Agricultural Land; PO = Pond; MA = Marsh; MW = Mitigation Wetland; NS = Natural Watercourse; CS = Channelised Watercourse; GR/SWG = Grassland/Seasonally Wet Grassland; SH = Shrubland; FSW/SecW = *Fung Shui* Wood/Secondary Woodland; OR = Orchard; PL/MP = Plantation/Mitigation Plantation; VA = Village Area; WG = Waste Ground; UR = Urban/Residential Area. No records from the habitat types not listed. Butterflies recorded in Long Valley were ascribed to the element of the Long Valley habitat mosaic in which they were found.

Key:

Numbers in brackets represent the maximum number recorded.

Mean not relevant for observations during further surveys.

√ = Observed but not during transect surveys.

= Larvae recorded.

* = Common Dart *Potanthus pseudomaesa* is of Local Concern (Fellowes *et al.*, 2002)

^ = Small Grass Yellow *Eurema brigitta* is of Local Concern (Fellowes *et al.*, 2002)

Appendix 13.7.3. Mean and maximum numbers of butterflies recorded in systematic surveys in the Fanling North NDA and observations during further surveys for this study (where no means is shown, observations are from the further surveys.)

Species	Conservation Status ¹	Hong Kong Status (Chan <i>et al.</i> 2011) ²	Habitat Type ³															
			WA	DA	PO	MW	NS	CS	SWG	LG	UG	GR/SH	SecW	OR	PL/MP	VA	WG	UR
Bush Hopper <i>Ampittia dioscorides</i>	-	UC					√	√										
Banana Skipper <i>Erionota torus</i>	-	UC															0.7(4)	
Unidentified Swift	-	-											(1)					
Conjoined Swift <i>Pelopidas conjunctus</i>	-	R													0.2(1)			
Small Branded Swift <i>Pelopidas mathias</i>	-	UC													0.3(2)			
Contiguous Swift <i>Polytremis lubricans</i>	-	C													0.2(1)			
Pale Palm Dart <i>Telicota colon</i>	LC	R															0.2(1)	
Chestnut Angle <i>Odontoptilum angulatum</i>	-	C													0.2(1)			
Common Hedge Blue <i>Acytrolepis puspa</i>	-	C										(2)						
Gram Blue <i>Euchrysops cnejus</i>	-	UC													0.3(2)			
Tailed Cupid <i>Everes lacturnus</i>	-	C					0.2(1)											

Species	Conservation Status ¹	Hong Kong Status (Chan <i>et al.</i> 2011) ²	Habitat Type ³															
			WA	DA	PO	MW	NS	CS	SWG	LG	UG	GR/SH	SecW	OR	PL/MP	VA	WG	UR
Long-tailed Blue <i>Lampides boeticus</i>	-	C						0.2(2)										
Pale Grass Blue <i>Pseudozizeeria maha</i>	-	VC		5.2(20)	(3)	(2)		0.2(20)		(7)	(2)	(5)	(2)	(2)	0.2(9)	0.8(5)	0.7(3)	
Long-banded Silverline <i>Spindasis lohita</i>	-	C						√										
Plum Judy <i>Abisara echerius</i>	-	VC													(1)		0.5(30)	
Punchinello <i>Zemeros flegyas</i>	-	C													0.2(1)			
Large Faun <i>Faunis eumeus</i>	-	C											(1)	(1)	(2)			
Blue-spotted Crow <i>Euploea midamus</i>	-	VC													0.2(1)			
Ceylon Blue Glassy Tiger <i>Ideopsis similis</i>	-	VC		(1)					(1)									
Angled Castor <i>Ariadne ariadne</i>	-	C		0.3(1)		0.2(1)		√									√	√
Colour Sergeant <i>Athyma nefte</i>	-	C						√										
Rustic <i>Cupha erymanthis</i>	-	VC		0.2(1)														
Common Mapwing <i>Cyrestis thyodamas</i>	-	C								(2)			(1)					
White-edged Blue Baron <i>Euthalia phemius</i>	-	C	0.2(1)														0.2(1)	
Red-ring Skirt <i>Hestina assimilis</i>	-	C					√						(1)		(2)		√	
Great Egg-fly <i>Hypolimnas bolina</i>	-	C		0.8(2)	0.2(1)		0.2(1)	√						0.2(1)	0.8(4)		0.7(2)	0.2(1)
Peacock Pansy <i>Junonia almana</i>	-	C					0.3(2)				(1)							
Grey Pansy <i>Junonia atlites</i>	-	C				0.2(1)											0.2(1)	
Lemon Pansy <i>Junonia lemonias</i>	-	C				0.2(1)												
Commander <i>Moduza procris</i>	LC	VR		0.2(1)														
Common Sailer <i>Neptis hylas</i>	-	VC	0.2(1)	0.5(2)			0.2(1)	√		(2)			(1)		0.7(4)		0.3(2)	
Common Palmfly <i>Elymnias hypermnestra</i>	-	C															0.2(1)	
Banded Tree Brown <i>Lethe confusa</i>	-	C								(3)			(2)		0.2(1)			
Dark Evening Brown	-	UC				(2)				(3)			(1)		(1)			

Species	Conservation Status ¹	Hong Kong Status (Chan <i>et al.</i> 2011) ²	Habitat Type ³															
			WA	DA	PO	MW	NS	CS	SWG	LG	UG	GR/SH	SecW	OR	PL/MP	VA	WG	UR
<i>Melanitis phedima</i>																		
Dark-brand Bush Brown <i>Mycalesis mineus</i>	-	VC		0.5(3)		(2)		√					(1)		0.3(3)	(1)	0.3(1)	
Common Five-ring <i>Ypthima baldus</i>	-	VC		(1)		(1)		√			(1)		(2)		0.2(2)			
Common Mime <i>Chilasa clytia</i>	-	C						0.2(1)										
Tailed Jay <i>Graphium agamemnon</i>	-	C													0.2(1)			
Common Jay <i>Graphium doson</i>	-	C											(10)					
Common Bluebottle <i>Graphium sarpedon</i>	-	VC		(1)				0.2(1)										
Lime Butterfly <i>Papilio demoleus</i>	-	C													0.2(1)			
Red Helen <i>Papilio helenus</i>	-	VC											(2)		(2)			(1)
Great Mormon <i>Papilio memnon</i>	-	VC					0.2(1)	(1)					(4)		0.2(1)			
Paris Peacock <i>Papilio paris</i>	-	VC			(1)		√	√						(1)	(3)			
Common Mormon <i>Papilio polytes</i>	-	VC	0.2(1)	0.5(2)	0.2(1)	0.2(1)	0.2(1)	(1)	(1)	(3)			(5)	0.2(1)	1.5(5)	0.2(1)	0.3(1)	(1)
Spangle <i>Papilio protenor</i>	-	VC												0.2(1)	(1)			
Lemon Emigrant <i>Catopsilia pomona</i>	-	C					√	√							4.3(16)	(1)	1.8(11)	
Grass Yellow Species <i>Euerma</i> sp.	LC^	-										(1)						
Common Grass Yellow <i>Eurema hecabe</i>	-	VC		0.3(2)	0.8(5)	2.5(10)	0.5(2)	(10)	(1)	(2)			(1)		11.2(39)		2.2(10)	(4)
Common Gull <i>Cepora nerissa</i>	-	C		0.2(1)														
Red-base Jezebel <i>Delias pasithoe</i>	-	VC		(2)	(3)	(1)		(2)		(2)	(2)		(11)	(5)	(10)	(12)	(1)	
Great Orange Tip <i>Hebomoia glaucippe</i>	-	C															0.2(1)	
Indian Cabbage White <i>Pieris canidia</i>	-	VC	3.0(10)	8.8(20)	(2)	1.7(10)	0.3(2)	(24)	(4)	(19)	(8)		(6)	0.2(2)	2.2(21)	(15)	1.3(5)	(1)
Total number of butterfly species recorded			4	15	7	11	12	19	4	9	5	3	17	8	28	6	18	6

Note:

1. Conservation Status by Fellowes *et al.* (2002): LC = Local Concern.
2. Hong Kong Status by Chan *et al.* (2011): VR = Very Rare; R = Rare; UC = Uncommon; C = Common; VC = Very Common.

3. Habitats: WA = Wet Agricultural Land; DA = Dry Agricultural Land; PO = Pond; MW = Mitigation Wetland; NS = Natural Watercourse; CS = Channelised Watercourse; SWG = Seasonally Wet Grassland; LG = Lowland Grassland; UG = Upland Grassland; GR/SH = Grassland/ Shrubland; SecW = Secondary Woodland; OR = Orchard; PL/MP = Plantation/Mitigation Plantation; VA = Village Area; WG = Waste Ground; UR = Urban/Residential Area. No records from the habitat types not listed.

Key:

Numbers in bracket represent the maximum number recorded.

Mean not relevant for observations during further surveys.

√ = Observed but not during transect surveys.

^ = Small Grass Yellow *Eurema brigitta* is of Local Concern (Fellowes *et al.*, 2002)

Appendix 13.7.4. Species listed by Bascombe (1993) but not recorded in the subsequent surveys in the Study Area.

Species	Conservation and Protection Status ¹	Hong Kong Status ²	Habitat Utilised ³
Colon Swift <i>Caloris bromus</i>	-	Very Rare	(not stated)
Dark Swift <i>Caloris cahira</i>	-	Rare	Bamboo groves
Dark Brown Ace <i>Halpe porus</i>	Local Concern	Very Rare	Bamboo groves; very rare with scattered records
Little Branded Swift <i>Pelopidas anga</i>	-	Uncommon	Open grasslands, shrublands, abandoned fields
Common Dart <i>Potanthus pseudomassa</i>	Local Concern	Rare	Abandoned fields, grasslands
Lesser Band Dart <i>Potanthus trachala</i>	-	Rare	Abandoned fields, grasslands
Hainan Palm Dart <i>Telicota besta</i>	Local Concern	Very Rare	Abandoned exposed grasslands, shrublands
White-banded Flat <i>Gerosis phisara</i>	-	Rare	Well-vegetated areas
Water Snow Flat <i>Tagiades litigiousus</i>	-	Common	Woodlands
Lesser Forest Blue <i>Taraka hamada</i>	Local Concern	Rare	Bamboo groves (with aphids infestation)
Forget-me-not <i>Catochrysops strabo</i>	-	Very Rare	Near shrubs, wastelands
Small Grass Blue <i>Famegana alsulus</i>	-	Uncommon	Hillside grasslands, abandoned agricultural fields
Cornelian <i>Deudorix epijarbas</i>	-	Rare	Woodlands, near orchards
Brown Onyx <i>Horaga albimacula</i>	Local Concern	Very Rare	Information of the habitat utilisation is limited; no local sighting for many years
Club Silverline	-	Uncommon	Woodland edge, near shrubs

Species	Conservation and Protection Status ¹	Hong Kong Status ²	Habitat Utilised ³
<i>Spindasis syama</i> ^			
Common Pierrot <i>Castalius rosimon</i>	Local Concern	-	Coastal shrublands, wastelands; absent in Hong Kong for many years
Common Duffer <i>Discophora sondaica</i>	-	Uncommon	Near bamboo groves
Blue Tiger <i>Tirumala limniace</i>	-	Common	Woodside areas; males sip the nectar of trailside <i>Ageratum conyzoides</i>
Blue Pansy <i>Junonia orithya</i>	-	Uncommon	Dry grassland; more common in fall
Common Lascar <i>Pantoporia hordonia</i>	-	Uncommon	Woodside, shaded areas
Vagrant <i>Vagrans egista</i> ^	Local Concern	Very Rare	Forests, woodland edge; very rare in Hong Kong
Common Tree Brown <i>Lethe rohria</i>	-	Uncommon	Woodland edge
South China Bush Brown <i>Mycalasis zonata</i>	-	Common	Shaded areas
Muirhead's Labyrinth <i>Neope muirheadii</i>	-	Uncommon	Woodland areas, bamboo groves
Common Rose <i>Pachliopta aristolochiae</i>	-	Rare	Shrublands, woodlands, near host plants (<i>Aristolochia fordiana</i> and <i>Aristolochia tagala</i>) of the caterpillar
Common Birdwing <i>Troides helena</i> ^ #	Cap.170, Appendix II in CITES	Uncommon	Near the host plants (<i>Aristolochia tagala</i>) of its larvae
Small Grass Yellow <i>Eurema brigitta</i>	Local Concern	Rare	Near shrubs, abandoned agricultural lands (stay close to host plant <i>Cassia mimosoides</i>)

Note:

1. Conservation and Protection Status refers to Cap. 170 Wild Animals Protection Ordinance, UNEP-WCMC (2012) and Fellowes *et al.* (2002).
2. Hong Kong Status refers to Chan *et al.* (2011).
3. Sources:
 - a. Lo, P.Y.F., Hui, W.L. 2010. Hong Kong Butterflies. Friends of the Country Parks and Cosmos Books Ltd. Hong Kong.
 - b. AFCD. 2013. Hong Kong Biodiversity Database. Available at <http://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/search.asp>. Accessed in March 2013.

Key:

^ = Records listed in Maunsell (1997)/ Maunsell (2003) but no record from Study Area found in HKU Biodiversity Database and/or listed by Maunsell (1997)/Maunsell (2003) as only from Beas River.
= The larval food plant *Aristolochia tagala* has not been found in the Study Area.