

**A Report on the Surveying Method of Ecological
Impact Study of the Environmental Impact Assessment
of Hong Kong Section of Guangzhou-Shenzhen-Hong
Kong Express Rail**



March 2010

According to the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link Environmental Impact Assessment Report (hereafter XRL EIA), comments are given on the report referring to the surveying methods.

- 1) Effects of the underground construction to the ecosystem were underestimated; According to the plan of Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (hereafter XRL); the underground construction of the railway would pass through the buffer zone of Mai Po area, four country parks and site of specific scientific interest (SSSI). The beginning of the XRL EIA mentioned impacts of the underground construction works to environment and ecosystem on the ground were neglectable. However, underground construction may affect the hydrology and finally affecting groundwater level (Nubukai & Noriharu 2005). Groundwater lowering may include depletion of groundwater sources, drying out of streams, wetlands or ponds and the changes in the salinity of the estuary due to the salt water intrusion (Pielou, 1998). The wildlife dependant of these habitats might lose their foraging, breeding or roosting grounds due to habitat degradation.
- 2) Duration of the Ecological survey; In the XRL EIA, the ecological survey for the potential impacted area only lasted for six months. Short-termed ecological survey cannot provide complete picture on complicated ecosystem of the surveyed area (Dudgeon & Corlett, 2004).
- 3) Choice of indicator species; In XRL EIA, butterflies and dragonflies were chosen as indicator species for the ecological health. Although butterflies and dragonflies were used as ecological indicator among different studies (Erhardt 1998, Buckley 2003, Sahlen & Ekestubbe 2004). However, cautions should be taken when a species was chosen to investigate the ecological integrity of a habitat as some variations may not be related to the changes of environment (Carignan & Villard 2004). More information should be provided based on the choice of the indicator species.
- 4) In the ecological evaluation of various sites in the XRL project, most of the habitats (fish pond, reed bed, watercourse, agricultural habitat, grassland and shrubs) in the study site including Mai Po area were labeled as very common, common or fairly common. Most of the species found in study sites were predominantly common species, only few of them are with

conservation interest. However, Commonness of habitat or species cannot represent its importance in the ecosystem. Fleishman *et al.* (2000) showed that rare species may be poor umbrella species, species whose protection serves to protect many co-occurring species, due to their limited distribution and not easy to be influenced by the management implied. In addition, some organisms may use certain area as their breeding grounds, with the removal of that area, they may face locally extinct due to the damage of their habitat. Species with low mobility like amphibians and reptiles were more vulnerable to the destruction of habitats.

- 5) In the XRL EIA, re-creatability was used as one of the criteria to evaluate the ecological value of the study habitats. However, re-creatability of a habitat involved a lot of different factors including temperature, source of seeds and interactions among species in that habitat. All these factors can affect the succession of the plantation in certain area (Dudgeon & Corlett, 2004), so the re-creatability of the habitat cannot be evaluated in a simple way.
- 6) Except for the noise and vibration pollution, little information was provided regarding to other pollution; During the construction period, vehicles and other machines used during the construction work may affect the air quality of the nearby area and sensitive receivers. Water run-off from the construction site can also pose risk to the nearby freshwater ecosystem like Kam Tin River. The effects may include changing water turbidity and primary production. With changes in primary productivity, the whole ecosystem of the stream may be altered. However, little information was provided regarding to its impact. The report mentioned “While dust emission, run-off, glare will also be controlled by implementation of good construction site practice. Construction phase disturbance impact to the impact on the nearby ecological sensitive receivers is considered acceptable”
- 7) Survey results conducted by others group was not included in the assessment; The number of species of “conservation concern” is underestimated.

Suggested Ecological Survey Programme

Basically, the method of the suggested ecological survey would be based on the method used in XRL EIA with amendments.

A one year ecological survey covered both the wet and dry seasons would be conducted to collect baseline information about the ecosystems might be affected by the construction and operation of XRL. Survey would be conducted on a monthly basis except for avifauna survey would be conducted biweekly. As different wildlife groups would have difference in breeding seasons, migratory behaviour, or physiological changes at different time of the year, they may utilize the survey site at different seasons of the year. In order to collect representative data for different flora and fauna species, target species groups would be surveyed at the time of year when the group is more active, conspicuous or identified easily (EIAO Guidance Note No. 7/2002).

Habitat Mapping

Similar to the previous XRL EIA, in this proposed ecological survey, habitats within the study area would be mapped with their size and type. During habitat mapping, data of vegetation type and size, species recorded, species abundance and their conservation status, biodiversity, community structure, seasonal pattern and inter-dependence of habitats and species of the habitat will also be collected. Photographs would be taken to record the habitat types and any identified important ecological feature. A desktop review of aerial photographs developed habitat maps of a suitable scale (1:1000 to 1:5000) showing the types and locations of habitats within 500 m of the study area. The habitat maps were then verified during ground truthing.

Vegetation and Plant Species Survey

Vegetation surveys were conducted throughout wet and dry seasons, by direct observation, to record diversity and dominance of plant species present in different habitat types. Areas with similar vegetation composition were categorized under the same habitat type. The location of any plant species of conservation interest was recorded. In addition, the umbrella species in different habitats will also be identified and recorded. Identification of flora species and status in Hong Kong was made with reference to Hong Kong Herbarium (2004) and Corlett *et al.* (2000).

Fauna Survey

Transect count method covering a representative area of each habitat type were conducted to record species and relative abundance of the birds, mammals, herpetofauna, butterflies, and dragonflies sighted or heard within the study area. The locations of the survey transect were selected with the consideration of site accessibility to cover the representative areas of all identified habitats as far as practicable. In addition to direct observation, photo identification would also be done during the survey. Uses of various habitats by wildlife (e.g. feeding, breeding, etc.) with special attention to those wildlife groups and their associated habitats identified as having conservation interests were investigated and identified during the surveys.

Bird Survey

Avifauna species present and relative abundance of species in different habitats would be surveyed by transect counts. In addition to direct count, avifauna species would also be identified using their call. Any notable behaviours such as feeding, roosting or breeding of the birds and the associated habitats and vegetation where they have such behaviours would be recorded. Moreover, any special species-habitat relationships observed during the survey would also be noted down. Daytime avifauna surveys would start in the early morning at the period of peak bird activity. Night surveys would also be conducted to record nocturnal avifauna. Surveys would be done every two weeks. To maximize efficiency, relevant literature and current surveys would be used to provide information for the assessment. Because of Mai Po's importance to avifauna especially waterbirds, a particular emphasis on the birds of this region was placed in our reviews. All the records were reviewed under IUCN and relevant local guidelines for their conservation status.

Terrestrial Mammal Survey

Terrestrial mammal survey would be conducted during both day and night time. In addition to direct count on any observed mammals, all traits such as dung, feeding signs, footprints, burrows and dens which associated with mammal activities would also be recorded and identified to the lowest possible taxon level. As mammals in Hong Kong which are of conservation concern are mostly secretive and nocturnal, camera trapping would also be used to record the mammal species activities. Camera traps would be placed at representative locations at the study area and the infrared sensor of the camera would be triggered when there are passing-by animals. The animals

could then be identified from the photos taken. Moreover, relative abundance, distribution pattern and activity patterns for various species could also be revealed from the records taken. All records would be reviewed under IUCN and relevant local guidelines for their conservation status.

Amphibians Survey

Amphibian survey would be conducted at both day and night time during the active season. Active searching would be used as the sampling method. During the active searching, any suitable habitats for amphibians like stones, pond bunds, crevices, leaf litter/debris and rotten log were investigated. During the breeding season, any breeding pair would be recorded and their abundance would be quantified. Mating calls at their breeding sites would also be recorded for identification. In addition to adults, eggs and tadpoles of amphibians would also be recorded. All records would be reviewed under IUCN and relevant local guidelines for their conservation status.

Reptiles Survey

Reptiles survey would be conducted at day and night time during the active season by using active searching method. During the survey, all potential habitats for reptiles would be examined to investigate their abundance. All the records were reviewed under IUCN and relevant local guidelines for their conservation status.

Butterflies and Dragonflies Survey

Insects are a group of species that is difficult to assess, to investigate their abundance, indicator taxa should be chosen. However, study demonstrates that using single indicator taxa may not be representative for area biodiversity. In proposed ecological survey, butterflies and dragonflies are chosen as indicator taxa as their life cycle covers various habitats and study indicated that they are the suitable species for assessing the biodiversity of ecosystem (Sahlen & Ekestubbe 2004).

Butterflies and dragonflies survey would be conducted during daytime and under fine weather when most butterflies and dragonflies are active. Active search would be used to record the abundance of butterflies and dragonflies. The route would include different habitats within the study area. During the survey, all butterflies observed would be identified and recorded. For dragonflies survey, any possible habitat would be examined including vegetation of the

riparian zone. Larvae of dragonflies are surveyed and count in the freshwater invertebrates survey. All the records would be reviewed under IUCN and relevant local guidelines for their conservation status.

Freshwater communities survey

Survey of freshwater communities would include survey of freshwater invertebrates and fish. Before surveys, physical parameters (water temperature, pH, turbidity and BOD) of the watercourse would be measured.

Freshwater invertebrates survey

Survey of freshwater invertebrates would be done in both wet and dry season in all watercourse covered in the study area. Freshwater invertebrates biodiversity and abundance would be record by active searching. Hand net would be used to collect freshwater invertebrates among debris, aquatic and emergent vegetation and any other possible habitat. In addition, stones on streambeds would be overturned to local any freshwater invertebrates underneath. All encountered organisms would be identified to the lowest possible taxon and recorded. All records would be reviewed under IUCN and relevant local guidelines for their conservation status.

Freshwater fish survey

Survey of freshwater fish would be done in both wet and dry season in monthly basis in all watercourse covered in the study area. Active searching is used to collect data about freshwater fish. Netting is used to collect freshwater fish among debris, aquatic and emergent vegetation and any other possible habitat. In addition, stones on streambeds would be overturned to local any freshwater invertebrates underneath. All encountered organisms were identified to the lowest possible taxon and recorded. All records would be reviewed under IUCN and relevant local guidelines for their conservation status.

Hydrogeography survey

In this proposal, in addition to the area near the buildings and structures on the surface, the area with underground constructions should also be investigated to predict and monitor the potential effects of XRL to surface ecosystems.

References

- Buckley, R., 2003. Ecological indicators of tourist impact in parks, *Journal of Ecotourism* 2(1) 54-66
- Dudgeon, D. and Corlett, R., 2004. *The Ecology and Biodiversity of Hong Kong*. Hong Kong: Friends of the country Parks & Joint Publishing.
- Erhardt, A. (1985) Diurnal Lepidoptera: sensitive indicator of cultivated and abandoned grassland. *Journal of Applied Ecology* 22 849-861
- Fleishman, E., Murphy, D. D., Brussard, P. F., 2000. A new method for selection of umbrella species for conservation planning, *Ecological Applications* 10 (2) 569-579
- JIS, 2002. Method of measurement of vibration level, Z8735
- Kremen, C., 2002. Assessing the indicator properties of species assemblages for natural areas monitoring, *Ecological Applications* 12 (2) 203-217
- Landres, P. B., Verner, J., Thomas, J. W. 1998. Ecological uses of vertebrate indicator species: A critique, *Conservation Biology* 12(4) 316-328
- Oostermeijer, J. G. B. and van Swaay C. A. M. 1998. *Biological Conservation* 86 (3) 271-280
- Pielou, E.C. 1998. *Fresh Water*. Chicago: University of Chicago Press.
- Nobuaki, K. and Noriharu, M., 2005. Evaluating influence of underground construction on groundwater flow interruption: Institute of Technology, Shimizu Corp. <http://www.shimz.co.jp/>
- Sahlen, G. and Ekestubbe, K., 2004. Identification of dragonflies (Odonata) as indicators of general species richness in boreal forest lakes, *Biodiversity and Conservation* 13 (5) 673-690

石崗菜園村 動物調查記錄

Animals checklist in Choi Yuen Village, Shek Kong

Date: 30th Dec 2009

調查員: James Wong
Ken Ching



Family	Species	品種	Scientific Name	Photo	Remarks	Status	Reference
Babblers	Hwamei	畫眉	<i>Garrulax canorus</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Masked Laughingthrush	黑臉噪(眉鳥)	<i>Garrulax perspicillatus</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
BulBuls	Chinese BulBul	白頭鵯	<i>Pycnonotus sinensis (sinensis)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Red-Whiskered Bulbul	紅耳鵯	<i>Pycnonotus jocosus</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Sooty-headed Bulbul	白喉紅臀鵯	<i>Pycnonotus aurigaster</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Cisticolas & Prinias	Dusky Warbler	褐柳鶯	<i>Phylloscopus fuscatus</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	Plain Prinia	純色山鷓鴣	<i>Prinia inornata (extensicauda)</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Yellow-bellied Prinia	黃腹山鷓鴣	<i>Prinia flaviventris (sonitans)</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Zitting Cisticola	棕扇尾鶯	<i>Cisticola juncidis (Tinnabulans)</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
Crows	Blue Magpie	紅咀藍鵲	<i>Urocissa erythrorhyncha</i>		石崗河	Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Common Magpie	喜鵲	<i>Pica pica (sericea)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Cuckoos	Common Koel	噪鵲	<i>Eudynamis scolopacea</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Greater Coucal	褐翅鴉鵂	<i>Centropus sinensis</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Indian Cuckoo	四聲杜鵑	<i>Cuculus micropterus</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Large Hawk Cuckoo	鷹鵲	<i>Hierococcyx sparverioides (sparverioides)</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
Doves	Rock Dove	原鴿	<i>Columba livia</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Spotted Dove	珠頸斑鳩	<i>Streptopelia chinensis (chinensis)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Eagles & Hawks	Black Kite	麻鷹	<i>Milvus migrans (lineatus)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Bonelli's Eagle	白腹隼鷂	<i>Hieraaetus fasciatus</i>	V	石崗河	Rare / Resident	A Photographic Guide to the Birds of HK / 2009
	Common Buzzard	普通鵟	<i>Buteo buteo (japonicus)</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	Common Kestrel	紅隼	<i>Falco tinnunculus (interstinctus)</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	Crested Seprent Eagle	蛇鵂	<i>Spilornis cheela</i>			Common / Resident	A Photographic Guide to the Birds of HK / 2009
Flowerpeckers	Scarlet-Backed Flowerpecker	朱背啄花鳥	<i>Dicaeum cruentatum</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Flycatchers	Asian Brown Flycatcher	北灰鶲	<i>Muscicapa dauurica</i>	V	菜園村	Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
Hérons & Egrets	Black-Crowned Night Heron	夜鷺	<i>Nycticorax nycticorax</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Cattle Egret	牛背鷺	<i>Bubulcus ibis</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Chinese Pond Heron	池鷺	<i>Ardeola bacchus</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Great Egret	大白鷺	<i>Ardea alba</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Grey Heron	蒼鷺	<i>Ardea cinerea</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Little Egret	小白鷺	<i>Egretta garzetta</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Kingfisher	Common Kingfisher	普通翠鳥	<i>Alcedo atthis</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Munias	Scaly-breasted munia	斑文鳥	<i>Lonchura punctulata</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	White-rumped Munia	白腰文鳥	<i>Lonchura striata</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Pipits	Olive-Backed Pipit	樹鵲	<i>Anthus hodgsoni (yunnanensis)</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
Rails & Coots	White-breasted Waterhen	白胸苦惡鳥	<i>Amauornis phoenicurus</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Sandpipers	Common Sandpiper	磯鵲	<i>Actitis hypoleucos</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Green Sandpiper	白腰草鵲	<i>Tringa ochropus</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
Shrikes	Dusky Shrike	黑伯勞	<i>Lanius schach</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Long-Tailed Shrike	棕背伯勞	<i>Lanius schach (schach)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Starlings	Black-Collared Starling	黑領椋鳥	<i>Sturnus nigricollis</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009

	Crested Myna	八哥	<i>Acridotheres cristalellus</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Red-Billed Starling	絲光椋鳥	<i>Sturnus sericeus</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
Swifts	House Swift	小白腰雨燕	<i>Apus nipalensis</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Swallows	Barn Swallow	家燕	<i>Hirundo rustica</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Sparrows	Eurasian Tree Sparrow	麻雀	<i>Passer montanus</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Sunbirds	Fork-Tailed Sunbird	叉尾太陽鳥	<i>Aethopyga christinae</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Thrushes	Blue Whistling Thrush	紫嘯鶇	<i>Myiophoneus caeruleus</i>		石崗河	Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Common Blackbird	烏鶇	<i>Turdus merula (mandarinus)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
	Daurian Redstart	北紅尾鶇	<i>Phoenicurus aureus</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	Grey-Backed Thrush	灰背鶇	<i>Turdus hortulorum</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	Oriental magpie Robin	鵲鶇	<i>Copsychus saularis</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	Siberian Stonechat	西伯利亞石(即鳥)	<i>Saxicola maurus (stejnegeri)</i>			Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
Tits	Great Tit	大山雀	<i>Parus major (commixtus)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Wagtails	Grey Wagtail	灰鵲鶇	<i>motacilla cinerea</i>	V		Common / Winter Vistor	A Photographic Guide to the Birds of HK / 2009
	White Wagtail	白鵲鶇	<i>Motacilla alba</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
Warblers	Common Tailorbird	長尾縫葉鶯	<i>Orthotomus sutorius</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
White-Eye	Japanese White-Eye	暗綠繡眼鳥	<i>Zosterops japonica (simplex)</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009

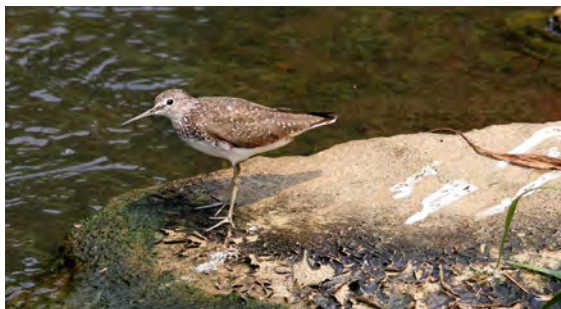
Family	Species	品種	Scientific Name	Photo	Remarks	Status	Reference
Coenagrionidae	Common Bluetail	褐斑異痣蟌	<i>Ischnura senegalensis</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Orange-Tailed Midget	杯斑小蟌	<i>Agriocnemis femina oryzae</i>	√	紅色型	Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Orange-Tailed Sprite	疏球橘黃蟌	<i>Ceriatrion auranticum ryukyuanum</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Yellow Featherlegs	黃狹扇蟌	<i>Copera marginipes</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
Protoneuridae	Black Treadtail	烏齒原蟌	<i>prodasineura autumnalis</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
Gomphidae	Common Flangetail	霸王葉春蜓	<i>Ictinogomphus pertinax</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
Libellulidae	Blue Chaser	濕地狹翅蜻	<i>Potamarcha congener</i>	√		Common / Widespread	Field Guide to the Dragonflies of HK / 2003
	Blue Dasher	藍額疏脈蜻	<i>Brachydiplax chalybea flavovittata</i>	√		Common / Widespread	Field Guide to the Dragonflies of HK / 2003
	Common Red Skimmer	赤褐灰蜻	<i>Orthetrum pruinsum neglectum</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Crimson Darter	紅蜻	<i>Crocothemis servilia servilia</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Crimson Dropwing	曉褐蜻	<i>Trithemis aurora</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Green Skimmer	狹腹灰蜻	<i>Orthetrum sabina sabina</i>	√		Common / Widespread	Field Guide to the Dragonflies of HK / 2003
	Indigo Dropwing	慶褐蜻	<i>Trithemis festiva</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Marsh Skimmer	呂宋灰蜻	<i>Orthetrum luzonicum</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Pied Percher	截斑脈蜻	<i>Neurothemis tullia tullia</i>	√		Common / Widespread	Field Guide to the Dragonflies of HK / 2003
	Russet Percher	網脈蜻	<i>Neurothemis fulvia</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
	Wandering Glider	黃蜻	<i>Pantala flavescens</i>	√		Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003

Family	Species	品種	Scientific Name	Photo	Remarks	Status	Reference
Birdwings, Swallowtail	Common Birdwing	裳鳳蝶	<i>Troides helena</i>			Uncommon	Butterfly Watching in HK / 2002
	Common Bluebottle	青鳳蝶	<i>Graphium sarpedon</i>	V		Very Common	Butterfly Watching in HK / 2002
	Common Mime	斑鳳蝶	<i>Chilasa clytia</i>	V		Common	Butterfly Watching in HK / 2002
	Common Mormon	玉帶鳳蝶	<i>Papilio polytes</i>	V		Very Common	Butterfly Watching in HK / 2002
	Great Mormon	美鳳蝶	<i>Papilio memnon</i>			Very Common	Butterfly Watching in HK / 2002
	Lime Butterfly	達摩鳳蝶	<i>papilio demoleus</i>	V		Common	Butterfly Watching in HK / 2002
	Paris Peacock	巴黎翠鳳蝶	<i>Papilio paris</i>	V		Very Common	Butterfly Watching in HK / 2002
	Red Helen	玉斑鳳蝶	<i>Papilio helenus</i>	V		Very Common	Butterfly Watching in HK / 2002
	Spangle	藍鳳蝶	<i>Papilio protenor</i>			Very Common	Butterfly Watching in HK / 2002
	Tailed Jay	統帥青鳳蝶	<i>graphium agamemnon</i>			Very Common	Butterfly Watching in HK / 2002
Blues	Common Hedge Blue	鈕灰蝶	<i>Acytolepis puspa</i>	V		Common	Butterfly Watching in HK / 2002
	Dark Cerulean	雅灰蝶	<i>Jamides bochus</i>	V		Common	Butterfly Watching in HK / 2002
	Lesser Grass Blue	毛眼灰蝶	<i>Zizina otis</i>	V		Common	Butterfly Watching in HK / 2002
	Pale Grass Blue	酢醬灰蝶	<i>Zizeeria maha</i>			Very Common	Butterfly Watching in HK / 2002
	Plains Cupid	曲紋紫灰蝶	<i>Chilades pandava</i>	V		Uncommon	Butterfly Watching in HK / 2002
	Purple Sapphire	斜斑彩灰蝶	<i>Heliphorous phoenicoparyphus</i>	V		Common	Butterfly Watching in HK / 2002
Browns	Branded Tree Brown	白帶黛眼蝶	<i>Lethe confusa</i>	V		Common	Butterfly Watching in HK / 2002
	Common Evening Brown	暮眼蝶	<i>melanitis leda</i>	V		Very Common	Butterfly Watching in HK / 2002
	Common Five-ring	矍眼蝶	<i>Ypthima baldus</i>	V		Very Common	Butterfly Watching in HK / 2002
	Dark-band Bush Brown	小眉眼蝶	<i>Mycalis mineus</i>	V		Very Common	Butterfly Watching in HK / 2002
	South China Bush Brown	平頂眉眼蝶	<i>mycalesis zonata</i>	V		Very Common	Butterfly Watching in HK / 2002
Fauns, Duffers	Large Faun	串珠環蝶	<i>Faunis eumeus</i>	V		Common	Butterfly Watching in HK / 2002
Metalmarks	Plum Judy	蛇目褐蛺蝶	<i>Abisara echerius</i>	V		Very Common	Butterfly Watching in HK / 2002
	Punchinello	波蛺蝶	<i>Zemeros flegyas</i>	V		Common	Butterfly Watching in HK / 2002
Nymphs	Angled Castor	波蛺蝶	<i>Ariadne ariadne</i>	V		Common	Butterfly Watching in HK / 2002
	Blue Admiral	琉璃蛺蝶	<i>Kaniska canace</i>	V		Common	Butterfly Watching in HK / 2002
	Colour Sergeant	相思帶蛺蝶	<i>Athyma nefte</i>	V		Common	Butterfly Watching in HK / 2002
	Common Jester	散紋盛蛺蝶	<i>Symbrenthia lilaea</i>	V		Common	Butterfly Watching in HK / 2002
	Common Mapwing	網絲蛺蝶	<i>Cyrestis thyodamas</i>	V		Common	Butterfly Watching in HK / 2002
	Common Sailer	中環蛺蝶	<i>Neptis hylas</i>	V		Very Common	Butterfly Watching in HK / 2002
	Grey Egg-fly	幻紫斑蛺蝶	<i>Hypolimnas bolina</i>	V		Very Common	Butterfly Watching in HK / 2002
	Grey Pansy	波紋眼蛺蝶	<i>Junonia atlites</i>	V		Common	Butterfly Watching in HK / 2002
	Indian Fritillary	斐豹蛺蝶	<i>Argyreus hyperbius</i>	V		Common	Butterfly Watching in HK / 2002
	Lemon Pansy	蛇眼蛺蝶	<i>Junonia lemonias</i>	V		Uncommon	Butterfly Watching in HK / 2002
	Peacock Pansy	美眼蛺蝶	<i>Junonia almana</i>	V		Common	Butterfly Watching in HK / 2002
	Red Ring Skirt	黑脈蛺蝶	<i>Hestina assimilis</i>	V		Common	Butterfly Watching in HK / 2002
	Rustic	黃襟蛺蝶	<i>Cupha erymanthis</i>	V		Very Common	Butterfly Watching in HK / 2002
	Skippers	Grass Demon	姜弄蝶	V		Uncommon	Butterfly Watching in HK / 2002
	Indian Palm Bob	素弄蝶	<i>Suastus gremius</i>	V		Common	Butterfly Watching in HK / 2002
Tigers, Crows	Glassy Tiger	絹斑蝶	<i>Parantica aglea</i>			Very Common	Butterfly Watching in HK / 2002

	Ceylon Blue Glassy Tiger	擬旖斑蝶	<i>Ideopsis similis</i>			Very Common	Butterfly Watching in HK / 2002
	Common Indian Crow	幻紫斑蝶	<i>Euploea core</i>	V		Very Common	Butterfly Watching in HK / 2002
	Common Tiger	虎斑蝶	<i>Danaus genutia</i>	V		Very Common	Butterfly Watching in HK / 2002
	Blue-spotted Crow	藍點紫斑蝶	<i>Euploea midamus</i>	V		Very Common	Butterfly Watching in HK / 2002
Whites, Yellows	Common Grass Yellow	寬邊黃粉蝶	<i>Eurema hecabe</i>	V		Very Common	Butterfly Watching in HK / 2002
	Indian Cabbage White	東方菜粉蝶	<i>Pieris canidia</i>	V		Very Common	Butterfly Watching in HK / 2002
	Great Orange Tip	鶴頂粉蝶	<i>hebomoia glaucippe</i>			Common	Butterfly Watching in HK / 2002
	Mottled Emigrant	梨花遷粉蝶	<i>Catopsilia pyranthe</i>			Common	Butterfly Watching in HK / 2002
	Red-base Jezebel	報喜斑粉蝶	<i>Delias pasithoe</i>	V		Very Common	Butterfly Watching in HK / 2002
	Three-spot Grass Yellow	槲黃粉蝶	<i>Eurema blanda</i>	V		Uncommon	Butterfly Watching in HK / 2002
	Lemon Emigrant	遷粉蝶	<i>Catopsilia pomona</i>	V		Common	Butterfly Watching in HK / 2002

石崗菜園村 鳥類 調查記錄

Birds in Choi Yuen Village, Shek Kong



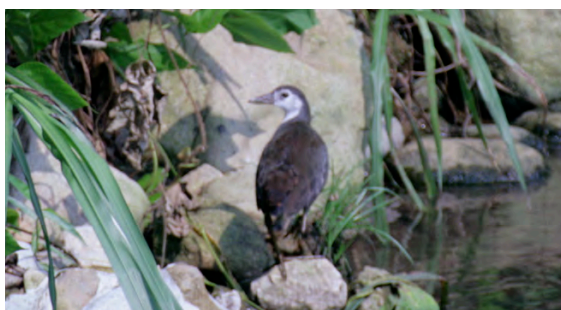
白腰草鷸
Green Sandpiper

date: 16 August 2009



池鷺
Chinese Pond Heron

date: 16 August 2009



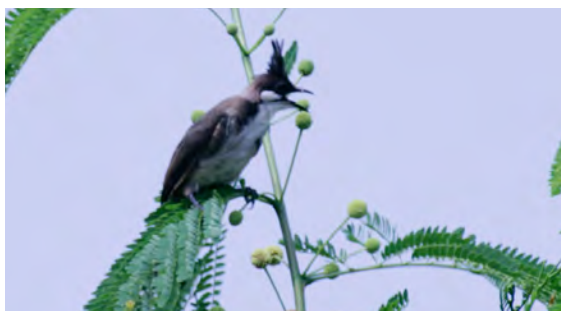
白胸苦惡鳥
White Breasted Waterhen

date: 16 August 2009



普通翠鳥
Common Kingfisher

date: 16 August 2009



紅耳鵲
Crested Bulbul

date: 16 August 2009



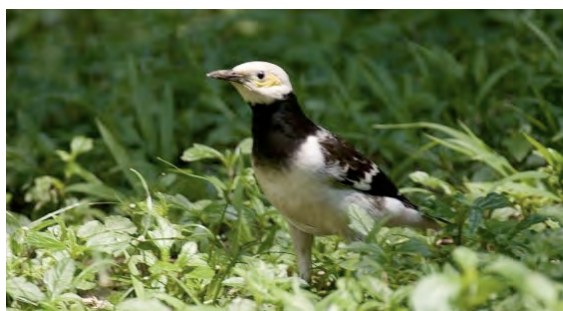
小白鷺
Little Egret

date: 16 August 2009



磯鷸
Common Sandpiper

date: 16 August



黑領椋鳥
Black Necked Starling

date: 16 August

石崗菜園村 鳥類 調查記錄

Birds in Choi Yuen Village, Shek Kong



灰鵲鵐
Grey Wagtail

date: 16 Oct 2009



白腹山鵟
Bonelli's Eagle

date: 16 Oct 2009



紅隼
Kestrel

date: 16 Oct 2009



北紅尾鸲
Durian Redstart

date: 16 Oct 2009

石崗菜園村 蝴蝶 調查記錄

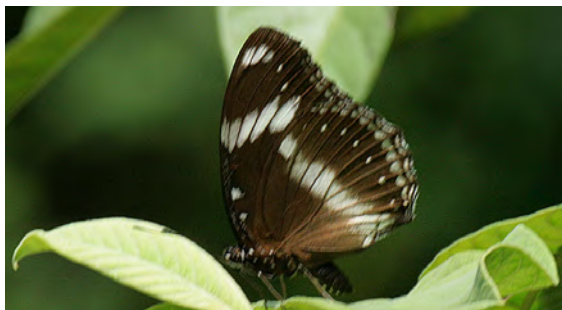
Butterfly in Choi Yuen Village, Shek Kong



槲黃粉蝶
Threespot GrassYellow date: 16 August 2009



東方菜粉蝶
Indian Cabbage White date: 16 August 2009



幻紫斑蛱蝶
Greta Eggfly date: 16 August 2009



藍點紫斑蝶
Blue Spotted Crow date: 16 August 2009



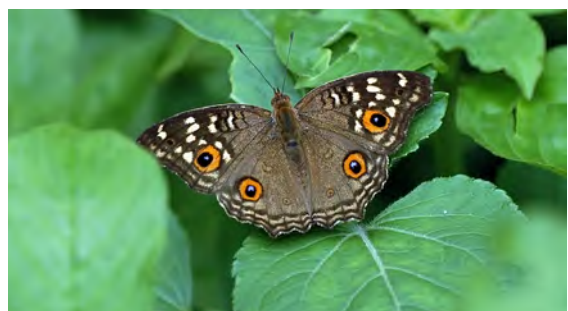
波紋眼蛱蝶
Grey Pansy date: 16 August 2009



波蛱蝶
Angled Caster date: 16 August 2009



斐豹蛱蝶
Indian Fritillary date: 16 August 2009



蛇眼蛱蝶
Lemon Pansy date: 16 August 2009

石崗菜園村 蜻蜓調查記錄

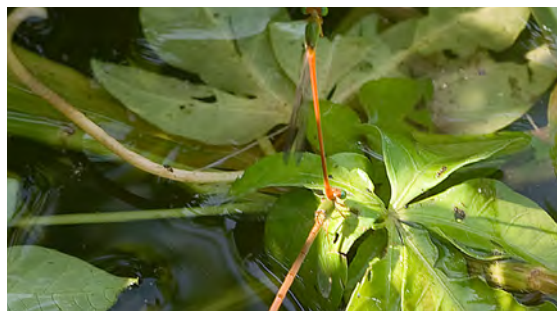
Dragonflies in Choi Yuen Village, Shek Kong



褐斑異痣蟌

Common bluetail

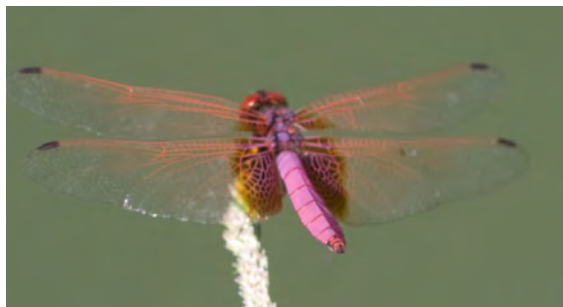
date: 8 August 2009



琉球橘黃蟌

Orange-tailed Sprite

date: 8 August 2009



曉褐蜻

Crimson Dropwing

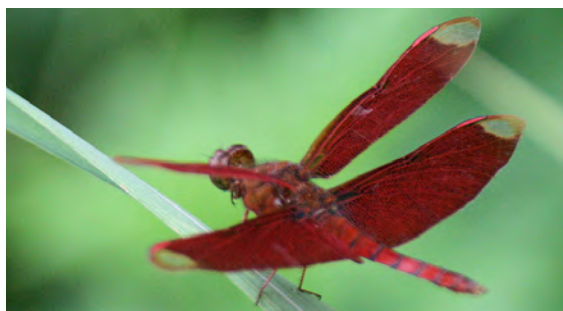
date: 8 August 2009



濕地狹翅蜻

BlueChaser

date: 16 August 2009



網脈蜻

Russet-Percher

date: 16 August 2009



赤褐灰蜻

Common-Red-Skimmer

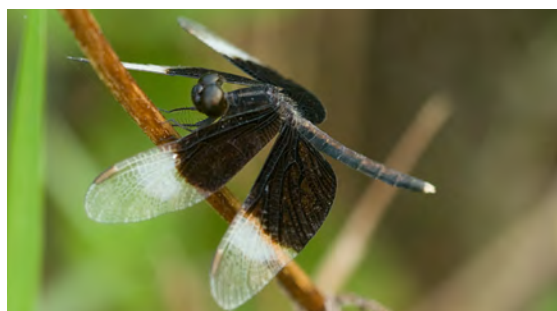
date: 16 August 2009



狹腹灰蜻

Green Skimmer

date: 8 August 2009



截斑脈蜻

Pied Percher

date: 16 August 2009



生態教育及資源中心
Eco-Education & Resources Centre

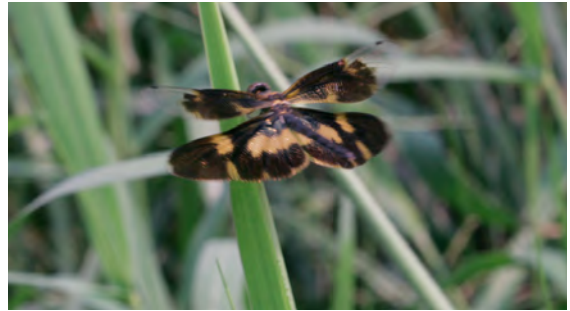
石崗菜園村 蜻蜓調查記錄

Dragonflies in Choi Yuen Village, Shek Kong



黃狹扇螳
Yellow Featherlegs

date: 22 August 2009



斑麗翅蜻
Variegated Flutterer

date: 22 August 2009



黃蜻
Wandering glider

date: 22 August 2009



霸王葉春蜓
Common Flangetail

date: 22 August 2009



於《石崗菜園村動物調查記錄》中發現，但並未於香港鐵路公司提交的《廣深港高速鐵路環境影響評估報告》中提及的生物物種列表

	Family	Common Name	品種	Scientific Name	Photo	Remarks	Status	Reference
1	BulBuls	Sooty-headed Bulbul	白喉紅臀鶇	<i>Pycnonotus aurigaster</i>	V		Common / Resident	A Photographic Guide to the Birds of HK / 2009
2	Cisticolas & Prinias	Zitting Cisticola	棕扇尾鶇	<i>Cisticola juncidis (Tinnabulans)</i>				
3	Cuckoos	Indian Cuckoo	四聲杜鵑	<i>Cuculus micropterus</i>			Common / Resident	
4		Large Hawk Cuckoo	鷹鵑	<i>Hierococcyx sparveriioides (sparveriioides)</i>			Common / Resident	
5	Eagles & Hawks	Bonelli's Eagle	白腹隼鵂	<i>Hieraetus fasciatus</i>	V	石崗河	Rare / Resident	
6		Common Kestrel	紅隼	<i>Falco tinnunculus (interstinctus)</i>	V		Common / Winter Visitor	
7		Crested Seprent Eagle	蛇鵂	<i>Spilornis cheela</i>			Common / Resident	
8	Flowerpeckers	Scarlet-Backed Flowerpecker	朱背啄花鳥	<i>Dicaeum cruentatum</i>	V		Common / Resident	
9	Hérons & Egrets	Black-Crowned Night Heron	夜鷺	<i>Nycticorax nycticorax</i>	V		Common / Resident	
10	Swifts	House Swift	小白腰雨燕	<i>Apus nipalensis</i>	V		Common / Resident	

	Family	Species	品種	Scientific Name	Photo	Remarks	Status	Reference
1	Coenagrionidae	Orange-Tailed Midget	杯斑小蟌	<i>Agriocnemis femina oryzae</i>	V	紅色型	Abundant / Widespread	Field Guide to the Dragonflies of HK / 2003
2		Orange-Tailed Sprite	疏球橘黃蟌	<i>Ceriagrion auranticum ryukyuanum</i>	V		Abundant / Widespread	
3	Protoneuridae	Black Treadtail	烏齒原蟌	<i>Prodasineura autumnalis</i>	V		Abundant / Widespread	
4	Libellulidae	Blue Chaser	濕地狹翅蜻	<i>Potamarcha congener</i>	V		Common / Widespread	
5		Blue Dasher	藍額疏脈蜻	<i>Brachydiplax chalybea flavovittata</i>	V		Common / Widespread	
6		Indigo Dropwing	慶褐蜻	<i>Trithemis festiva</i>	V		Abundant / Widespread	
7		Pied Percher	截斑脈蜻	<i>Neurothemis tullia tullia</i>	V		Common / Widespread	
8		Russet Percher	網脈蜻	<i>Neurothemis fulvia</i>	V		Abundant / Widespread	

	Family	Common Name	品種	Scientific Name	Photo	Remarks	Status	Reference
1	Birdwings, Swallowtails	Common Birdwing	裳鳳蝶	<i>Troides helena</i>			Uncommon	Butterfly Watching in HK / 2002
2		Lime Butterfly	達摩鳳蝶	<i>Papilio demoleus</i>	V		Common	
3		Paris Peacock	巴黎翠鳳蝶	<i>Papilio paris</i>	V		Very Common	
4	Blues	Lesser Grass Blue	毛眼灰蝶	<i>Zizina otis</i>	V		Common	
5		Plains Cupid	曲紋紫灰蝶	<i>Chilades pandava</i>	V		Uncommon	
6	Browns	Branded Tree Brown	白帶黛眼蝶	<i>Lethe confusa</i>	V		Common	
7		Common Evening Brown	暮眼蝶	<i>Melanitis leda</i>	V		Very Common	
8	Fauns, Duffers	Large Faun	串珠環蝶	<i>Faunis eumeus</i>	V		Common	
9		Metalmarks Plum Judy	蛇目褐蛺蝶	<i>Abisara echerius</i>	V		Very Common	
10		Punchinello	波蛺蝶	<i>Zemeros flegyas</i>	V		Common	
11	Nymphs	Blue Admiral	琉璃蛺蝶	<i>Kaniska canace</i>	V		Common	
12		Common Jester	散紋盛蛺蝶	<i>Symbrenthia lila</i>	V		Common	
13		Common Mapwing	網絲蛺蝶	<i>Cyrestis thyodamas</i>	V		Common	
14		Grey Pansy	波紋眼蛺蝶	<i>Junonia atlites</i>	V		Common	
15		Indian Fritillary	斐豹蛺蝶	<i>Argyreus hyperbius</i>	V		Common	
16		Lemon Pansy	蛇眼蛺蝶	<i>Junonia lemonias</i>	V		Uncommon	
17	Skippers	Grass Demon	姜弄蝶	<i>Udaspes folus</i>	V		Uncommon	
18		Indian Palm Bob	素弄蝶	<i>Suastus gremius</i>	V		Common	
19	Tigers, Crows	Glassy Tiger	絹斑蝶	<i>Parantica aglea</i>			Very Common	
20		Ceylon Blue Glassy Tiger	擬旖斑蝶	<i>Ideopsis similis</i>			Very Common	
21		Common Indian Crow	幻紫斑蝶	<i>Euploea core</i>	V		Very Common	
22	Whites, Yellows	Red-base Jezebel	報喜斑粉蝶	<i>Delias pasithoe</i>	V		Very Common	
23		Three-spot Grass Yellow	槲黃粉蝶	<i>Eurema blanda</i>	V		Uncommon	