

Issue No. : Issue 1
Issue Date : Oct 2016
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**AGREEMENT NO. CE 65/2013 (EP)
POST-CONSTRUCTION ECOLOGICAL
MONITORING OF RIVER IMPROVEMENT
WORKS IN UPPER LAM TSUEN RIVER
SHE SHAN RIVER AND UPPER TAI PO
RIVER – INVESTIGATION**

**POST-CONSTRUCTION ECOLOGICAL
MONITORING REPORT (No. 47)**

Prepared By:

ALLIED ENVIRONMENTAL CONSULTANTS LTD.

For:

Drainage Services Department

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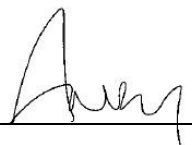
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**Agreement No. CE65/2013(EP)
Post-Construction Ecological Monitoring of River
Improvement Work in Upper Lam Tsuen River, She Shan
River and Upper Tai Po River – Investigation**

**Post-Construction Ecological Monitoring Report (No. 47)
Upper Lam Tsuen River**

November 2017



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19 December, 2017

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19 December, 2017

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Post-Construction Ecological Monitoring Report (No. 47)

Upper Lam Tsuen River

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1 Introduction

- 1.1 Agreement No. CE65/2013(EP) Post-Construction Ecological Monitoring of River Improvement Work in Upper Lam Tsuen River, She Shan River and Upper Tai Po River – Investigation required a post-construction ecological monitoring programme when the project completed. The collected data are mainly used to assess ecological recovery process and effectiveness of ecological migration proposed and enforced during the construction period.
- 1.2 The scope of the ecological monitoring was detailed in EM & A Manual of the project. In brief, the survey aimed to collect data on abiotic factors such as water quality, substratum characteristics, water flow as well as flora and fauna.
- 1.3 China Hong Kong Ecology Consultants Ltd. was committed by Allied Environmental Consultants Ltd (AEC) to undertake the ecological monitoring tasks for the project for December 2014.
- 1.4 This is the number 47 post-construction ecological monitoring report for the project conducted **on 16th of November 2017**. It contains the following subsections:
 - Summary of major points
 - Monitoring Methods and Results
 - Summary and Comments

2 Summary of Major Points

- Field ecological monitoring was undertaken on **16th of November 2017**;
- Fauna and flora along the drainage project sections are in a process of re-establishing or restoration; Plants on river bed were experiencing seasonal changes in abundance and phenological appearance;
- The species richness of odonata was lower than the record of last month;
- Bird diversity and abundance were in natural fluctuation;
- Adult Hong Kong Newt was recorded in the potential habitats along the Lam Tsuen River; and
- Fish abundance increased in this month.

3 Monitoring Methodology

3.1 Riparian Vegetation

Riparian vegetation, including aquatic and emergent, was sampled using line transects along the affected river channel and riparian habitat. Species, relative abundance and average heights were recorded. Vegetation surveys were conducted at four selected belt transects with two located at the lower portion (T3 and T4) of the river channel and another two at the upper section (T1 and T2) of the river respectively (**Figure 1**). The belt transects was run across the river channel in order to collect quantitative data of the vegetation, e.g., species inventory, height, percentage cover. Qualitative data of plants was collected by recording plant species, relative abundance along line transect. Nomenclature and protection status of the species followed those documented in Lai *et al.* (2004) and Hong Kong Herbarium (2015).

3.2 Avifauna

Avifauna survey was conducted during post construction monitoring period. Special attention was given to the river channel and corridor area which birds used as feeding and foraging habitat. Avifauna surveys were undertaken in the early morning plus species recorded in the rest of the day when conducting other taxonomic groups (benthic, fish, insect) monitoring. Numerical abundance was recorded at fixed count points within a radius of 30-50m according to landscape feature and visual penetration extent. The duration of the point count of birds was standardized for 10 minutes at each location in order to collect comparable data. Transect count along accessible section of river channel were used in order to collect qualitative data. Binoculars and digital camera were the main items of equipment used. Nomenclature and protection status of the species follows the AFCD website (www.hkbiodiversity.net) and Carey *et al.* (2001).

The point count was conducted at four locations with two located at the lower portion of the river channel (T3&T4) and the other two located at the upper section of the river (T1&T2). The point count and survey transect locations for the bird survey and sampling sites for surveys of other faunal groups and flora were presented in **Figure 1**.

3.3 Adult Odonata Survey

Adult Odonata survey was conducted along transects (**Figure 1**). Binoculars, digital camera and hand net were utilized to aid identification. Numerical abundance, species identity and other notable behavior were recorded. Nomenclature and protection status of the species followed those documented in the AFCD website (www.hkbiodiversity.net), Wilson *et al.* (2004) and Tam *et al.* (2011). Adult Odonata survey was conducted along line transects in parallel with river channel within the works area where access was permitted.

3.4 Aquatic Macro-invertebrates

Macro-invertebrates in the river channel were surveyed. Sampling was conducted at five sampling locations including two sites located at the lower portion (T3 and T4) of the river channel and another two sites at the upper section (T1 and T2) of the river, as well as the reference site. Those sampling sites covered major type of river habitats, e.g. river pool and riffle (**Figure 1**). Five replicates were taken at each sampling point and pool together for further sample sorting and identification. Kick sampling and hand netting were the survey methodologies for river organisms. Dissection microscope and digital camera were used to aid identification and enumeration. Numerical abundance and species identity were recorded. Nomenclature and protection status of the species has followed those documented in the AFCD website (www.hkbiodiversity.net) and other literatures such as Dudgeon (1994).

3.5 Fish and Newt

Fish community and *Paramesotriton hongkongensis* at the specified river channel was monitored by live trapping, hand netting and direct observation methods.

Sampling was conducted at five sampling locations including two sites located at the lower portion (T3 and T4) of the river channel and another two sites at the upper section (T1 and T2) of the river, as well as reference site. Those sampling sites covered major type of river habitats, e.g. river pool and riffle (**Figure 1**). The number of the observed fish and newt was estimated and recorded. Nomenclature and protection status of the species followed those documented in the AFCD website (www.hkbiodiversity.net) and Lee *et al.* (2004).

3.6 Abiotic Data Collection

3.6.1 Water Quality Monitoring

Dissolved oxygen level, pH value, conductivity, salinity, BOD and nutrient level (nitrate and ammonium) were measured and analyzed by conventional methods in situ or in laboratory. The instruments for measuring dissolved oxygen level, pH value, conductivity, salinity were model: DO-5510, AZ8685, AZ8361 and AZ8374 respectively. All the instruments were calculated every monitoring month according to the operation manuals in order to obtain the precise result. BOD test took 5 days to complete within darkness incubator with stable temperature at 20°C and was performed using model: DO-5510 for measuring dissolved oxygen. Nutrient levels including nitrate and ammonia were performed in laboratory by applying the In-house method SOP056 (FIA) and SOP057 (FIA) respectively.

3.6.2 Sediment Characteristics

Sediment/substrate characteristics were recorded of sediment cover in percentage e.g. mud, sand, rock, boulder and cemented bottom in the river bed at sampling sites.

3.6.3 Water Flow

Water flow rates in river channel were measured by recording the time taken for a floating object (e.g. floating ball) to cover a measured distance.

The sampling locations for surveys were presented in **Figure 1**.

4 Monitoring Results

4.1 Vegetation

Vegetation has generally covered the gabion and river bed along Lam Tsuen River (Photos 1-3). In total, 75 flora species were recorded within the survey transects along the river course. Some of the vegetation at river bed has been washed out by flooding, especially vegetation in lower section of the river in this month. The recorded floras were generally in good health, and the height of the dominated riparian grass and herb species were in a range from 0.3m to 1.5m as observed along survey transect. Common flora species were shown in the **Table 4.1** marked with relative abundance sign “++”. Results of vegetation survey and belt transect survey were presented in **Table 4.1** and **Table 4.2**. **Figure 1** shows the transect line for the flora surveys.

4.2 Fauna

4.2.1 Avifauna

An avifauna survey was undertaken along survey transects and at four selected point count locations. In total, 16 species of birds were recorded during the bird survey and 4 of the total were wetland dependent species including *Egretta garzetta* (Photo 4), *Ardeola bacchus* (Photo 5), *Motacilla alba* and *Motacilla cinerea*. They were commonly observed foraging in the river channel. *Pycnonotus jocosus* was a dominated species along the river. All the birds in Hong Kong are under protection of Wild Animals Protection Ordinance (Cap. 170). Among the recorded species, *Ardeola bacchus* and *Egretta garzetta* are classified as Regional Concern by Fellowes *et al.* (2002). Apart from species mentioned above, the others recorded in Lam Tsuen River were common species in Hong Kong. Transect and Point Count locations were shown on **Figure 1**. Result of bird survey was presented in the **Table 4.3**.

4.2.2 Adult Odonata Survey

Odonata survey was performed, and a list of recorded odonata species at Upper Lam Tsuen River is shown in **Table 4.4**. In total, 7 odonata species were recorded during the survey and the recorded species were common species and widely distributed in Hong Kong. The result obtained this month is similar to previous surveys conducted in approximate period of last year. Species richness in this month decreased in comparison with the record of last month. Most of the odonata species in Hong Kong has the peak emergence from spring to late summer. The decrease in abundance of odonata in this month was due to seasonality. It is expected that number of odonata will decrease in coming dry season (Wilson *et al.*, 2004 & Tam *et al.*, 2011). Sampling location was shown in **Figure 1**.

4.2.3 Aquatic Macro-invertebrates

Upper Lam Tsuen River was flowing with constant water during survey (Photo 6). The river benthic fauna collected was mainly comprised of insects, molluscs and crustaceans (Photos 8-9). *Pomacea canaliculata* was found abundant along

the river. Details of recorded of river benthic fauna refers to **Table 4.5**. Sampling location was shown on **Figure 1**.

4.2.4 Hong Kong Newt

Surveys of Hong Kong Newt were conducted (Photo 6) at Upper Lam Tsuen River. Adult Hong Kong Newt was captured at the Lam Tsuen River where the habitat consisted of riparian vegetation during the survey (Photo 7). Riparian vegetation grown along the channel especially along water margin could provide shelter and breeding habitat for Hong Kong Newt. Hong Kong Newt is listed in Wild Animals Protection Ordinance (Cap. 170) and classified as “Near Threatened” under IUCN Red List Status and as “Potential Global Concern” by Fellowes *et al.* (2002). Record of Hong Kong Newts can be referred to **Table 4.6**.

4.2.5 River Fish Fauna

Fish surveys were performed at Upper Lam Tsuen River during field monitoring. In total, 18 species of freshwater fish, including species recorded from reference site, were recorded. *Oreochromis niloticus*, *Zacco platypus* and *Rhinogobius* spp were the dominated species in the river. *Acrossocheilus parallens* is a rare freshwater fish that only recorded in few of reservoir catchments and streams in Hong Kong (Lee *et al.*, 2004) and listed as Global Concern by Fellowes (2002). It was observed along the surveyed river with pool. Except *Acrossocheilus parallens*, *Parazacco spilurus* is classified as Vulnerable in China Red Data Book and observed along the river with low abundance. Fish counting at 2 x 2 meter area were performed and number of fish individuals increased in this month. Details of recorded of fish fauna refers to **Table 4.6**. Sampling location was shown on **Figure 1**.

4.3 **Abiotic Data**

Data on water quality and major river hydrological feature (water flow and substratum) of the river were collected and are presented in the **Table 4.7**.

Generally, the water was not polluted and nutrient levels were generally low. Results of water test were presented in the **Table 4.7**.

The river substratum was comprised of over 75-93% stones or rocks in most of the river sections with moderate water flow (up to 0.2m/second at pool and 0.5m/second at riffle).

5 Summary and Commentary

Post construction ecological monitoring was carried out in November 2017 and relevant biotic and abiotic data was collected according to project specification and EM & A Manual. Benthic fauna was temporally de-faunated in river sections due to river bed engineering works during construction period between 2008 and early 2013 and is under recovery process after that period. Adult Hong Kong Newt was recorded at river channel where the river margin covered with riparian vegetation. *Acrossocheilus parallens*, a rare freshwater fish species in Hong Kong, was observed at a few locations in the river channel with pool. In addition to *Acrossocheilus parallens*, *Parazacco spilurus* recorded in the river is also considered with conservation interest and observed along the river with low abundance.

Aquatic and riparian vegetation along river channel was re-established. Vegetation has generally covered the gabion and covered the river bed along Upper Lam Tsuen River.

The water quality of the surveyed river was not polluted although the river receives low concentration of nutrients from the nearby agriculture lands and resident houses.

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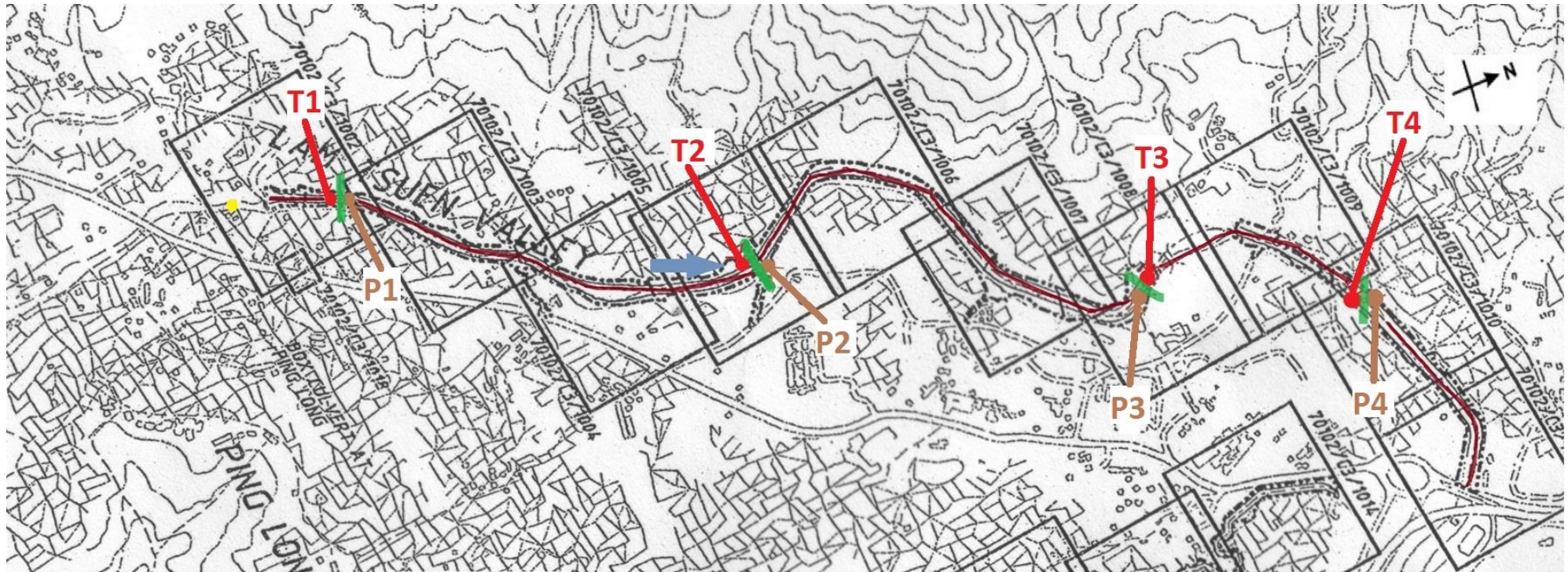
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FIGURES



Legend

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> — Belt transect -Vegetation -Sediment characteristics | <ul style="list-style-type: none"> ● Sampling station -Fish -Aquatic macroinvertebrate -Water quality and flow rate | <ul style="list-style-type: none"> ● Point count location -Avifauna |
| <ul style="list-style-type: none"> ● Reference sample | | <ul style="list-style-type: none"> — Line transect -Avifauna -Adult Odonate -Vegetation |

Figure1. Sampling Location of Ecological Survey and Monitoring at Upper Lam Tsuen River, Tai Po.

PHOTOS



Photo 1 : General view of the river (Lower section)



Photo 2 : General view of the river (Middle section)



Photo 3 : General view of the river (Upper section)



Photo 4 : Avifauna – *Egretta garzetta*



Photo 5 : Avifauna – *Ardeola bacchus*



Photo 6 : Kick Sampling



Photo 7. Hong Kong Newt



Photo 8. Aquatic sample



Photo 9. Aquatic sample

TABLE

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

Family	Species name	Species name in Chinese	Baseline monitoring	Impact monitoring						Impact monitoring				Post Construction monitoring			Post Construction monitoring							
			Jul to Aug 08	Jan-09	Jul-09	Jan-10	Jul-10	Jan-11	Jul-11	Jan-12	Jul-12	Aug-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	
Riparian Plant																								
Acanthaceae	<i>Ruellia coerulea</i>	蘭花草																						
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜																						
Amaranthaceae	<i>Celosia argentea</i>	青葙	+	+	+	+	+	+	+	+				++	++	+	+	+	+	+	+	++	++	++
Amaranthaceae	<i>Amaranthus viridis</i>	野苋		+	+	+	+	+	+	+	+	+	+	++	++	++	++	++	++	++	++	++	++	++
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++
Amaranthaceae	<i>Alternanthera sessilis</i>	蓮子草																						
Anacardiaceae	<i>Rhus hypoleuca</i>	白背漆																						
Annonaceae	<i>Uvaria macrophylla</i>	紫玉盤																+	+	+	+	+	+	+
Apiaceae	<i>Oenanthe javanica</i>	水芹																++	+	+	+	+	+	+
Apiaceae	<i>Centella asiatica</i>	崩大碗																+	+	+	+	+	+	+
Araceae	<i>Alocasia odora</i>	海芋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Araceae	<i>Colocasia esculenta</i>	芋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Araceae	<i>Pistia stratiotes</i>	大藻		+		+	+	+										+	+			+	+	+
Arecaceae	<i>Rhapis excelsa</i>	棕竹			+	+	+	+												+	+	+	+	+
Asteraceae	<i>Bidens alba</i>	白花鬼針草	+	+	+	+	+	+	+	+	+	+	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	++	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++	++	++	++	++	++	++
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Emilia sonchifolia</i>	一點紅		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	++	++	++
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜		+	+	+	+	+	+						+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Conyza canadensis</i>	小蓬草							+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Youngia japonica</i>	黃鶉菜																+	+	+	+	+	+	+
Asteraceae	<i>Eclipta prostrata</i>	鱧腸																+	+	+	+	+	+	+
Asteraceae	<i>Spilanthes paniculata</i>	金鈕扣																+	+	+	+	+	+	+
Asteraceae	<i>Wedelia trilobata</i>	三裂葉蟛蜞菊																						
Asteraceae	<i>Sonchus arvensis</i>	苣荳菜																						
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																		+	+	+	+	+
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨												+	+	+	+	+	+	+	+	+	+	+
Brassicaceae	<i>Cardamine flexuosa</i>	碎米蕒		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜		+	+	+	+	+						+	+++	+++	+++	+	+	+	+	+	++	++
Brassicaceae	<i>Rorippa indica</i>	塘葛菜								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Brassicaceae	<i>Capsella bursa-pastoris</i>	齊菜																+	+	+	+	+	+	+
Buddlejaceae	<i>Buddleja asiatica</i>	白背楓																+	+	+	+	+	+	+

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

Family	Species name	Species name in Chinese	Baseline monitoring	Impact monitoring							Impact monitoring				Post Construction monitoring			Post Construction monitoring						
			Jul to Aug 08	Jan-09	Jul-09	Jan-10	Jul-10	Jan-11	Jul-11	Jan-12	Jul-12	Aug-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Caryophyllaceae	<i>Drymaria cordata</i>	荷蓮豆																+	+	+	+	+	+	+
Caryophyllaceae	<i>Myosoton aquaticum</i>	鵝腸菜																+	+	+	+	+	+	+
Commelinaceae	<i>Commelina diffusa</i>	節節草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍		+	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++	++	++	++	++	++
Convolvulaceae	<i>Pharbitis nil</i>	牽牛				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Convolvulaceae	<i>Ipomoea aquatica</i>	蘿菜												+	+	+	+	+	+	+	+	+	+	+
Cucurbitaceae	<i>Solena amplexicaulis</i>	茅瓜																+	+	+	+	+	+	+
Cuscutaceae	<i>Cuscuta australis</i>	南方菟絲子																						
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																+	+	+	+	+	+	+
Cyperaceae	<i>Cyperus sp.</i>	莎草																+	+	+	+	+	+	+
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Euphorbiaceae	<i>Bischofia javanica</i>	秋楓																						
Fabaceae	<i>Pueraria lobata</i>	野葛	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fabaceae	<i>Crotalaria pallida</i>	豬屎豆								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fabaceae	<i>Sesbania cannabina</i>	田菁												+	+	+	+	+	+	+	+	+	+	+
Fabaceae	<i>Dalbergia benthamii</i>	兩廣黃檀																						
Fabaceae	<i>Pueraria lobata var. thomsonii</i>	粉葛																						
Lauraceae	<i>Machilus breviflora</i>	短序潤楠																						
Lauraceae	<i>Machilus pauhoi</i>	刨花潤楠																						
Magnoliaceae	<i>Michelia alba</i>	白蘭	+	+	+	+	+	+										+	+	+	+	+	+	+
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花																	+	+	+	+	+	+
Mimosaceae	<i>Acacia confusa</i>	台灣相思	+	+	+	+	+	+										+	+	+	+	+	+	+
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Mimosaceae	<i>Mimosa pudica</i>	含羞草									+	+	+	+	+	+	+	+	+	+	+	+	+	+
Mimosaceae	<i>Calliandra haematocephala</i>	紅絨球																						
Moraceae	<i>Ficus hispida</i>	對葉榕	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Moraceae	<i>Ficus variegata</i>	青果榕																						
Moraceae	<i>Ficus subpisocarpa</i>	筆管榕																						
Moraceae	<i>Ficus microcarpa</i>	細葉榕																						
Musaceae	<i>Musa paradisiaca</i>	大蕉	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Myrtaceae	<i>Cleistocalyx nervosum</i>	水翁																	+	+	+	+	+	+
Nyctaginaceae	<i>Bougainvillea spectabilis</i>	勒杜鵑	+	+	+	+	+	+											+	+	+	+	+	+

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

Family	Species name	Species name in Chinese	Baseline monitoring	Impact monitoring					Impact monitoring				Post Construction monitoring			Post Construction monitoring							
			Jul to Aug 08	Jan-09	Jul-09	Jan-10	Jul-10	Jan-11	Jul-11	Jan-12	Jul-12	Aug-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
Sterculiaceae	<i>Sterculia lanceolata</i>	假蒺藜															+	+	+	+	+	+	+
Sterculiaceae	<i>Byttneria aspera</i>	刺果藤															+	+	+	+	+	+	+
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨															+	+	+	+	+	+	+
Thelypteridaceae	<i>Macrothelypteris torrestiana</i>	普通針毛蕨															+	+	+	+	+	+	+
Tiliaceae	<i>Microcos nervosa</i>	布渣葉																					
Ulmaceae	<i>Celtis sinensis</i>	朴樹	+	+	+	+	+	+									+	+	+	+	+	+	+
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻																+	+	+	+	+	+
Ulmaceae	<i>Trema tomentosa</i>	山黃麻									+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pilea microphylla</i>	透明草			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Duranta erecta</i>	假連翹																					
Urticaceae	<i>Boehmeria nivea</i>	苧麻			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Vitaceae	<i>Cayratia corniculata</i>	角花烏蘘莓	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Floating Plant																							
Lemnaceae	<i>Lemna minor</i>	浮萍		+													+	+	+	+	+	+	+
Submerged Plant																							
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻															+	+	+	+	+	+	+
No. of species			22	38	40	44	44	42	34	40	37	39	47	49	56	62	91	92	93	94	94	94	94

Note:

+, occurred; ++, common; +++, Species abundant in the study area

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

Family	Species name	Species name in Chinese	Post Construction monitoring							Post Construction monitoring				Post Construction monitoring			Post Construction monitoring				
			Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	
Sterculiaceae	<i>Sterculia lanceolata</i>	假蒺藜	+	+																+	+
Sterculiaceae	<i>Byttneria aspera</i>	刺果藤	+	+																	
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thelypteridaceae	<i>Macrothelypteris torrestiana</i>	普通針毛蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Tiliaceae	<i>Microcos nervosa</i>	布渣葉																		+	+
Ulmaceae	<i>Celtis sinensis</i>	朴樹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Trema tomentosa</i>	山黃麻	+	+																+	+
Urticaceae	<i>Pilea microphylla</i>	透明草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Duranta erecta</i>	假連翹			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Boehmeria nivea</i>	苧麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Vitaceae	<i>Cayratia corniculata</i>	角花烏蘘莓	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Floating Plant																					
Lemnaceae	<i>Lemna minor</i>	浮萍	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Submerged Plant																					
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
No. of species			94	96	63	64	64	66	64	64	63	63	63	65	65	65	65	65	65	74	74

Note:

+, occurred; ++, common; +++, Species abundant in the study area

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

			Post Construction monitoring															
Family	Species name	Species name in Chinese	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	May-17	Jun-17	Jul-17
Sterculiaceae	<i>Sterculia lanceolata</i>	假蒺藜	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sterculiaceae	<i>Bytneria aspera</i>	刺果藤																
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thelypteridaceae	<i>Macrothelypteris torrestiana</i>	普通針毛蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Tiliaceae	<i>Microcos nervosa</i>	布渣葉	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Celtis sinensis</i>	朴樹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Trema tomentosa</i>	山黃麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pilea microphylla</i>	透明草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Duranta erecta</i>	假連翹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Boehmeria nivea</i>	苧麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Vitaceae	<i>Cayratia corniculata</i>	角花烏蘘莓	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Floating Plant																		
Lemnaceae	<i>Lemna minor</i>	浮萍	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Submerged Plant																		
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
No. of species			74	74	74	74	75	75	75	75	75	75	75	75	75	75	75	75

Note:

+, occurred; ++, common; +++, Species abundant in the study area

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

			Post Construction monitoring			
Family	Species name	Species name in Chinese	Aug-17	Sep-17	Oct-17	Nov-17
Riparian Plant						
Acanthaceae	<i>Ruellia coerulea</i>	蘭花草				
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	+	+	+	+
Amaranthaceae	<i>Celosia argentea</i>	青葙	+	+	+	+
Amaranthaceae	<i>Amaranthus viridis</i>	野苋	+	+	+	+
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	+	+	+	+
Amaranthaceae	<i>Alternanthera sessilis</i>	蓮子草				
Anacardiaceae	<i>Rhus hypoleuca</i>	白背漆				
Annonaceae	<i>Uvaria macrophylla</i>	紫玉盤				
Apiaceae	<i>Oenanthe javanica</i>	水芹	+	+	+	+
Apiaceae	<i>Centella asiatica</i>	崩大碗				
Araceae	<i>Alocasia odora</i>	海芋	+	+	+	+
Araceae	<i>Colocasia esculenta</i>	芋	+	+	+	+
Araceae	<i>Pistia stratiotes</i>	大藻				
Arecaceae	<i>Rhapis excelsa</i>	棕竹				
Asteraceae	<i>Bidens alba</i>	白花鬼針草	++	++	++	++
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	++	++	++	++
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊	+	+	+	+
Asteraceae	<i>Emilia sonchifolia</i>	一點紅	+	+	+	+
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	+	+	+	+
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜	+	+	+	+
Asteraceae	<i>Conyza canadensis</i>	小蓬草	+	+	+	+
Asteraceae	<i>Youngia japonica</i>	黃鶉菜	+	+	+	+
Asteraceae	<i>Eclipta prostrata</i>	鱧腸	+	+	+	+
Asteraceae	<i>Spilanthes paniculata</i>	金鈕扣	+	+	+	+
Asteraceae	<i>Wedelia trilobata</i>	三裂葉蟛蜞菊	+	+	+	+
Asteraceae	<i>Sonchus arvensis</i>	莧莧菜	+	+	+	+
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨	+	+	+	+
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨				
Brassicaceae	<i>Cardamine flexuosa</i>	碎米蕒	+	+	+	+
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜	+	+	+	+
Brassicaceae	<i>Rorippa indica</i>	塘葛菜				
Brassicaceae	<i>Capsella bursa-pastoris</i>	齊菜	+	+	+	+
Buddlejaceae	<i>Buddleja asiatica</i>	白背楓	+	+	+	+

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

			Post Construction monitoring			
Family	Species name	Species name in Chinese	Aug-17	Sep-17	Oct-17	Nov-17
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明				
Caryophyllaceae	<i>Drymaria cordata</i>	荷蓮豆				
Caryophyllaceae	<i>Myosoton aquaticum</i>	鵝腸菜				
Commelinaceae	<i>Commelina diffusa</i>	節節草	++	++	++	++
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍	++	++	++	++
Convolvulaceae	<i>Pharbitis nil</i>	牽牛				
Convolvulaceae	<i>Ipomoea aquatica</i>	蘿菜				
Cucurbitaceae	<i>Solena amplexicaulis</i>	茅瓜	+	+	+	+
Cuscutaceae	<i>Cuscuta australis</i>	南方菟絲子	+	+	+	+
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草	+	+	+	+
Cyperaceae	<i>Cyperus sp.</i>	莎草	+	+	+	+
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐	+	+	+	+
Euphorbiaceae	<i>Bischofia javanica</i>	秋楓	+	+	+	+
Fabaceae	<i>Pueraria lobata</i>	野葛	+	+	+	+
Fabaceae	<i>Crotalaria pallida</i>	豬屎豆				
Fabaceae	<i>Sesbania cannabina</i>	田菁				
Fabaceae	<i>Dalbergia benthamii</i>	兩廣黃檀	+	+	+	+
Fabaceae	<i>Pueraria lobata var. thomsonii</i>	粉葛				
Lauraceae	<i>Machilus breviflora</i>	短序潤楠	+	+	+	+
Lauraceae	<i>Machilus pauhoi</i>	刨花潤楠	+	+	+	+
Magnoliaceae	<i>Michelia alba</i>	白蘭				
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花	+	+	+	+
Mimosaceae	<i>Acacia confusa</i>	台灣相思	+	+	+	+
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡	+	+	+	+
Mimosaceae	<i>Mimosa pudica</i>	含羞草				
Mimosaceae	<i>Calliandra haematocephala</i>	紅絨球	+	+	+	+
Moraceae	<i>Ficus hispida</i>	對葉榕	+	+	+	+
Moraceae	<i>Ficus variegata</i>	青果榕	+	+	+	+
Moraceae	<i>Ficus subpisocarpa</i>	筆管榕	+	+	+	+
Moraceae	<i>Ficus microcarpa</i>	細葉榕	+	+	+	+
Musaceae	<i>Musa paradisiaca</i>	大蕉	+	+	+	+
Myrtaceae	<i>Cleistocalyx nervosum</i>	水翁				
Nyctaginaceae	<i>Bougainvillea spectabilis</i>	勒杜鵑				

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

			Post Construction monitoring			
Family	Species name	Species name in Chinese	Aug-17	Sep-17	Oct-17	Nov-17
Oleaceae	<i>Ligustrum sinense</i>	山指甲	+	+	+	+
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香				
Oxalidaceae	<i>Oxalis corniculata</i>	酢漿草	+	+	+	+
Plantaginaceae	<i>Plantago major</i>	車前草				
Poaceae	<i>Panicum repens</i>	荻骨草				
Poaceae	<i>Pennisetum purpureum</i>	象草	+	+	+	+
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草				
Poaceae	<i>Rhynchelytrum repens</i>	紅毛草				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	+	+	+	+
Poaceae	<i>Brachiaria mutica</i>	巴拉草	++	++	++	++
Poaceae	<i>Miscanthus floridulus</i>	五節芒	+	+	+	+
Poaceae	<i>Arundinella nepalensis</i>	石珍芒	+	+	+	+
Poaceae	<i>Panicum maximum</i>	大黍	+	+	+	+
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	+	+	+	+
Poaceae	<i>Arundo donax</i>	蘆竹	+	+	+	+
Poaceae	<i>Chloris virgata</i>	虎尾草				
Poaceae	<i>Setaria palmifolia</i>	棕葉狗尾草	+	+	+	+
Polygonaceae	<i>Rumex trisetifer</i>	假菠菜				
Polygonaceae	<i>Polygonum chinense</i>	火炭母	+	+	+	+
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼	+	+	+	+
Polygonaceae	<i>Polygonum glabrum</i>	光蓼				
Polygonaceae	<i>Polygonum perfoliatum</i>	紅板歸				
Polygonaceae	<i>Polygonum lapathifolium</i>	大馬蓼				
Portulacaceae	<i>Portulaca oleracea</i>	馬齒莧				
Ranunculaceae	<i>Ranunculus sceleratus</i>	石龍芮	+	+	+	+
Rubiaceae	<i>Adina pilulifera</i>	水團花				
Sapindaceae	<i>Dimocarpus longan</i>	龍眼				
Scrophulariaceae	<i>Scoparia dulcis</i>	野甘草				
Scrophulariaceae	<i>Lindernia anagallis</i>	長蒴母草				
Solanaceae	<i>Solanum nigrum</i>	龍葵	+	+	+	+
Solanaceae	<i>Lycopersicon esculentum</i>	番茄				
Solanaceae	<i>Solanum torvum</i>	水茄	+	+	+	+

Table 4.1. Flora species recorded along the Lam Tsuen River including riparian habitat.

			Post Construction monitoring			
Family	Species name	Species name in Chinese	Aug-17	Sep-17	Oct-17	Nov-17
Sterculiaceae	<i>Sterculia lanceolata</i>	假蒺藜	+	+	+	+
Sterculiaceae	<i>Byttneria aspera</i>	刺果藤				
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨	+	+	+	+
Thelypteridaceae	<i>Macrothelypteris torrestiana</i>	普通針毛蕨	+	+	+	+
Tiliaceae	<i>Microcos nervosa</i>	布渣葉	+	+	+	+
Ulmaceae	<i>Celtis sinensis</i>	朴樹	+	+	+	+
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻	+	+	+	+
Ulmaceae	<i>Trema tomentosa</i>	山黃麻	+	+	+	+
Urticaceae	<i>Pilea microphylla</i>	透明草	+	+	+	+
Verbenaceae	<i>Duranta erecta</i>	假連翹	+	+	+	+
Urticaceae	<i>Boehmeria nivea</i>	苧麻	+	+	+	+
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+
Vitaceae	<i>Cayratia corniculata</i>	角花烏蘘莓	+	+	+	+
Floating Plant						
Lemnaceae	<i>Lemna minor</i>	浮萍	+	+	+	+
Submerged Plant						
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻	+	+	+	+
No. of species			75	75	75	75

Note:

+, occurred; ++, common; +++, Species abundant in the study area

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Baseline monitoring								Impact monitoring				Impact monitoring				Impact monitoring									
			Jul-08				Aug-08				Jan-09				Jan-09				Jul-09									
			P1		P4		P1		P4		T1		T2		T3		T4		T1		T2		T3		T4			
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%					
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	0.4	40			0.4	40			0.4	30	0.5	5	1.5	5	1	15										
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	30			0.5	30							0.2	5			0.5	50			0.5	20				
Poaceae	<i>Pennisetum purpureum</i>	象草	3	20			3	20																				
Araceae	<i>Alocasia odora</i>	海芋	1	10			1	10			0.5	2					0.3	<1										
Caesalpiniaceae	<i>Cassia alata</i>	翅荑決明			1.2	10					1.2	10																
Magnoliaceae	<i>Michelia alba</i>	白蘭			6	10					6	10																
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.2	70					1.2	70	1.5	30					0.5	20			1.2	5				
Moraceae	<i>Ficus hispida</i>	對葉榕									1.5	5							1.5	5	4	5						
Asteraceae	<i>Mikania micrantha</i>	微甘菊									0.4	20					0.5	1	0.5	5	0.3	15	0.5	30				
Musaceae	<i>Musa paradisiaca</i>	大蕉													3	5							1.5	5				
Ulmaceae	<i>Celtis sinensis</i>	朴樹			6	10					6	10												6				
Araceae	<i>Pistia stratiotes L.</i>	大漂																						50				
Urticaceae	<i>Boehmeria nivea</i>	芋麻																										
Asteraceae	<i>Bidens alba</i>	白花鬼針草											0.5	5														
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																										
Solanaceae	<i>Solanum nigrum</i>	龍葵																										
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																										
Poaceae	<i>Miscanthus floridulus</i>	五節芒																					1.2	2				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐											3	5														
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																	0.2	10								
Commelinaceae	<i>Commelina diffusa</i>	節節草																	0.2	<1								
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																	0.5	<1								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																										
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																										
Verbenaceae	<i>Lantana camara</i>	馬纓丹																										
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																										
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																										
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																										
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																										
Amaranthaceae	<i>Celosia argentea</i>	青葙																										
Bare Ground												13		85			85		64			20		80		38		10

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Impact monitoring								Impact monitoring				Impact monitoring				Impact monitoring						
			Jan-10								Jul-10				Jul-10				Jan-11						
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																					0.8	5	
Fabaceae	<i>Pueraria lobata</i>	野葛		0.5	5			0.5	2		0.5	5													
Poaceae	<i>Pennisetum purpureum</i>	象草					2	5								1.2	10								
Araceae	<i>Alocasia odora</i>	海芋					1	5					1	10									0.5	3	
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																							
Magnoliaceae	<i>Michelia alba</i>	白蘭																							
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.8	40	0.9	50	1	15		0.8	20	0.9	30	1	60	1.5	30	0.8	5			1	30	1	15
Moraceae	<i>Ficus hispida</i>	對葉榕				4	5	0.5	30					4	5							4	5		
Asteraceae	<i>Mikania micrantha</i>	微甘菊		0.5	30	0.3	25				0.5	20	0.3	5			0.4	10	0.5	5	0.3	5	0.4	8	
Musaceae	<i>Musa paradisiaca</i>	大蕉					0.5	2																	
Ulmaceae	<i>Celtis sinensis</i>	朴樹																							
Araceae	<i>Pistia stratiotes L.</i>	大漂		0.05	5			2																	
Urticaceae	<i>Boehmeria nivea</i>	苧麻				0.3	5																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.4	50		0.3	5		0.4	20				0.5	10	0.4	10	0.4	20	0.5	5				
Poaceae	<i>Coix lacryma-jobi</i>	薏苡				1.5	2																		
Solanaceae	<i>Solanum nigrum</i>	龍葵																							
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草					1	30															1	5	
Poaceae	<i>Miscanthus floridulus</i>	五節芒																							
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																							
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																					0.5	5	
Commelinaceae	<i>Commelina diffusa</i>	節節草											0.5	20							0.4	10			
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																							
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																					0.5	5	
Convolvulaceae	<i>Pharbitis nil</i>	牽牛											0.5	10											
Verbenaceae	<i>Lantana camara</i>	馬纓丹																							
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																							
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																							
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																							
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																							
Amaranthaceae	<i>Celosia argentea</i>	青葙																							
Bare Ground				50		10		43		24		60		45		20		30		75		65		45	54

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Impact monitoring								Impact monitoring								Impact monitoring							
			Jul-11				Jan-12				Jul-12															
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.3	10						0.3	10						0.3	5								
Poaceae	<i>Pennisetum purpureum</i>	象草			1.2	2		2.5	10			2.5	5	2.5	5					2	5					
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅葉決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.8	10	1	5				0.8	10	1	2	1.5	60				0.8	10	1	5	1.5	20		
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	微甘菊	0.4	5	0.5	3		0.4	2	0.4	5	0.5	3		0.4	2	0.4	5	0.5	3	0.5	15	0.4	1		
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻				1.5	10																			
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.4	2	0.4	5	0.5	2	0.5	10	0.4	2	0.4	5	0.5	2	0.5	10	0.4	5	0.4	5	0.5	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																								
Solanaceae	<i>Solanum nigrum</i>	龍葵				2	3																			
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒																								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																								
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.4	10						0.3	3	0.4	5					0.4	2		0.3	5		
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹				0.5	2																			
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Amaranthaceae	<i>Celosia argentea</i>	青葙																								
Bare Ground				73		85		65		88		73		82		28		88		75		82		58	92	

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Impact monitoring								Impact monitoring								Post construction monitoring							
			Aug-13				Dec-13				Jan-14				Jan-14				Jan-14							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			0.5	5																				
Fabaceae	<i>Pueraria lobata</i>	野葛	0.3	15	0.3	5			0.3	10					0.3	10							0.3	10		
Poaceae	<i>Pennisetum purpureum</i>	象草												1.5	5								1.5	5		
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅葉決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.8	5	0.8	5	1	10	1	15	0.8	10	0.8	10			0.8	10	0.8	10						
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	25	0.5	10	0.5	10	0.4	3	0.5	10	0.5	5	0.5	10	0.4	10	0.5	10	0.5	5	0.5	10	0.4	10
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻					0.8	2																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.4	5	0.4	20	0.5	10	0.5	2	0.4	5			0.5	10			0.4	5			0.5	10		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																								
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒																								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																								
Commelinaceae	<i>Commelina diffusa</i>	節節草												0.3	5							0.3	5			
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡							1.2	5																
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Amaranthaceae	<i>Celosia argentea</i>	青葙												1	2							1	2			
Bare Ground				50		55		68		70		75		85		73		75		75		85		73	75	

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring																							
			Feb-14								Mar-14								Apr-14							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																0.3	2							
Fabaceae	<i>Pueraria lobata</i>	野葛						0.3	10									0.3	10			0.3	5	0.3	5	
Poaceae	<i>Pennisetum purpureum</i>	象草					1.5	5							1.5	5										
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅荑決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.8	10	0.8	10				1	13	1	13					0.5	5	0.6	10			0.6	10	
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10	0.5	5	0.5	10	0.4	10	0.5	10	0.5	5	0.5	10	0.4	10		0.3	5	0.3	15	0.3	5	
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.4	5			0.5	10			0.4	5			0.5	10			0.5	20	0.5	10	0.7	15	0.6	10
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																								
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒																								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																								
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.3	5							0.3	5			0.2	10			0.3	3				
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																		0.2	5	0.2	50	0.2	5	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Amaranthaceae	<i>Celosia argentea</i>	青葙				1	2							1	2											
Bare Gound				75		85		73	75		72		82		73		75		63		70		12	65		

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			May-14								Jun-14								Jul-14							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	0.3	2						0.3	2							0.5	4							
Fabaceae	<i>Pueraria lobata</i>	野葛				0.3	5		0.3	5				0.3	5	0.3	5					0.3	5	0.3	5	
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅荑決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.5	5	0.6	6			0.6	6	0.5	5	0.6	8			0.6	6	0.6	10	0.8	10		0.8	6	
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊		0.3	5	0.3	15		0.3	5		0.3	6	0.3	15	0.3	8		0.3	6	0.3	15	0.3	8		
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.5	20	0.5	10	0.7	15	0.6	10	0.5	20	0.5	10	0.7	15	0.6	10	0.5	20	0.5	12	0.7	18	0.6	10
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																								
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒																								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																								
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.2	8		0.3	3			0.2	8			0.3	3			0.2	8			0.3	3			
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜		0.2	2	0.2	2		0.2	1		0.2	2	0.2	2	0.2	1		0.3	1	0.3	1	0.3	1		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Amaranthaceae	<i>Celosia argentea</i>	青葙																								
Bare Gound				65		77		60		73		65		74		60		70		58		71		58		70

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring								Post construction monitoring										
			Aug-14				Sep-14				Oct-14				Nov-14																						
			T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4																			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	0.7	5						0.7	5																										
Fabaceae	<i>Pueraria lobata</i>	野葛			0.3	5	0.3	5				0.3	5	0.3	5									0.6	10							0.6	10				
Poaceae	<i>Pennisetum purpureum</i>	象草																																			
Araceae	<i>Alocasia odora</i>	海芋																						1.8	1							1.8	1				
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																																			
Magnoliaceae	<i>Michelia alba</i>	白蘭																																			
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.6	10	0.8	12		0.8	8	0.6	10	0.8	12		0.8	8	1	10	1.5	15	1.3	30	1	5	1	10	1.5	15	1.3	30	1	5					
Moraceae	<i>Ficus hispida</i>	對葉榕																																			
Asteraceae	<i>Mikania micrantha</i>	薇甘菊		0.3	6	0.3	15	0.3	8		0.3	8	0.3	15	0.3	10	0.3	15	0.3	15	0.3	15	0.3	15	0.3	15	0.3	18	0.3	18	0.3	18	0.3	18			
Musaceae	<i>Musa paradisiaca</i>	大蕉																																			
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																			
Araceae	<i>Pistia stratiotes L.</i>	大漂																																			
Urticaceae	<i>Boehmeria nivea</i>	芋麻																																			
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.5	20	0.6	12	0.7	15	0.6	10	0.5	20	0.6	12	0.7	15	0.6	10	0.5	5	0.8	12	0.7	10			0.5	5	0.8	12	0.7	10					
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																						2	5			2	5								
Solanaceae	<i>Solanum nigrum</i>	龍葵																																			
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																																			
Poaceae	<i>Miscanthus floridulus</i>	五節芒																																			
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																																			
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																																			
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10		0.3	5			0.3	10		0.3	5					0.3	10	0.8	20		0.3	20	0.3	12	0.8	22		0.3	20					
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																																			
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																			
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																																			
Verbenaceae	<i>Lantana camara</i>	馬纓丹																																			
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																																			
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜		0.3	1	0.3	1	0.3	1		0.3	1	0.3	2	0.3	1						0.3	2	0.1	1					0.3	2	0.1	1				
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																		2	30	2	15	2	10	1.8	5	2	25	2	13	2	10	1.8	5		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																																			
Amaranthaceae	<i>Celosia argentea</i>	青葙																						1.5	15					1.5	15						
Bare Ground				55		69		59		68		55		67		58		66		25		23		18		43		25		20		15		40			

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Stream				Transect				Stream				Transect				Stream				Transect				Stream				Transect			
			Dec-14		Jan-15		Feb-15		Mar-15		Dec-14		Jan-15		Feb-15		Mar-15		Dec-14		Jan-15		Feb-15		Mar-15		Dec-14		Jan-15		Feb-15		Mar-15	
T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4			
			Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																																
Fabaceae	<i>Pueraria lobata</i>	野葛					0.6	10					0.6	10					0.6	10									0.6	10				
Poaceae	<i>Pennisetum purpureum</i>	象草										3	15					3	15															
Araceae	<i>Alocasia odora</i>	海芋					1.8	1					1.8	1					1.8	1									1.8	1				
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																																
Magnoliaceae	<i>Michelia alba</i>	白蘭																																
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1	10	1.5	15	1.3	30	1	5	1	20	1	20	1.3	20	1	10	1	20	1	20	1.3	20	1	10	1	20	1.2	20	1.4	20	1	10
Moraceae	<i>Ficus hispida</i>	對葉榕																																
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	18	0.3	18	0.3	18	0.3	18	0.4	10	0.4	15	0.3	5	0.3	20	0.4	10	0.4	15	0.3	5	0.3	20	0.4	10	0.4	15	0.3	5	0.3	20
Musaceae	<i>Musa paradisiaca</i>	大蕉																																
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																
Araceae	<i>Pistia stratiotes L.</i>	大漂																																
Urticaceae	<i>Boehmeria nivea</i>	芋麻																																
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.5	5	0.8	12	0.7	10			1	10	0.4	15	1	15			1	10	0.7	15	1	15			1	10	0.7	15	1	15		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	2	5																														
Solanaceae	<i>Solanum nigrum</i>	龍葵																																
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																																
Poaceae	<i>Miscanthus floridulus</i>	五節芒																																
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																																
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊																																
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	12	0.8	22			0.3	20	0.4	10	0.4	20			0.3	20	0.5	10	0.5	20			0.3	20	0.5	10	0.4	20			0.3	20
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																																
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																																
Verbenaceae	<i>Lantana camara</i>	馬纓丹																																
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																																
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜			0.3	2	0.1	1					0.3	10	0.1	15					0.3	10	0.2	15					0.3	10	0.2	15		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香	2	25	2	13	2	10	1.8	5	2	30	2	10	2	5	1.8	5	2	30	2	10	2	5	2	5	2	30	2	10	2	5	2	5
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																																
Amaranthaceae	<i>Celosia argentea</i>	青葙				1.5	15																											
Bare Ground				25		20		15		40		20		20		30		19		20		20		30		19		20		20		30		19

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Apr-15				May-15				Jun-15															
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛						0.6	10														0.3	5		
Poaceae	<i>Pennisetum purpureum</i>	象草			3	15						2	15								2	15				
Araceae	<i>Alocasia odora</i>	海芋					1.8	1						0.8	1								0.8	1		
Caesalpiniaceae	<i>Cassia alata</i>	翅英決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.1	20	1.2	20	1.4	20	1	10	0.9	15	1	18	0.8	20	1	10	0.9	15	1	18	0.8	20	1	10
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.4	10	0.4	15	0.3	5	0.3	20	0.3	5	0.4	10	0.3	5	0.3	10	0.3	5	0.4	10	0.3	5	0.3	10
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	10	0.7	15	1	15			0.8	5	0.7	10	0.8	15			0.8	5	0.7	10	0.8	15		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																								
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒																								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	膨蜆菊																								
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.5	10	0.4	20			0.3	20	0.5	5	0.4	10			0.3	10	0.5	5	0.4	10			0.3	10
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜			0.3	10			0.2	15																
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香	2	30	2	10	2	5	2	5	1.2	10	1.1	5	1.4	5	1.3	5	1.2	10	1.1	5	1.4	5	1.3	5
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Amaranthaceae	<i>Celosia argentea</i>	青葙																								
Bare Gound				20		20		30		19		60		47		40		59		60		47		40		59

P1 – Point count location 1; P4 – Point count location 4

Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring							
			Stream				Stream				Stream				Stream			
			Jul-15		Jul-15		Jul-15		Jul-15		Aug-15		Aug-15		Aug-15		Aug-15	
Transect	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4		
			Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	10					0.4	5	0.5	10					0.4	5
Poaceae	<i>Pennisetum purpureum</i>	象草																
Araceae	<i>Alocasia odora</i>	海芋																
Caesalpiniaceae	<i>Cassia alata</i>	翅荑決明																
Magnoliaceae	<i>Michelia alba</i>	白蘭																
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.9	30	1.5	30	0.5	70	1	15	1	30	1.5	30	0.8	70	1	15
Moraceae	<i>Ficus hispida</i>	對葉榕																
Asteraceae	<i>Mikania micrantha</i>	微甘菊	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																
Ulmaceae	<i>Celtis sinensis</i>	朴樹																
Araceae	<i>Pistia stratiotes L.</i>	大漂																
Urticaceae	<i>Boehmeria nivea</i>	芋麻																
Asteraceae	<i>Bidens alba</i>	白花鬼針草					0.3	5						0.4	5			
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																
Solanaceae	<i>Solanum nigrum</i>	龍葵																
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草					0.6	2						0.6	2			
Poaceae	<i>Miscanthus floridulus</i>	五節芒																
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																
Asteraceae	<i>Wedelia chinensis</i>	錦娘菊	0.3	20	0.2	10					0.4	20	0.2	10				
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	20	0.2	20	0.2	5	0.4	20	0.3	20	0.2	20	0.2	5	0.4	20
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																
Verbenaceae	<i>Lantana camara</i>	馬纓丹																
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草				0.5	5	2	5					0.8	5	2	5	
Amaranthaceae	<i>Celosia argentea</i>	青葙																
Bare Ground				15		35		13		55		15		35		13		55

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Stream								Stream								Stream							
			Sep-15								Oct-15								Nov-15							
Transect	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4						
	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	10					0.4	5	0.5	10					0.4	5	0.5	10		0.4	5			
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	1.1	30	1.5	35	1	70	1.2	15	0.7	5	1.5	30	1	60	1.2	15	0.7	5	1.5	35	1	60	1.2	20
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草					0.4	5						0.4	10							0.4	10			
Poaceae	<i>Coix lacryma-jobi</i>	薏苡								1	5						1	5								
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草					0.6	2																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒								1	10						1	10								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	20	0.2	10				0.4	5						0.4	5								
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	20	0.2	20	0.2	5	0.4	20	0.3	10	0.2	20	0.2	5	0.4	20	0.3	10	0.2	20	0.2	5	0.4	25
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					0.8	5	2	5				1.5	10	2	5					1.5	10	2	5	
Amaranthaceae	<i>Celosia argentea</i>	青葙												0.4	5							0.4	5			
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜								0.3	20						0.3	20								
Bare Ground				15		30		13		55		30		45		20		55		30		40		20		45

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Dec-15								Jan-16								Feb-16							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	10				0.4	5	0.5	10					0.4	5	0.5	10				0.4	5		
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.8	5	1.5	35	1.2	60	1.2	20	0.3	5	0.3	20	0.3	30	0.3	10	0.3	5	0.3	20	0.3	30	0.3	10
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	苧麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草					0.4	10						0.4	10								0.4	10		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	5						1	5							1	5							
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1	10						1	10							1	10							
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5						0.4	5							0.4	5							
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.2	20	0.2	5	0.4	25	0.3	10	0.2	20	0.2	5	0.4	25	0.3	10	0.2	20	0.2	5	0.4	25
Asteraceae	<i>Erechites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜						0.2	10							0.2	10							0.2	10	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草				1.5	10	2	5				1.5	10	2	5						1.5	10	2	5	
Amaranthaceae	<i>Celosia argentea</i>	青葙				0.4	5						0.4	5								0.4	5			
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	20						0.3	20							0.3	20							
Bare Gound				30		40		20	35		30		55		50		45		30		55		50		45	

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Mar-16								Apr-16								May-16							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	10				0.4	5	0.5	8					0.4	5	0.5	5				0.4	5		
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.4	10	0.4	25	0.4	35	0.4	15	0.4	8	0.4	25	0.4	35	0.4	10	0.4	7	0.4	20	0.4	25	0.4	5
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	苧麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草					0.4	10							0.4	10							0.4	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	5						1	5							1	5							
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1	10							1	8						1	7							
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5						0.4	5							0.4	5							
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.2	20	0.2	5	0.4	25	0.3	8	0.2	20	0.2	5	0.4	20	0.3	7	0.2	15	0.2	5	0.4	15
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜						0.2	5							0.2	5							0.2	5	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					1.5	10							1.5	10							1.5	10		
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.4	5						0.4	5								0.4	5		
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	20						0.3	15							0.3	5							
Bare Gound				25		50		45		45		38		50		45		55		54		60		60		65

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Stream								Stream								Stream							
			Jun-16								Jul-16								Aug-16							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	5				0.4	5	0.5	5				0.4	5	0.5	5				0.4	5			
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋																								
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.4	7	0.4	20	0.4	25	0.4	5	0.4	7	0.4	15	0.4	20	0.4	5	0.4	7	0.4	15	0.4	20	0.4	5
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5	0.3	5	0.2	5	0.3	5	0.4	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草				0.4	5						0.4	5							0.4	5				
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	5						1	5							1	5							
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1	7						1	7							1	7							
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5						0.4	5							0.4	5							
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	7	0.2	15	0.2	5	0.4	15	0.3	7	0.2	10	0.2	5	0.4	10	0.3	10	0.2	15	0.2	10	0.4	15
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜					0.2	5							0.2	5								0.2	5	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草				1.5	10						1.5	10							1.5	10				
Amaranthaceae	<i>Celosia argentea</i>	青葙				0.4	5						0.4	5							0.4	5				
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5						0.3	5							0.3	5							
Bare Ground				54		60		60		65		54		70		65		70		51		65		60		65

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Stream								Stream								Stream							
			Sep-16				Oct-16				Nov-16				Sep-16				Oct-16				Nov-16			
Transect	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4		
	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	5					0.4	5	0.5	5					0.4	5	0.5	5				0.4	5	
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋	0.3	5	0.2	5	0.3	5	0.3	5	0.3	5	0.2	5	0.3	5	0.3	5	0.4	5	0.2	5	0.3	5	0.4	5
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.5	10	0.5	20	0.5	25	0.5	5	0.5	10	0.5	20	0.5	25	0.5	5	0.5	10	0.5	20	0.5	25	0.5	5
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.3	5	0.3	10	0.4	5	0.4	5	0.4	5	0.4	10	0.4	5	0.4	5	0.4	5	0.4	10	0.4	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	苧麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.3	5	0.4	5					0.5	5	0.4	5					0.5	5	0.4	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	5							1	5							1.1	5						
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1	7							1	7							1.1	7						
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5							0.4	5							0.4	5						
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.2	15	0.2	10	0.4	15	0.3	10	0.2	15	0.2	10	0.4	15	0.3	10	0.2	15	0.2	10	0.4	15
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜						0.2	5																	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					1.5	10							1.5	10							1.5	10		
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.4	5							0.4	5							0.4	5		
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5							0.3	5							0.3	5						
Bare Ground				43		50		45		60		43		50		45		65		43		50		45		65

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River
(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Dec-16								Jan-17								Feb-17							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	5				0.4	5	0.5	5				0.4	5	0.5	5					0.4	5		
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋	0.4	5	0.2	5	0.3	5	0.4	5	0.4	5	0.2	5	0.3	5	0.4	5	0.4	5	0.2	5	0.3	5	0.4	5
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.5	10	0.5	20	0.5	25	0.5	5	0.5	10	0.5	20	0.5	25	0.5	5	0.5	10	0.5	20	0.6	25	0.5	5
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.4	5	0.4	5	0.4	10	0.4	5	0.4	5	0.4	5	0.4	10	0.4	5	0.4	5	0.5	5	0.5	10	0.5	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	苧麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.5	5	0.4	5					0.5	5	0.4	5					0.5	5	0.4	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1.1	5						1.1	5									1.1	5					
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1.1	7						1.1	7									1.1	7					
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5						0.4	5									0.4	5					
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.2	15	0.2	10	0.4	15	0.3	10	0.2	15	0.2	10	0.4	15	0.3	10	0.2	15	0.2	10	0.4	15
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					1.5	10							1.5	10							1.5	10		
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.4	5						0.4	5								0.4	5		
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5						0.3	5									0.3	5					
Bare Gound				43		50		45		65		43		50		45		65		43		50		45		65

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Mar-17								Apr-17								May-17							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	5				0.4	5	0.5	5				0.4	5	0.5	5					0.4	5		
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋	0.4	5	0.2	10	0.3	10	0.4	5	0.4	5	0.2	10	0.3	10	0.4	5	0.4	5	0.2	10	0.3	10	0.4	5
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.6	10	0.6	25	0.6	25	0.6	10	0.5	10	0.7	35	0.7	35	0.5	10	0.6	10	0.8	35	0.7	35	0.7	10
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.4	5	0.5	5	0.5	10	0.5	5	0.4	5	0.5	5	0.5	10	0.5	5	0.4	5	0.6	5	0.6	10	0.6	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.5	10	0.4	10					0.5	10	0.4	10					0.5	10	0.4	10		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1.1	5						1.1	5							1.3	5							
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1.1	7						1.1	7							1.3	7							
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5						0.4	5							0.4	5							
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.2	15	0.2	10	0.4	15	0.3	10	0.3	15	0.3	10	0.4	15	0.3	10	0.3	15	0.3	10	0.4	15
Asteraceae	<i>Erechites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					1.5	10							1.5	10							1.5	10		
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.4	5						0.4	5								0.4	5		
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5						0.3	5							0.3	5							
Bare Ground				43		35		35		60		43		25		25		60		43		25		25		60

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River
(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring																							
			Jun-17								Jul-17								Aug-17							
			T1		T2		T3		T4		T1		T2		T3		T4		T1		T2		T3		T4	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.5	5				0.4	5	0.5	5					0.5	5	0.5	5					0.5	5	
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋	0.4	5	0.2	5	0.3	5	0.4	5	0.4	5	0.3	5	0.4	5	0.5	5	0.4	5	0.3	5	0.4	5	0.5	5
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Bracharia mutica</i>	巴拉草	0.6	5	0.8	20	0.7	20	0.7	10	0.6	5	0.8	20	0.7	20	0.7	10	0.7	5	0.8	20	0.7	20	0.7	10
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.4	5	0.6	5	0.6	10	0.6	5	0.4	5	0.6	5	0.6	10	0.6	5	0.5	5	0.6	5	0.6	10	0.6	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	苧麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.5	8	0.4	5					0.5	8	0.4	5					0.5	8	0.4	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1.3	5							1.3	5							1.3	5						
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1.3	7							1.3	7							1.3	7						
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5							0.4	5							0.4	5						
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.3	15	0.3	10	0.4	15	0.3	10	0.5	15	0.5	10	0.4	15	0.3	10	0.5	15	0.5	10	0.4	15
Asteraceae	<i>Erechtites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					1.5	10							1.5	10							1.5	10		
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.4	5						0.4	5								0.5	5		
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5							0.3	5							0.3	5	0.2	5				
Bare Ground				48		47		50		60		48		47		50		60		48		47		50		60

P1 – Point count location 1; P4 – Point count location 4

(Continuous) Table 4.2. Flora species recorded from belt transect survey at the Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Family	Species	Chinese name	Post construction monitoring								Post construction monitoring								Post construction monitoring							
			Stream								Stream								Stream							
			Sep-17								Oct-17								Nov-17							
Transect	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4						
	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛	0.6	5					0.6	5	0.6	5					0.6	5	0.6	5		0.6	5			
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Araceae	<i>Alocasia odora</i>	海芋	0.5	5	0.3	5	0.5	5	0.6	5	0.5	5	0.4	5			0.6	5	0.6	5	0.5	5	0.6	5		
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.7	5	0.8	20	0.7	20	0.7	10	0.7	5	0.8	20	0.7	20	0.7	10	0.7	5	0.9	20	0.8	20	0.8	10
Moraceae	<i>Ficus hispida</i>	對葉榕																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	5	0.6	5	0.7	10	0.6	5	0.5	5	0.6	5	0.7	10	0.6	5	0.5	5	0.6	5	0.7	10	0.6	5
Musaceae	<i>Musa paradisiaca</i>	大蕉																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																								
Araceae	<i>Pistia stratiotes L.</i>	大漂																								
Urticaceae	<i>Boehmeria nivea</i>	苧麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.5	8	0.5	5					0.5	8	0.5	5					0.6	8	0.6	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1.3	5							1.3	5							1.3	5						
Solanaceae	<i>Solanum nigrum</i>	龍葵																								
Cyperaceae	<i>Cyperus flabelliformis</i>	風車草																								
Poaceae	<i>Miscanthus floridulus</i>	五節芒	1.3	7							1.3	7							1.3	7						
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5							0.4	5							0.4	5						
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10	0.5	15	0.5	10	0.4	15	0.5	10	0.6	15	0.6	10	0.4	15	0.5	10	0.6	15	0.8	10	0.4	15
Asteraceae	<i>Erechites hieracifolia</i>	革命菜																								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																								
Convolvulaceae	<i>Pharbitis nil</i>	牽牛																								
Verbenaceae	<i>Lantana camara</i>	馬纓丹																								
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡																								
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																								
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					1.5	10						1.5	10							1.5	10			
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.5	5					0.5	5								0.6	5			
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5	0.2	5					0.3	5	0.3	5					0.3	5	0.3	5				
Bare Gound				48		47		50		60		48		47		55		60		48		47		55		60

P1 – Point count location 1; P4 – Point count location 4

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Baseline monitoring			Impact monitoring					Impact monitoring					Impact monitoring								
					Jul-08			Aug-08			Jan-09					Jul-09					Jan-10					
					Abundance			Abundance			Abundance					Abundance					Abundance					
					C	P1	P4	C	P1	P4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C			+			+	1		1	1	+	1		1		+	1	2	2	1		
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+		+			+			1	+			1		+				1			
White-throated Kingfisher	<i>Halcyon smymensis</i>	白胸翡翠	R, LC	C										+			1		+			1				
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																						
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+		1	+		+			1	+			1		+	1		3	1			
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U						+			1	1						+	1		2			
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																						
Number of birds						19	12		20	13		6	5	14	12		9	14	13	17		50	14	28	10	
No. of species						18	12	8	19	9	5	24	3	4	8	5	23	5	7	9	11	23	9	6	10	5

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

LC : Local Concern Fellowes *et al* (2002)

PRC: Potential Regional onver Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Impact monitoring					Impact monitoring					Impact monitoring					Impact monitoring					
					Jul-10					Jan-11					Jul-11					Jan-12					
					Abundance					Abundance					Abundance					Abundance					
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	1		1	1	+ 1		1		2	+					+	1				
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+			1	2	+ 1					+					+					
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C	+																				
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																					
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+			1	1	+ 1		1		2	+			1		+					
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U						+															
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																					
Number of birds						31	21	24	27		30	11	8	13		14	8	24	9		15	9	21	17	
No. of species						25	10	10	12	13	28	13	7	7	7	19	7	6	12	8	26	8	6	7	9

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Impact monitoring					Impact monitoring					Impact monitoring					Post construction monitoring				
					Jul-12					Aug-13					Dec-13					Jan-14				
					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	+++	3	4	3	2	+														
Black Drongo	<i>Dicrurus macrocoercus</i>	黑卷尾	Sv	C																				
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C																				
Black-faced bunting	<i>Emberiza spodocephala</i>	灰頭鷓	WV&PM	C																				
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++			3		++	1			2	++		2	3	2	++		2	2	1
Black-winged Cuckoo-shrike	<i>Coracina melaschistos</i>	暗灰鶇鶇	PM	C																				
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																				
Brown Shrike	<i>Lanius cristatus</i>	紅尾伯勞	PM	C																				
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV,Cap.586	C																				
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	2	1	4	2	++	2	1		1	++	3	3	2	1	+	1		2	3
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶯	R,RC	C	+		1	1		+			1	1	++	2	3	2	1	++	1	2	4	3
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C						+					+					+			1	
Common Koel	<i>Eudynamis scolopacea</i>	噪鶇	R	C	+					+					+					+				
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C	+					+					+		2	2		+		1	2	
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+	1	1	1		+	1			1	+	1	1	1	1	++	2	1	3	2
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	5	2	4	2	+++	4	2	2	3	+++	5	4	5	3	+++	6	5	4	5
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U						+														
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++			5	2	++	1	3	3		++	1	2	3	2	++		3	2	3
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC	U											+									
Daurian redstart	<i>Phoenicurus aureus</i>	北紅尾鶇	WV	C											+					+		1	1	
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C						+					+					+				
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C											+					+	1			
Eurasian tree sparrow	<i>Passer montanus</i>	麻鶇	R	C	+++	4	5	3	2	++			2		++					+				
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+					+					+					+		1	1	
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C											+					+				
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C											+					+		2		
Grey Heron	<i>Ardea cinerea</i>	蒼鶯	WV,PRC	C						+					+					+				

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Impact monitoring					Impact monitoring					Impact monitoring					Post construction monitoring					
					Jul-12					Aug-13					Dec-13					Jan-14					
					Abundance					Abundance					Abundance					Abundance					
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	++	1	2			+					++	1	2	2	3	++			2	1	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+					+					+					+					
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																+					
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																					
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1		1		+					+		1	1		+			1	2	1
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																					
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																					
Number of birds						27	19	36	13		16	10	14	10		23	36	34	27			25	33	41	37
No. of species						23	10	9	13	7	37	9	6	7	6	48	11	15	14	13	35	11	18	17	16

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

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CR: Rare in China Red Data Book Status

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Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Feb-14					Mar-14					Apr-14					May-14					Jun-14				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	+					+					+				1	++	2	1	4	2	+		1	2	1
Black Drongo	<i>Dicrurus macrocoercus</i>	黑卷尾	Sv	C																									
Black Kite	<i>Milvus lineatus</i>	鷹	R, RC, Cap.586	C	+					+																			
Black-faced bunting	<i>Emberiza spodocephala</i>	灰頭鷓	WV&PM	C																									
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2		3	++	1		4	2	++		2	1		++	1	2	2	1	++	2		3	2
Black-winged Cuckoo-shrike	<i>Coracina melaschistos</i>	暗灰鶇鶇	PM	C																									
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																									
Brown Shrike	<i>Lanius cristatus</i>	紅尾伯勞	PM	C																									
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV,Cap.586	C						+																			
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	+	3	1	2	2	+	2	2	4	3	+	2		3	1	+		1	2		+	2		2	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	++		1	2	2	++	2	3	3	1	++	3	2	2		++	1		2	1	++	2	1	1	
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C	+				1	+			1		+					+					+				
Common Koel	<i>Eudynamis scolopacea</i>	噪鶇	R	C	+	1				+	1		1		+	2		1		+	1		1	1	+			1	
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C	+		2	2		+		2	2	1	+		2	1		+			1		+				
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	++	1	1	2	1	++	1	2	1	2	++	1	1		1	++	1		1	1	++	1	1	1	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	4	3	3	4	+++	3	2	6	5	+++	2	3	4	2	+++	3	2	3	3	+++	2	3	4	2
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U																									
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++		2	4	2	++			6	3	++		1	3	2	+		2	1		++		3	5	2
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC	U						+																			
Daurian redstart	<i>Phoenicurus aureus</i>	北紅尾鶇	WV	C	+		1		1	+		1	1																
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C	+					+																			
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+	1		1		+		1	1		+			1		+			1	1	+			1	
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	+					+					+	2				+					+				2
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+		1	1		+		1	1	1	+		1		1	+	1		1	1	+			1	1
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C	+	1		2		+	1				+					+			2						
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C	+			2		+		2	2		+		1	2		+					+				
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV.PRC	C	+					+					+														

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Feb-14					Mar-14					Apr-14					May-14					Jun-14				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	++	2	1	2	2	++	2	1	2	1	+		1			+									
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+++	5		4		++	4		5	3	++	2		3		++	4	3	5	2	++	2	2	3	
Jungle Crow	<i>Corvus macrorhynchos</i>	大咀烏鴉	R	C	+					+					+					+					+				
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鴉	SV	C																+					+				
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鴉	R, VU	C						+																			
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	2	2	3	3	++	1	3	4	2	++	3	2	2	1	++	1	2	3	2	++	1	1	2	1
Great Egret	<i>Ardea alba</i>	大白鷺	R,WV, RC	C																									
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R,SpM	C	+			2	1	+		2	2																
Magpie	<i>Pica pica</i>	喜鵲	R	C	+					+			1		+														
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	++	1	2	1	2	++	1	1	2	2	++	1		2	1	++	1	1	1		++	1	2		1
Mandarin Duck	<i>Aix galericulata</i>	鴛鴦	WV	U																									
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鶇	R	C	+			3	2	+		2	4	2	+		2			+		2	4	2	+	2		3	
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R&WV, LC	C																									
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																									
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶇	WV	C	+			1		+		1	2		+			2		+									
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																									
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																+					+				
Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鶇	R	C	+					+																			
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶇	PM&WV	C	+				1	+																			
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	山斑鳩	R	C																									
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+					+					+		1			+					+				
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶇	R	C	+					+					+					+									
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C	+																								
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鶇	WV	C	+					+			1																
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶇	R	U																									
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	4	3	2	++	2	3	4	3	++	3	2	2	1	++	2	3	5	2	++	3	1	3	2
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	++					++					++		4			++					++				
Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	絨額鶇	R	C																									

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Feb-14					Mar-14					Apr-14					May-14					Jun-14				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	++	1	2	3	2	++	1	2	2	1	++	1	2	1	2	+					+				
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+					+			2		+				1	+			1	1	+		1		
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C	+										+					+									
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																									
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷦鶯	R	C	+			1	2	+		1	2	1	+	1	1	1	1	+			1	1	+	1			1
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																									
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																									
Number of birds						25	25	42	35		22	32	66	33		23	23	36	14		18	19	41	21		19	16	32	16
No. of species					40	12	14	19	18	41	13	18	26	16		12	14	18	11		11	10	19	14		11	10	14	11

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

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Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Jul-14					Aug-14					Sep-14					Oct-14					Nov-14				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	++	1	2	3	1	++	2	1	2	2	++	3	2	3	4	++	2	1	2	1	++	1	2	1	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+			1	1	+		1	1		+		1	2	1	+			1	1	+			1	1
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																+					+				
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																									
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1	2	1	1	+	1	2	2	1	+	1	1	2	2	+	1		1		+		1	1	1
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																									
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																									
Number of birds						28	24	44	18		19	21	43	24		22	28	46	25		34	21	39	17		25	23	39	19
No. of species						14	12	18	14		11	12	20	14		11	17	18	14		15	13	18	12		12	13	17	12

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SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

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Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Dec-14					Jan-15					Feb-15					Mar-15					Apr-15				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C																++	3	2	4	2	++	4	3	3	2
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																									
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C	+					+					+					+								1	
Black-faced bunting	<i>Emberiza spodocephala</i>	灰頭鷓	WV&PM	C	+																				+			1	
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++	2		3	2	++	2		2		++			3	2	++	2		2		+		2		2
Black-winged Cuckoo-shrike	<i>Coracina melaschistos</i>	暗灰鶇鶇	PM	C																									
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																									
Brown Shrike	<i>Lanius cristatus</i>	紅尾伯勞	PM	C																									
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV,Cap.586	C																									
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	2	2	3		++	2		3	1	+	1		1		++	2		2		++	2		2	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	+	2	1	3		+	2	2		1	+	2	1	2		+	2	1	2	1	+				1
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C	+		1			+		1			+					+		1			+	1			
Common Koel	<i>Eudynamis scolopacea</i>	噪鶇	R	C	+										+	1				+			1	1	+			1	1
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C	+					+					+					+					+				
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	++		1		1	++	1		1		+	1		1	1	+	1		2	1	+	2		1	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++		4	3	2	+++	3	2	3		+++	2	2	4		+++	2	4			+++	4	3	5	2
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U																									
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++	2	3	5		++		3	4	2	++		4	3		++		2	3	2	+++	3	4	2	3
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC	U																									
Daurian redstart	<i>Phoenicurus aureus</i>	北紅尾鶇	WV	C	++		1	1	1	+	1				+		1												
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C	+					+					+														
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+	1	1			+		1			+		1	1		+					+		1		
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	3		2		+++		3	2	1	++		2		1	++	2			1	++	2	2	1	3
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+		1		1	+					+			1	1	+		1	1		+		1	1	
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C						+															+	2			
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C	+					+					+														
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV.PRC	C																									

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Dec-14					Jan-15					Feb-15					Mar-15					Apr-15				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+	1		2	1	+	1	1	1		++	1	2	2	2	++	1		1	2	+		1	1	2
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++	3	4	5		++	3		3		++	3		4		++			4	3	++			3	3
Jungle Crow	<i>Corvus macrorhynchos</i>	大咀烏鴉	R	C																									
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C																+					+			1	1
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鵂	R, VU	C																									
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	++	2	1	3	1	++	1	2	3	2	+	1	1	3	2	+	1	2	3	2	+		2	1	
Great Egret	<i>Ardea alba</i>	大白鷺	R,WV, RC	C																+		1			+		1		
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R,SpM	C											+	1		2		+			2						
Magpie	<i>Pica pica</i>	喜鵲	R	C	+																								
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	++	1	1	2	2	++	1	1	2	2	++	1	1	2	1	++	1	1	2		++	2		1	2
Mandarin Duck	<i>Aix galericulata</i>	鴛鴦	WV	U																									
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鶇	R	C	++			2	2	++	2				+			3		++					++		2		
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R&WV, LC	C																									
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																									
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶇	WV	C	+					+			1																
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																									
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																+									
Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鶇	R	C																									
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶇	PM&WV	C																									
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	山斑鳩	R	C																									
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+	1		1		+		1		1	+					+					+		1		
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶇	R	C	+					++					++					+					+				
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C																+									
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鶇	WV	C	++		1		1	++		1	1		+		1			++		1	1						
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶇	R	U																									
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	+++	2	3	3	2	+++	2	3	5	2	++	3	2	4	3	++	2	3	2	2	++	4	2	3	2
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	+++	5		7		++	5		8		+										+			2	
Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	絨額鶇	R	C																+					+		1		

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Dec-14					Jan-15					Feb-15					Mar-15					Apr-15				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	++	1	1	2	1	++	1	2	3	2	+	1	1	2		++	2	1	2	2	+	1	2	1	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+			1		+					+			1	1	+			1		+		1		
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																									
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																									
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1		1												+		1	1	1	+		1	1	1
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																									
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C	+																								
Number of birds						29	26	49	17		27	23	42	14		18	18	39	15		21	21	36	20		28	29	32	27
No. of species						15	15	18	12	29	14	13	15	9	29	12	11	17	10	31	12	13	18	12	31	12	16	18	14

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

LC : Local Concern Fellowes *et al* (2002)

PRC: Potential Regional onver Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					
					May-15					Jun-15					Jul-15					Aug-15					Sep-15					
					Abundance					Abundance					Abundance					Abundance					Abundance					
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	++	1	1	1	2	++			2	2	++			2		+++				8	+					2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+	1				+	1				+				1											
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																										
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																										
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+		1	1	1	+		1	1	1	+		1	1		+			1		+			1		
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																										
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																										
Number of birds						28	30	35	28		32	21	25	27		27	19	38	34		14	27	36	26		16	36	25	38	
No. of species					30	12	15	20	15	25	17	11	15	13	21	10	11	16	11	23	10	14	14	11	21	6	13	11	10	

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Oct-15					Nov-15					Dec-15					Jan-16					Feb-16				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	++			5		++			5																
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																									
Black Kite	<i>Milvus lineatus</i>	鷹	R, RC, Cap.586	C																									
Black-faced bunting	<i>Emberiza spodocephala</i>	灰頭鷓	WV&PM	C																									
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	3		++		2	3		++	5	3			++		4	4		++			2	3
Black-winged Cuckoo-shrike	<i>Coracina melaschistos</i>	暗灰鶇鶇	PM	C																									
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																									
Brown Shrike	<i>Lanius cristatus</i>	紅尾伯勞	PM	C	+																								
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV,Cap.586	C					+										+										
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++			3	3	++			3	3	++			2	3	++	3	2	2		++	3	2		3
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	+			2	+				2	+				1		+			1	1	+			1	1
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C	+			2	+				2	+					1	+			1	+	+				2
Common Koel	<i>Eudynamis scolopacea</i>	噪鶇	R	C										+	1					+	1				+	1			
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C																									
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	++	2			2	++	2			2	++			2	1	++			2	2	++	1	1		
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	3	5	5	10	+++	3	5	5	10	+++	8	5	5	12	+++	6	4	6	10	+++	5	5	5	10
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U																									
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++			3		++			3		++			2		++	2		1		++	2	2		
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC	U																									
Daurian redstart	<i>Phoenicurus aureus</i>	北紅尾鶇	WV	C										+						+					+				
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																									
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+				+					+						+					+				
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++			7	++				7	++			3		5	++			2	4	++			3	2
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C					+																				
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C																									
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C																+					+				
Grey Heron	<i>Ardea cinerea</i>	蒼鶇	WV,PRC	C																									

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					
					Oct-15					Nov-15					Dec-15					Jan-16					Feb-16					
					Abundance					Abundance					Abundance					Abundance					Abundance					
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+		1			+		1		1	+		1		1	+		1		1	+	1			1	1
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++			4		++		3		4	++			4	4	++		6		2	++	2	1		5	5
Jungle Crow	<i>Corvus macrorhynchos</i>	大咀烏鴉	R	C																										
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C																										
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鵂	R, VU	C																										
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	1		1		+	1			1	+			1	1	+		1		1	+			1		1
Great Egret	<i>Ardea alba</i>	大白鷺	R,WV, RC	C																										
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R,SpM	C	++	5				++		5			++					++					++					
Magpie	<i>Pica pica</i>	喜鵲	R	C																										
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	++			2	2	++		2		1	+		1		2	+		1	1		+	1	2			2
Mandarin Duck	<i>Aix galericulata</i>	鴛鴦	WV	U																										
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鶇	R	C						+				4	+				2											
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R&WV, LC	C	+			2																						
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																										
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶇	WV	C						+					+					+										
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																										
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																										
Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鶇	R	C																										
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶇	PM&WV	C																										
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	山斑鳩	R	C																										
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C						+					+					+					+			1	1	
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶇	R	C																										
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C																										
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鶇	WV	C	+		1			+		1	1		+		1	1		+		1			+			1		
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶇	R	U						+			3																	
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	2	4	4	3	++	3	3	3	1	++	3	3		2	++	2		3	2	++	1	2	1		6
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	++					++			3	3																
Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	絨額鶇	R	C																										

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Oct-15					Nov-15					Dec-15					Jan-16					Feb-16				
					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+				2	+				2	++		1		2	++	1	1	1	2	+	1	1	1	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+				1																				
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																									
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C						+			1		+			1											
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶺鴒	R	C	+					+					+					+					+				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																									
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶺	WV&PM	C																									
Number of birds						13	13	25	41		9	25	30	40		17	21	17	35		15	23	23	24		18	21	19	39
No. of species					23	5	5	7	13	27	4	9	10	13	24	4	10	8	11	24	6	10	10	9	22	10	11	9	12

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					
					Mar-16					Apr-16					May-16					
					Abundance					Abundance					Abundance					
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	1	1	1		+		1	1	2	+		1	1		
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+				1											
White-throated Kingfisher	<i>Halcyon smymensis</i>	白胸翡翠	R, LC	C																
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C											+					
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶺鴒	R	C	+					+					+					
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶺	WV&PM	C																
Number of birds						12	22	23	41		14	17	25	32		16	16	16	32	
No. of species						24	7	10	10	14	21	6	5	10	13	24	6	8	8	11

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided accroding to AFCDB biodiversity website (www.hkbiodiversity.net)

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VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Jun-16					Jul-16					Aug-16					Sep-16				
					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+			1	1	+				1	+		1		1	+		1		1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C																				
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																				
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																				
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶇	R	C	+					+					+					+				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																				
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																				
Number of birds						13	23	21	16		16	18	28	30		21	35	28	21		24	39	17	19
No. of species					22	4	10	10	7	19	4	7	11	10	19	5	12	10	10	20	6	14	9	7

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

LC : Local Concern Fellowes *et al* (2002)

PRC: Potential Regional onver Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen River.

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring									
					Oct-16					Nov-16					Dec-16					Jan-17					Feb-17					Mar-17				
					Abundance					Abundance					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	2	1			+	1	1	2	1	+	1	1		1	+		1	1	1	+		2	1		+		1	1	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C																														
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																														
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																														
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+										+															+				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																														
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																														
Number of birds						26	20	29	6		20	29	26	10		20	26	25	17		14	41	29	20		20	29	30	18		19	27	25	10
No. of species					19	9	9	11	3	19	7	12	13	6	20	5	12	10	10	20	6	12	12	8	22	5	10	13	8	23	4	10	11	7

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen Riv

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Apr-17					May-17					Jun-17					Jul-17				
					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+					+					+					+				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																				
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																				
Number of birds						19	27	22	9		25	34	29	12		19	29	23	17		28	24	25	12
No. of species					22	6	12	9	5	20	6	14	10	8	18	6	9	11	9	19	11	11	11	9

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen Riv

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Aug-17					Sep-17					Oct-17					Nov-17				
					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鵂	R, VU	C																				
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	3	2	2		+	2	1	2		+	1	2	1		+		1	1	2
Great Egret	<i>Ardea alba</i>	大白鷺	R,WV, RC	C	+	1																		
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R,SpM	C																				
Magpie	<i>Pica pica</i>	喜鵲	R	C																				
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	+		2		2	+		2	1		+		2	2	1	+	2	1	2	1
Mandarin Duck	<i>Aix galericulata</i>	鴛鴦	WV	U																				
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鷓鴣	R	C	+			3		+			3							++				
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R&WV, LC	C																				
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																				
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鷓	WV	C																				
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																				
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																				
Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鷓	R	C																				
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶇	PM&WV	C																				
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	山斑鳩	R	C																				
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+					+														
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶇	R	C																				
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C																				
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鶇	WV	C																				
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶇	R	U																				
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	4	2	4		++	3	2	5		++	5	2	3		++	2	4	3	1
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C																				
Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	絨額鶇	R	C																				
White Wagtail	<i>Motacilla alba</i>	白鶇鶇	WV	C	+	1				+	1	1			+		2	1		+		1	1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C																				
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠	R, LC	C																				
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																				

Table 4.3 Avifauna recorded along survey transects and at four selected point count locations of Lam Tsuen Riv

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
					Aug-17					Sep-17					Oct-17					Nov-17				
					Abundance					Abundance					Abundance					Abundance				
					C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4	C	T1	T2	T3	T4
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C																				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒	WV&PM	U																				
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																				
Number of birds						29	29	23	11		23	20	24	9		22	30	24	10		19	30	19	17
No. of species					20	8	11	9	5	16	7	11	12	3	14	6	12	12	5	16	6	12	12	8

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv–Summer Visitor ; C – transect survey;

P1 – Point count location 1; P4 – Point count location 4

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.4. Odonate species recorded at the Upper Lam Tsuen River

Species name	Common name	Chinese name	Status	Commonness	Baseline monitoring		Impact monitoring									
					Jul-08	Aug-08	Jan-09	Jul-09	Jan-10	Jul-10	Jan-11	Jul-11	Jan-12	Jul-12	Aug-13	
<i>Acisoma panorpoides panorpoides</i>	Asian Pintail	錐腹蜻	NP	VC												
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC											+	+
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蟬	NP	VC												
<i>Coeliccia cyanomelas</i>	Blue Forest Damselfly	黃紋長腹蟬	NP	VC												
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蟬	NP	VC	+								+		+	
<i>Crocothemis servilia servilia</i>	Crimson Dart	紅蜻	NP	VC	+	+	+	+			++					
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蟬	NP	VC												
<i>Ictinogomphus pertinax</i>	Common Flangetail	箭士渠春蟬	NP	C												
<i>Ischnura senegalensis</i>	Common Blue Jewel	褐斑異痣蟬	NP	VC												
<i>Mnais lacteola</i>	Indochinese Copperwing	煙翅綠色蟬	P, LC	C												
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	P, LC	C												
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蟬	NP	VC							+		+	+	+	+
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC												
<i>Neurothemis tullia tullia</i>	Pied Percher	截斑脈蜻	NP	C												
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC	+	+	+	+			+		+		++	++
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC				+					+		+	+
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC												
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC									+			
<i>Orthetrum sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	VC							+					
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+			+					++		
<i>Paracercion calamorum duyeri</i>	Dusky Lilysquatter	蕙尾蟬	P, LC	C												
<i>Prodasinieura autumnalis</i>	Black Threadtail	烏齒原蟬	NP	VC												
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蟬	NP	UC												
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑島蟬	NP	VC												
<i>Rhyothemis variegata arria</i>	Variegated Flutterer	斑麗翅蜻	NP	C												
<i>Trithemis aurora</i>	Crimson Dropwing	曉靄蜻	NP	VC											++	+
<i>Trithemis festiva</i>	Indigo Dropwing	靄靄蜻	NP	VC					+		+		+		+	
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P,PGC	VC												
No. of species					4	5	3	4	0	6	0	7	1	7	5	

Note: NP – Not protected in Hong Kong; P-Protection in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant/dominant in study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

LC- Local Concern - Fellowes *et al* (2002)

PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.4. Odonate species recorded at the Upper Lam Tsuen River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring									Post construction monitoring								
					Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	
<i>Acisoma panorpoides panorpoides</i>	Asian Pintail	錐腹蜻	NP	VC																		
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC																		
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蟷	NP	VC																		
<i>Coeliccia cyanomelas</i>	Blue Forest Damsel	黃紋長腹蟷	NP	VC																		
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扁蟷	NP	VC																		
<i>Crocothemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC																		
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蟷	NP	VC																		
<i>Ictinogomphus pertinax</i>	Common Flangetail	箭王渠春蟷	NP	C																		
<i>Ischnura senegalensis</i>	Common Blue Jewel	褐斑異痣蟷	NP	VC																		
<i>Mnais lacteola</i>	Indochinese Copperwing	煙翅綠色蟷	P, LC	C																		
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	P, LC	C																		
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蟷	NP	VC																		
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC																		
<i>Neurothemis tullia tullia</i>	Pied Percher	截斑脈蜻	NP	C																		
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC																		
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC																		
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC																		
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC																		
<i>Orthetrum sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	VC																		
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC																		
<i>Paracecion calamorum duyeri</i>	Dusky Lilysquatter	蒼尾蟷	P, LC	C																		
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蟷	NP	VC																		
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蟷	NP	UC																		
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑島蟷	NP	VC																		
<i>Rhyothemis variegata arria</i>	Variegated Flutterer	斑麗翅蜻	NP	C																		
<i>Trithemis aurora</i>	Crimson Dropwing	曉靄蜻	NP	VC																		
<i>Trithemis festiva</i>	Indigo Dropwing	靄靄蜻	NP	VC																		
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P,PGC	VC																		
No. of species					3	2	1	3	12	9	14	13	15	11	13	9	4	3	2	4	9	

Note: NP – Not protected in Hong Kong; P-Protection in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant/dominant in study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

LC- Local Concern - Fellowes *et al* (2002)PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.4. Odonate species recorded at the Upper Lam Tsuen River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring												
					May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16
<i>Acisoma panorpoides panorpoides</i>	Asian Pintail	錐腹蜻	NP	VC			+										
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC													
<i>Ceragrion aurantiacum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蟬	NP	VC	+	+	+	+	+							+	+
<i>Coeliccia cyanomelas</i>	Blue Forest Damselfly	黃紋長腹蟬	NP	VC													
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蟬	NP	VC	+	+	+	+	+								+
<i>Crocothemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC	+	+	+	+	+	+	+						
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蟬	NP	VC				+									+
<i>Ictinogomphus pertinax</i>	Common Flangetail	箭士渠春蟬	NP	C	+	+	+	+	+	+							+
<i>Ischnura senegalensis</i>	Common Blue Jewel	褐斑異痣蟬	NP	VC													
<i>Mnais lacteola</i>	Indochinese Copperwing	煙翅綠色蟬	P, LC	C													
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	P, LC	C													
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蟬	NP	VC	+	+	+	+	+	+	+					+	+
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC		+	+	+	+								
<i>Neurothemis tullia tullia</i>	Pied Percher	截斑脈蜻	NP	C													
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC				+	+	+	+				+	+	+
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC													
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC			+	+	+	+							
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC	+	+	+	+					+			+	+
<i>Orthetrum sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	VC							+						
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Paracercion calamorum duyeri</i>	Dusky Lilysquatter	蒼尾蟬	P, LC	C													
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蟬	NP	VC	+	+	+	+	+								
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蟬	NP	UC	+	+											
<i>Rhincocypha perforata perforata</i>	Common Blue Jewel	三斑鼻蟬	NP	VC		+	+	+	+	+							+
<i>Rhyothemis variegata arria</i>	Variegated Flutterer	斑麗翅蜻	NP	C													
<i>Trithemis aurora</i>	Crimson Dropwing	曉靄蜻	NP	VC	+	+	+	+	+	+	+					+	+
<i>Trithemis festiva</i>	Indigo Dropwing	靄靄蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩紅蜻	P,PGC	VC													
No. of species					11	13	14	15	13	9	7	2	3	1	3	7	11

Note: NP – Not protected in Hong Kong; P-Protection in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant/dominant in study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)LC- Local Concern - Fellowes *et al* (2002)PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.4. Odonate species recorded at the Upper Lam Tsuen River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring											
					Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	
<i>Acisoma panorpoides panorpoides</i>	Asian Pintail	錐腹蜻	NP	VC												
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC												
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蟳	NP	VC	+	+	+	+	+						+	
<i>Coeliccia cyanomelas</i>	Blue Forest Damselfly	黃紋長腹蟳	NP	VC												
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蟳	NP	VC	+	+	+	+								
<i>Crocothemis servilia servilia</i>	Crimson Dart	紅蜻	NP	VC	+	+	+	+	+	+						
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蟳	NP	VC	+	+										
<i>Ictinogomphus pertinax</i>	Common Flangetail	霸王渠春蟳	NP	C	+	+	+	+								
<i>Ischnura senegalensis</i>	Common Blue Jewel	褐斑異痣蟳	NP	VC												
<i>Mnais lacteola</i>	Indochinese Copperwing	煙翅綠色蟳	P, LC	C												
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	P, LC	C												
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蟳	NP	VC	+	+	+	+	+	+					+	
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC	+	+	+	+	+							
<i>Neurothemis tullia tullia</i>	Pied Percher	截斑脈蜻	NP	C	+	+	+	+								
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC	+	+	+	+	+	+				+	+	
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC												
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC	+	+	+	+	+	+					+	
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC												
<i>Orthetrum sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	VC												
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	
<i>Paracercion calamorum duyeri</i>	Dusky Lilysquatter	蒼尾蟳	P, LC	C												
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蟳	NP	VC											+	
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蟳	NP	UC												
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑鼻蟳	NP	VC	+	+	+	+	+							
<i>Rhyothemis variegata arria</i>	Variegated Flutterer	斑麗翅蜻	NP	C												
<i>Trithemis aurora</i>	Crimson Dropwing	曉靄蜻	NP	VC	+	+	+	+	+	+				+	+	
<i>Trithemis festiva</i>	Indigo Dropwing	靄靄蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P,PGC	VC												
No. of species					14	14	13	13	10	7	2	2	2	4	8	

Note: NP – Not protected in Hong Kong; P-Protection in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant/dominant in study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)LC- Local Concern - Fellowes *et al* (2002)PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.4. Odonate species recorded at the Upper Lam Tsuen River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring							
					May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	
<i>Acisoma panorpoides panorpoides</i>	Asian Pintail	錐腹蜻	NP	VC								
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC								
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蟌	NP	VC	+	+	+	+	+			
<i>Coeliccia cyanomelas</i>	Blue Forest Damselfly	黃紋長腹蟌	NP	VC								
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蟌	NP	VC	+	+	+	+				
<i>Crocothemis servilia servilia</i>	Crimson Dart	紅蜻	NP	VC	+	+	+	+	+	+	+	+
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蟌	NP	VC			+	+	+			
<i>Ictinogomphus pertinax</i>	Common Flangetail	箭士渠春蟌	NP	C								
<i>Ischnura senegalensis</i>	Common Blue Jewel	褐斑異痣蟌	NP	VC								
<i>Mnais lacteola</i>	Indochinese Copperwing	煙翅綠色蟌	P, LC	C								
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	P, LC	C								
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蟌	NP	VC	+	+	+	+	+	+	+	+
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC	+	+	+	+	+	+		
<i>Neurothemis tullia tullia</i>	Pied Percher	截斑脈蜻	NP	C								
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC	+	+	+	+	+	+		
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC		+	+	+	+	+		
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC	+	+	+	+	+	+	+	+
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC								
<i>Orthetrum sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	VC		+	+	+	+			
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+	+	+	+	+
<i>Paracercion calamorum duyeri</i>	Dusky Lilysquatter	蒼尾蟌	P, LC	C								
<i>Prodasinieura autumnalis</i>	Black Threadtail	烏齒原蟌	NP	VC	+	+	+	+	+	+		
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蟌	NP	UC								
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑鼻蟌	NP	VC	+	+	+	+	+	+	+	+
<i>Rhyothemis variegata arria</i>	Variegated Flutterer	斑麗翅蟌	NP	C								
<i>Trithemis aurora</i>	Crimson Dropwing	曉靄蜻	NP	VC	+	+	+	+	+	+	+	+
<i>Trithemis festiva</i>	Indigo Dropwing	靄靄蜻	NP	VC	+	+	+	+	+	+	+	+
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P,PGC	VC								
No. of species					12	14	15	15	14	11	7	

Note: NP – Not protected in Hong Kong; P-Protection in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant/dominant in study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

LC- Local Concern - Fellowes *et al* (2002)

PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Baseline monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring															
				Jul-08		Aug-08		Jan-09				Jul-09				Jan-10				Jul-10				Jan-11															
				Upper stream	Lower stream	Upper stream	Lower stream	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4							
Molluscs																																							
<i>Biomphalaria sp.</i>	--	NP	VC		+	+	+																																
<i>Brotia hainanensis</i>	--	NP	VC	+++	++	++	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC		+		+																																
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC		+		+	+	+			+	+																										
<i>Radix plicatulus</i>	羅白螺	NP	VC		+	+	+	+	+			+	+																										
<i>Sinotaia quadrata</i>	田螺	NP	VC		+		+	+	+			+	+																										
Insects																																							
<i>Baetis sp.</i>	--	NP	VC	+	+	+	+	+	+			+	+	+																									
<i>Caenis sp.</i>	--	NP	VC							+	+																												
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+			+	+																										
<i>Electrogenas sp.</i>	--	NP	VC																																				
<i>Hydropsyche sp.</i>	--	NP	VC																																				
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+	+	+	+																														
<i>Mnais sp.</i>	--	NP	VC							+																													
<i>Orthetrum sp.</i>	--	NP	VC	+	+																																		
Crustaceans																																							
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	+	+	+	+	+	+																														
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC	+																																			
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+	+		+	+	+																														
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC	+																																			
No. of species				9	12	10	11	10	11	3	2	9	10	3	3	2	9	12	5	3	2	7	12	5	4	2	7	15	13	11	13	15							

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

		Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Post construction monitoring																											
		Jul-11				Jan-12				Jul-12				Aug-13				Dec-13				Jan-14																											
		Reference point				Reference point				Reference point				Reference point				Reference point				Reference point																											
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4																				
Species name	Chinese name	Status	Commonness																																														
Molluscs																																																	
<i>Biomphalaria sp.</i>	--	NP	VC																																														
<i>Brotia hainanensis</i>	--	NP	VC	+				+	+					++				++				++				++																							
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC	+	+			+	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+																				
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	+			+	+	+	+			+	+	+	+																																
<i>Radix plicatulus</i>	羅白螺	NP	VC	+				+	+					+	+			+	+			+	+			+	+																						
<i>Sinotaia quadrata</i>	田螺	NP	VC	+				+	+					+	+			+	+			+	+			+	+																						
Insects																																																	
<i>Baetis sp.</i>	--	NP	VC	+				+						+				+				+				+																							
<i>Caenis sp.</i>	--	NP	VC	+				+																																									
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+				+	+					+	+			+	+			+	+			+	+																						
<i>Electrogenas sp.</i>	--	NP	VC	+				+						+				+				+				+																							
<i>Hydropsyche sp.</i>	--	NP	VC	+				+						+				+				+				+																							
<i>Indobaetis sp.</i>	--	NP	VC	+				+						+				+				+				+																							
<i>Mnais sp.</i>	--	NP	VC	+				+	+					+	+			+	+			+	+			+	+																						
<i>Orthetrum sp.</i>	--	NP	VC	+				+	+	+	+			+	+			+	+			+	+			+	+																						
Crustaceans																																																	
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	+	+	+	+	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+																				
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC	+				+						+	+	+	+	+	+	+	+	+	+			+	+																						
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+	+			+						+				+				+				+																							
<i>Somanniathelphusa zanklon</i>	束腰蟹	NP	VC					+																																									
No. of species				16	4	1	1	2		17	9	6	5	0				15	10	8	5	1				16	12	11	7	3				15	11	9	8	7				15	11	9	10	8			

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring															
				Feb-14				Mar-14				Apr-14				May-14				Jun-14				Jul-14															
				Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4						
Molluscs																																							
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+			+	+	+			+	+	+			+	+	+			+	+	+			
<i>Brotia hainanensis</i>	--	NP	VC	++	+	+	+			++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+		+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Sinotaia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Insects																																							
<i>Baetis sp.</i>	--	NP	VC	+		+	+		+		+	+		+		+					+					+					+		+						
<i>Caenis sp.</i>	--	NP	VC																																				
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+			+	+	+			+	+			+	+										
<i>Hydropsyche sp.</i>	--	NP	VC	+	+				+	+				+	+				+	+				+	+			+	+										
<i>Indobaetis sp.</i>	--	NP	VC	+			+		+	+	+			+	+	+			+	+	+			+	+			+	+										
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Orthetrum sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Crustaceans																																							
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC	+	+				+	+				+	+				+	+				+	+			+	+										
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Somanniathelphusa zanklon</i>	束腰蟹	NP	VC																																				
No. of species				16	13	13	11	8	16	14	14	12	11	17	15	16	13	12	13	15	10	10	10	11	12	11	10	9	13	11	13	13	10						

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring																				
				Aug-14				Sep-14				Oct-14				Nov-14				Dec-14				Jan-15																				
				Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4											
Molluscs																																												
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
<i>Brotia hainanensis</i>	--	NP	VC	++	+	+	+	+	++	+	+	+	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+			
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC			+	+	+			+																																	
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Sinotaia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Insects																																												
<i>Baetis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Caenis sp.</i>	--	NP	VC																																									
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+		+	+	+		+	+		+	+	+		+	+		+	+		+	+		+	+		+	+		+	+		
<i>Hydropsyche sp.</i>	--	NP	VC	+		+	+	+			+	+	+	+																														
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Mnais sp.</i>	--	NP	VC		+	+	+				+	+	+	+																														
<i>Orthetrum sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Crustaceans																																												
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	+		++	++	++	++	+		++	++	++	++	+		++	++	++	++	+		++	++	++	++	+		++	++	++	++	+		++	++	++	++	+		++	++	++
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC				+	+					+	+																														
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC																																									
No. of species				13	13	15	15	9		13	14	16	14	12		13	14	16	15	11		13	14	15	14	12		13	12	12	13	11		13	11	11	13	12						

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring					Post construction monitoring					Post construction monitoring														
				Feb-15				Mar-15					Apr-15					May-15					Jun-15									
				Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4				
Molluscs																																
<i>Biomphalaria sp.</i>	--	NP	VC		+		+				+		+	+				+	+											+		
<i>Brotia hainanensis</i>	--	NP	VC	++	++	+	+	+	+	++	++	+	+	+	++	++	+	+	+	+	++	++	+	+	+	+	++	++	+	+	+	
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC				+	+					+	+						+	+								+	+		
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++	++	++	++	++		
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Sinotia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Insects																																
<i>Baetis sp.</i>	--	NP	VC	+	+		+	+	+	+	+	+	+			+	+	+	+	+									+	+		
<i>Caenis sp.</i>	--	NP	VC																													
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+			+	+	+								+	+		
<i>Hydropsyche sp.</i>	--	NP	VC	+		+			+	+	+			+	+				+	+			+	+					+	+		
<i>Indobaetis sp.</i>	--	NP	VC	+	+			+	+	+	+			+	+				+	+			+	+					+	+		
<i>Mnais sp.</i>	--	NP	VC				+				+			+									+	+					+	+		
<i>Orthetrum sp.</i>	--	NP	VC					+			+	+	+			+	+	+											+	+		
Crustaceans																																
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC			+	+				+										+								+	+		
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC																													
No. of species				11	12	12	11	11		11	13	13	12	12		11	9	12	15	12		11	9	11	13	12		11	9	11	13	12

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring									
				Jul-15				Aug-15				Sep-15				Oct-15				Nov-15									
				Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	
Molluscs																													
<i>Biomphalaria sp.</i>	--	NP	VC					+																					+
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	+	++	++	++	+	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC				+	+				+	+																+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Sinotaia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Insects																													
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+	+			+	+	+			+	+	+			+	+	
<i>Caenis sp.</i>	--	NP	VC																										
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+	+		+	+	+	+		+	+	+		+	+	+		+	+	+		+	+		
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+			+	+			+	+			+		
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+		+	+		+	+		
<i>Mnais sp.</i>	--	NP	VC				+				+				+				+								+		
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+				+		
Crustaceans																													
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC				+					+												+			+		
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+			+	+	+			+	+	+			+	+	+			+	+	+			+		
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC																										
No. of species				11	9	11	13	12	12	9	11	13	12	11	9	11	13	12	11	9	11	13	13	11	9	11	13	13	

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					
				Dec-15					Jan-16					Feb-16					Mar-16					
				Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	
Molluscs																								
<i>Biomphalaria sp.</i>	--	NP	VC					+																
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC				+	+				+	++				+	++					+	++
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	++	+++	++	++	++	++	+++	++	++	++	+++	+++	++	++	++	+++	+++	+++
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Insects																								
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+	+			+	+	+			+	+	+
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+			+	+	+			
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+	+	+		+	+	+	+	+		+
<i>Indobaetis sp.</i>	--	NP	VC				+					+					+						+	
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+	+
Crustaceans																								
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC				+	+				+	+				+	+				+	+	
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Somanniathelphusa zanklon</i>	束腰蟹	NP	VC																					
No. of species				12	10	11	13	13	12	10	11	13	13	12	10	11	13	13	12	10	11	13	13	

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 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring										
				Apr-16				May-16				Jun-16				Jul-16				Aug-16										
		Sampling point		Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4		
Species name	Chinese name	Status	Commonness																											
Molluscs																														
<i>Biomphalaria sp.</i>	--	NP	VC					+																						
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC				+	++	+			+	++	+				+	++	+										
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	+++	+++	++	++	++	+++	+++	++	++	++	+++	+++	++	++	++	+++	+++	++	++	++	+++	+++	++	
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Sinotia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Insects																														
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+	+				+	+	+										
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+			+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+		+	+	+			+	+				+	+		+	+								
<i>Indobaetis sp.</i>	--	NP	VC				+					+									+							+		
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+				+	+	+	+	+	+				+	+	+							
Crustaceans																														
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC				+	+				+	+								+	+						+	+	
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+			+				+						+			+						+	+	
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC																											
No. of species				12	10	11	13	13	13	10	11	13	13	13	10	12	14	14	13	10	12	14	14	13	10	12	14	14		

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Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring								
				Sep-16					Oct-16					Nov-16					Dec-16					Jan-17								
				Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4				
Molluscs																																
<i>Biomphalaria sp.</i>	--	NP	VC					+					+					+									+				+	
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC	+			+	++	+				+	++	+			+	++	+				+	++	+				+	++	
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	+++	+++	++	++	++	+++	+++	++	++	++	+++	+++	++	++	++	+++	+++	++	++	+++	+++	++	++	+++	+++	
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Sinotaia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Insects																																
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+	+			+	+	+			+	+	+			+	+	+		+	
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+			+	+	+			+	+	+				+	+	
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+		+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Indobaetis sp.</i>	--	NP	VC				+					+				+						+								+		
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+			+	+	+			+	+	+				+	+	+					+	+	+	
Crustaceans																																
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC				+	+				+	+			+	+				+	+				+	+			+	+	
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Somanniathelphusa zanklon</i>	束腰蟹	NP	VC																													
No. of species				13	10	12	14	14		13	10	12	14	14		13	10	12	14	14		13	10	12	14	14		13	10	12	14	14

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring					
				Reference point	Feb-17				Reference point	Mar-17			
					T1	T2	T3	T4		T1	T2	T3	T4
Molluscs													
<i>Biomphalaria sp.</i>	--	NP	VC					+					+
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	++	++	++	++	++	++	++
<i>Melanoides tuberculata</i>	瘤擬黑螺	NP	VC	+			+	++	+			+	++
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	+++	+++	++	++	++	+++	+++
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Sinotia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+
Insects													
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+			
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+		+	+	+			+
<i>Indobaetis sp.</i>	--	NP	VC				+					+	
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+			+	+	+
Crustaceans													
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+		+	+	+
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC										
No. of species				13	10	12	14	14	13	10	12	14	14

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
 “VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare
 +, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

				Post construction monitoring					Post construction monitoring					Post construction monitoring					
				Apr-17					May-17					Jun-17					
Species name		Chinese name	Status	Commonness	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4
Molluscs																			
<i>Biomphalaria sp.</i>	--		NP	VC					+					+					+
<i>Brotia hainanensis</i>	--		NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Melanooides tuberculata</i>	瘤擬黑螺		NP	VC	+			+	++	+			+	++	+			+	++
<i>Pomacea canaliculata</i>	蘋果螺		NP	VC	++	++	++	+++	+++	++	++	++	+++	+++	++	++	++	++	++
<i>Radix plicatulus</i>	羅白螺		NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotaia quadrata</i>	田螺		NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Insects																			
<i>Baetis sp.</i>	--		NP	VC	+			+	+	+			+	+	+			+	+
<i>Caenis sp.</i>	--		NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Chironomus sp.</i>	蠓幼虫		NP	VC	+	+	+	+		+	+	+	+		+	+	+	+	
<i>Electrogenas sp.</i>	--		NP	VC	+	+	+			+	+	+			+	+	+		
<i>Hydropsyche sp.</i>	--		NP	VC	+	+	+		+	+	+		+		+	+			+
<i>Indobaetis sp.</i>	--		NP	VC				+					+						+
<i>Mnais sp.</i>	--		NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Orthetrum sp.</i>	--		NP	VC			+	+	+			+	+	+			+	+	+
Crustaceans																			
<i>Caridina cantanensis</i>	廣東米蝦		NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacolutum</i>	鯽刺溪蟹		NP	VC				+	+				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦		NP	VC	+		+	+	+			+	+	+	+		+	+	+
<i>Somaniathelphusa zanklon</i>	束腰蟹		NP	VC															
No. of species					13	10	12	14	14	13	10	12	14	14	13	10	12	14	14

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; “R” - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

				Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Jul-17					Aug-17					Sep-17				
		Sampling point		Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4
Species name	Chinese name	Status	Commonness															
Molluscs																		
<i>Biomphalaria sp.</i>	--	NP	VC					+					+					+
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+			+	++	+			+	++	+			+	++
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotaia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Insects																		
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+	+			+	+
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+		+	+	+	+		+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+	+			+	+	+		
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+		+	+	+			+	+	+			+
<i>Indobaetis sp.</i>	--	NP	VC				+					+						+
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+			+	+	+			+	+	+
Crustaceans																		
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacolutum</i>	鯽刺溪蟹	NP	VC				+	+				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+		+	+	+	+		+	+	+
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC															
No. of species				13	10	12	14	14	13	10	12	14	14	13	10	12	14	14

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; “R” - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.5 Aquatic Macro invertebrates recorded at Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

				Post construction monitoring					Post construction monitoring				
				Oct-17					Nov-17				
		Sampling point		Reference point	T1	T2	T3	T4	Reference point	T1	T2	T3	T4
Species name	Chinese name	Status	Commonness										
Molluscs													
<i>Biomphalaria sp.</i>	--	NP	VC					+					+
<i>Brotia hainanensis</i>	--	NP	VC	++	++	++	++	++	++	++	++	++	++
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+			+	++	+			+	++
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	++	++	++	++	++	++	++
<i>Radix plicatulus</i>	羅白螺	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Sinotaia quadrata</i>	田螺	NP	VC	+	+	+	+	+	+	+	+	+	+
Insects													
<i>Baetis sp.</i>	--	NP	VC	+			+	+	+			+	+
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+		+	+	+	+	
<i>Electrogenas sp.</i>	--	NP	VC	+	+	+			+	+	+		
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+		+	+	+			+
<i>Indobaetis sp.</i>	--	NP	VC				+						+
<i>Mnais sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Orthetrum sp.</i>	--	NP	VC			+	+	+			+	+	+
Crustaceans													
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC	++	++	++	++	++	++	++	++	++	++
<i>Cryptopotamon anacolutum</i>	鯽刺溪蟹	NP	VC				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+		+	+	+
<i>Somaniathelphusa zanklon</i>	束腰蟹	NP	VC										
No. of species				13	10	12	14	14	13	10	12	14	14

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; “R” - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area

Reference point was the sampling location outside the works area.

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Baseline monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring									
				Jul-08		Aug-08		Jan-09				Jul-09				Jan-10				Jul-10				Jan-11									
				Upper stream	Lower stream	Upper stream	Lower stream	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		+		+																										
<i>Channa maculate</i>	斑鱧	NP	C				+																										
<i>Cirrhina molitorella</i>	鯪魚	NP	C																														
<i>Clarias fuscus</i>	胡子鯪	NP	C																														
<i>Cyprinus carpio var. viridivulaceus</i>	錦鯉	NP	C																														
<i>Gambusia affinis</i>	食蚊魚	NP	VC			+	+	+	+				+																				
<i>Liniparhomaloptera disparis</i>	擬平鰓	NP	C																														
<i>Misgurnus anguillicaudatus</i>	泥鰌	NP	C	+			+																										
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C			+																											
<i>Parazacco spilurus</i>	異鰮	V and NP	C	+			+																										
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC				+																										
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C			+	+	+	+	++	++	++	+																				
<i>Pterocryptis cochinchinensis</i>	黃鰪	NP	C																														
<i>Puntius semifasciolatus</i>	七星魚	NP	C	++	+	++	+			+			++																				
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R			+		+																									
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C					+		+		+																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+		+	+			+		+			++	+																	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C																														
<i>Zacco platypus</i>	黃鰺	NP	C			+	++	+	++	+++	+++	+++	+++																				
2x2m fish counting		No. of fish		70	60	75	60	38	45	40	40	8	38	20	5	15	7	38	20	40	5	15	7	32	12	6	10	20	30	22	10	7	5
No. of species				5	8	11	12	7	7	4	8	2	5	3	3	5	6	5	3	2	2	2	9	8	10	13	9	9	7	4	4	8	
Amphibian																																	
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+		+	+	+									+		+														
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																														
No. of species				1	0	1	1	1	1	0	0	1	1	0	0	0	1	1	1	0	1	1	1	0	0	0	0	1	0	0	1	1	

Note: NP – Not protected in Hong Kong
“VC” – Very Common; “UC” – Uncommon; “C” – Common; “R” – Rare
+, occurred; ++, common; +++, abundant/dominant Species in the study area
-V – Listed as vulnerable in China Fish Red Data Book
-Reference point was the sampling location outside the works area used to compare the with the data within works area.
"Cap 170" - List in Wild Animals Protection Ordinance (Cap.170)
"NT" - Near Threatened in IUCN Red List Status
"PGC"-Potential Global Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Impact monitoring					Impact monitoring					Impact monitoring					Impact monitoring					Impact monitoring									
				Jul-11					Jan-12					Jul-12					Aug-13					Dec-13									
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4					
Fish			Commonnes																														
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		+	+					+	+			+	+	+				+	+	+			+	+	+		+	+	+	+
<i>Channa maculate</i>	斑鱧	NP	C																														
<i>Cirrhina molitorella</i>	鯪魚	NP	C	+		+																											
<i>Clarias fuscus</i>	胡子鯪	NP	C											+		+													+				
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C																														
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰈	NP	C																														
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+					+					+					+					+					+				
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+					+	+				+	+	+			+	+	+	+		+	+	+	+		+	+	+	+	
<i>Poecilia reticulate</i>	孔雀花魚將	NP	VC			+	+	+	+	+				+					+	+	+			+	+	+			+	+	+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰈	NP	C	++	+				+					+					+					+					+				
<i>Pterocryptis cochinchinensis</i>	黃鰈	NP	C																														
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+		+			+	+	+			+	+	+			+	+	+			+	+	+			+	+	+		
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	+		+		+	+	+			+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Schistura fasciolata</i>	橫紋南鰈	NP	C	+	+				+	+				+	+	+			+	+	+			+	+	+			+	+	+		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C		+	+	+		+					+	+				+	+	+			+	+	+			+	+	+		
<i>Zacco platypus</i>	黃鰱	NP	C	+	++	++			+	+				+	+	+			+	+	+			+	+	+			+	+	++	+++	++
2x2m fish counting		No. of fish		10	4	2	0	0	6	3	1	0	0	8	5	2	0	0	5	2	3	2	3	5	2	3	2	3	5	2	3	2	3
No. of species				10	8	9	5	3	12	8	6	4	3	14	10	10	4	3	14	11	11	6	4	14	9	12	8	6					
Amphibian																																	
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R					+		+	+					+		+		+	+			+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																														
No. of species				0	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	0	1	1	0	1	1	1	1	1					

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area;

-V – Listed as vulnerable in China Fish Red Data Book

-Reference point was the sampling location outside the works area used to compare the with the data within works area.

"Cap 170" - List in Wild Animals Protection Ordinance (Cap.170)

"NT" - Near Threatened in IUCN Red List Status

"PGC"-Potential Global Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	
Fish																								
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R	+	+	+	+		+	+	++	+++	+	+	++	++	+++	++		++	++	+++	++	
<i>Channa maculate</i>	斑鱧	NP	C																					
<i>Cirrhina molitorella</i>	鯪魚	NP	C																		+			
<i>Clarias fuscus</i>	胡子鯪	NP	C	+		+			+		+			+			+	+				+	+	
<i>Cyprinus carpio var. viridivulaceus</i>	錦鯉	NP	C			+					+					+					+			
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Liniparhomaloptera disparis</i>	擬平鰼	NP	C											+	+	+	+		+	+	+	+		
<i>Misgurnus anguillicaudatus</i>	泥鰟	NP	C	+					+		+			+	+	+	+	+	+	+	+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+	+	+	+		+	+	+	+		+	+	+	+	+	+	+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+				+	+				+	+	+			+	+	+	
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰼	NP	C	+					+	+	+			+	+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+			+		+		+			+		+			+			+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Schistura fasciolata</i>	橫紋南鰼	NP	C	+	+	+			+	+	+			+	+	+			+	+	+			
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C	+		+	+		+		+	+		+		+	+				+	+	+	
<i>Zacco platypus</i>	黃魮鰻	NP	C	+	+	++	+++	+++	+	+	+	++	+++	++	+	+	++	+++	++	+	+	++	+++	++
2x2m fish counting		No. of fish		6	20	60	20	10	16	40	70	40	30	60	70	80	90	80	40	50	60	60	50	
No. of species				14	10	13	11	6	14	10	15	11	7	15	11	16	14	11	11	12	16	14	12	
Amphibian																								
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																					
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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“VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare

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"PGC"-Potential Golal Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					
				May-14					Jun-14					Jul-14					Aug-14					
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	
Fish			Commonnes																					
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		+	+	+	+		+	+	+	+		+	++	++	+		++	++	++	+	
<i>Channa maculate</i>	斑鱧	NP	C																					
<i>Cirrhina molitorella</i>	鯪魚	NP	C																					
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+										+	
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C																					
<i>Gambusia affinis</i>	食蚊魚	NP	VC		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Liniparhomaloptera disparis</i>	擬平鰻	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰻	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Parazacco spilurus</i>	異鱧	V and NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+	
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰻	NP	C		+					+					+					+				
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C		+					+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	++	++	+	
<i>Rhinogobius spp.</i>	鰻虎魚	NP	C/UN/R		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Schistura fasciolata</i>	橫紋南鰻	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	++	++	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+				+	+					+		
<i>Zacco platypus</i>	黃鰱	NP	C		+	+	++	++		+	+	+	+		+	+	+	+		++	++	+	+	
2x2m fish counting		No. of fish		20	30	30	20	20	6	12	10	6	8	8	16	15	5	10	10	10	12	18	10	12
No. of species				13	13	13	12	11	10	12	13	11	11	11	12	13	12	11	10	12	13	13	11	
Amphibian																								
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																					
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Reference	Sep-14				Reference	Oct-14				Reference	Nov-14				Reference	Dec-14			
					T1	T2	T3	T4		T1	T2	T3	T4		T1	T2	T3	T4		T1	T2	T3	T4
Fish																							
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		++	++	++	+		++	++	++	+		++	++	++	++		++	++	++	++
<i>Channa maculate</i>	斑鱧	NP	C																				
<i>Cirrhina moltorella</i>	鯪魚	NP	C																				
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+									+	
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C																				
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Liniparhomaloptera disparis</i>	擬平鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Pterocryptis cochinchinensis</i>	黃鰪	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	+	+	+	+	+	+	+	+	+	+	++	++	++	+	+	++	++	++	+
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Zacco platypus</i>	黃鰱	NP	C	+	++	++	+	+	+	++	++	+	+	+	++	+	+	+	+	++	++	+	+
2x2m fish counting		No. of fish		20	30	30	20	20	30	40	40	30	30	50	70	70	60	60	60	60	60	60	50
No. of species				11	13	14	15	13	11	13	14	15	12	11	13	14	13	11	11	13	14	14	11
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																				
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Jan-15					Feb-15					Mar-15					Apr-15				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonnes																				
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		++	++	++	++		++	++	++	++		++	++	++	++		++	++	++	++
<i>Channa maculate</i>	斑鱧	NP	C																				
<i>Cirrhina molitorella</i>	鯪魚	NP	C																				
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+					+					+
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C																				
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+	+	+	+	+	+	+	+	+	+	+	+	++	+	+	+	+	++	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC					+					+					+					+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C					+					+					+					+
<i>Zacco platypus</i>	黃鰱	NP	C	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+
2x2m fish counting		No. of fish		50	50	60	60	60	50	60	60	60	40	50	60	60	60	40	40	50	55	50	40
No. of species				10	11	12	13	10	10	11	12	14	10	10	13	13	14	11	13	12	14	15	11
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																				
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

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Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring					
				May-15					Jun-15					Jul-15					Aug-15					
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	
Fish																								
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		+	+	++	++		+	+	++	++		+	+	+	+		+	+	+	+	
<i>Channa maculate</i>	斑鱧	NP	C					+					+										+	
<i>Cirrhina molitorella</i>	鯪魚	NP	C																					
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+										+	
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C			+						+											+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Liniparhomaloptera disparis</i>	擬平鰕	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰕	NP	C		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C		+	+	+	+	+	+	++	+	+	+	+	++	++	++	++	+	++	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+	
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰕	NP	C		+	+				+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰪	NP	C		+					+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C		+	+	++	++	+	+	++	++	+	+	+	++	++	+	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R		+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰕	NP	C		+	+				+	+				+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C		+	+	++	+	+	+	++	+	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+			+	+				+	+			
<i>Zacco platypus</i>	黃鰱	NP	C		+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	+	++	++	+
2x2m fish counting		No. of fish		20	30	30	20	20	20	30	30	20	20	20	12	15	18	8	7	15	12	16	10	10
No. of species				13	12	14	12	13	12	13	13	13	12	12	12	13	13	12	12	12	12	13	13	12
Amphibian																								
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																					
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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"Cap 170" - List in Wild Animals Protction Ordinance (Cap.170)

"NT" - Near Treated in IUCN Red List Status

"PGC"-Potential Golal Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring									
				Sep-15					Oct-15					Nov-15					Dec-15									
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4					
Fish			Commonnes																									
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	+			+	+	+			+	+	+			+	+	+			+	+	++
<i>Channa maculate</i>	斑鯉	NP	C					+					+					+										+
<i>Cirrhina molitorella</i>	鯪魚	NP	C																									
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+					+										+
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C				+					+					+											
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰵	NP	C	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+
<i>Poecilia reticulata</i>	孔雀花魚蔴	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+				+	+				+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+					+					+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	++	++			+	++	++			+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+				+	+				+	+				+	+	
<i>Zacco platypus</i>	黃鰱	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
2x2m fish counting			No. of fish	18	15	20	15	15	25	20	22	18	20	40	35	40	35	40	55	40	45	45	40					
No. of species				12	10	13	13	12	12	10	13	13	12	12	10	13	13	12	12	10	13	12	12					
Amphibian																												
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																									
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study are;

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-Reference point was the sampling location outside the works area used to compare the with the data within works area.

"Cap 170" - List in Wild Animals Protction Ordinance (Cap.170)

"NT" - Near Treatedened in IUCN Red List Status

"PGC"-Potential Golal Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Jan-16					Feb-16					Mar-16					Apr-16				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonnes																				
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++			+	+	++			+	+	++
<i>Channa maculate</i>	斑鱧	NP	C																				
<i>Cirrhina molitorella</i>	鯪魚	NP	C																				
<i>Clarias fuscus</i>	胡子鯪	NP	C				+					+					+					+	
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C			+					+					+					+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Poecilia reticulate</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+				+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	++	++			+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+				+	+				+	+	
<i>Zacco platypus</i>	黃鰱	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		60	50	50	50	40	65	55	55	55	40	60	60	60	55	40	45	45	45	40	30
No. of species				12	10	14	13	10	12	10	14	13	10	12	10	14	13	10	12	10	14	13	10
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																				
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
				May-16					Jun-16					Jul-16					Aug-16				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonnes																				
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++			+	+	++					
<i>Channa maculate</i>	斑鱧	NP	C																				
<i>Cirrhina molitorella</i>	鯪魚	NP	C																				
<i>Clarias fuscus</i>	胡子鯪	NP	C				+					+					+					+	
<i>Cyprinus carpio var. viridivola</i>	錦鯉	NP	C			+					+					+					+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+				+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+					+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	++	++			+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+				+	+				+	+	
<i>Zacco platypus</i>	黃鰱	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		45	25	25	20	15	40	30	25	25	20	30	20	15	20	25	20	15	15	15	25
No. of species				12	10	14	13	10	12	10	14	13	10	12	10	14	13	10	12	10	14	13	10
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																				
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1- located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Sep-16					Oct-16					Nov-16					Dec-16				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonnes																				
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++			+	+	++			+	+	++
<i>Channa maculate</i>	斑鱧	NP	C																				
<i>Cirrhina molitorella</i>	鯪魚	NP	C																				
<i>Clarias fuscus</i>	胡子鯪	NP	C				+					+					+					+	
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C			+					+					+					+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰻	NP	C	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰻	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+				+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+					+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	++	++			+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+				+	+				+	+	
<i>Zacco platypus</i>	黃鰱	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		25	20	20	15	22	25	25	25	20	20	30	30	30	30	25	45	40	40	35	35
No. of species				12	10	14	13	10	12	10	14	13	10	12	10	14	13	10	12	10	14	13	10
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC																				
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River

(T1 - located at upper river channel sampling site to T4 - located at lower river Channel sampling site)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Jan-17					Feb-17					Mar-17				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish																		
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++			+	+	++
<i>Channa maculate</i>	斑鱧	NP	C															
<i>Cirrhina molitorella</i>	鯪魚	NP	C															
<i>Clarias fuscus</i>	胡子鯪	NP	C				+					+					+	
<i>Cyprinus carpio var. viridivulaceus</i>	錦鯉	NP	C			+					+					+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰍	NP	C	+	+	+	+		+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+		+		+	+		+		+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+				+	+				+	+	
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰷	NP	C	+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+			+	+		
<i>Zacco platypus</i>	黃鰱	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		50	45	45	35	35	55	50	50	40	40	60	55	55	50	50
No. of species				12	10	14	13	10	12	10	14	13	10	12	10	14	13	10
Amphibian																		
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT, PGC)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC															
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; "R" - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area;

-V - Listed as vulnerable in China Fish Red Data Book

-Reference point was the sampling location outside the works area used to compare the with the data within works area.

"Cap 170" - List in Wild Animals Protection Ordinance (Cap.170)

"NT" - Near Threatened in IUCN Red List Status

"PGC"-Potential Global Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River
(T1- located at upper river channel sampling site to T4 - located at lower river Channel)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Apr-17					May-17					Jun-17				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonness															
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++			+	+	++
<i>Channa maculate</i>	斑鱧	NP	C															
<i>Cirrhina molitorella</i>	鯪魚	NP	C															
<i>Clarias fuscus</i>	胡子鯰	NP	C				+					+					+	
<i>Cyprinus carpio var.</i>	錦鯉	NP	C				+					+					+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰕	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰕	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+		+	+	+	+		+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰕	NP	C	+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰰	NP	C	+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰕	NP	C	+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+			+	+		
<i>Zacco platypus</i>	寬鰭鱮	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		55	50	50	45	40	50	40	40	40	30	30	20	20	20	20
No. of species				12	10	14	13	10	12	10	14	13	10	12	10	14	13	10
Amphibian																		
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC															
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; “R” - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area

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"Cap 170" - List in Wild Animals Protection Ordinance (Cap.170)

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"PGC"-Potential Global Concern by Fellowes *et al* (2002)

Table 4.6 Fish species and amphibians at Upper Lam Tsuen River
(T1- located at upper river channel sampling site to T4 - located at lower river Channel)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Jul-17					Aug-17					Sep-17				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonness															
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++			+	+	++
<i>Channa maculate</i>	斑鱧	NP	C															
<i>Cirrhina molitorella</i>	鯪魚	NP	C														+	++
<i>Clarias fuscus</i>	胡子鯰	NP	C				+					+					+	
<i>Cyprinus carpio var.</i>	錦鯉	NP	C				+					+				+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰍	NP	C	+	+	+	+		+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+		+	+	+	+		+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+	+				+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰰	NP	C	+					+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰍	NP	C	+	++	++			+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+			+	+		
<i>Zacco platypus</i>	寬鰭鱮	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		20	15	15	15	20	20	20	20	20	25	30	30	30	25	25
No. of species				12	10	14	13	10	12	10	14	13	10	12	10	14	14	11
Amphibian																		
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT)	R	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC															
No. of species				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; “R” - Rare

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Table 4.6 Fish species and amphibians at Upper Lam Tsuen River
(T1- located at upper river channel sampling site to T4 - located at lower river Channel)

Species	Chinese name	Status	Sampling point	Post construction monitoring					Post construction monitoring				
				Oct-17					Nov-17				
				Reference	T1	T2	T3	T4	Reference	T1	T2	T3	T4
Fish			Commonness										
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++			+	+	++
<i>Channa maculate</i>	斑鱧	NP	C										
<i>Cirrhina molitorella</i>	鮫魚	NP	C				+	++				+	++
<i>Clarias fuscus</i>	胡子鯰	NP	C					+				+	
<i>Cyprinus carpio var.</i>	錦鯉	NP	C				+				+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+
<i>Liniparhomaloptera disparis</i>	擬平鰕	NP	C	+	+	+	+		+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰕	NP	C	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++	++	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and NP	C	+		+	+	+	+		+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+	+			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰕	NP	C	+	+				+	+			
<i>Pterocryptis cochinchinensis</i>	黃鰰	NP	C	+					+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	++	++	+	+	+	++	++	+
<i>Rhinogobius spp.</i>	鰻虎魚	NP	C/UN/R	+	++	++	++	++	+	++	++	++	++
<i>Schistura fasciolata</i>	橫紋南鰕	NP	C	+	++	++			+	++	++		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	++	+	+	+	+	++	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+	
<i>Zacco platypus</i>	寬鰭鱈	NP	C	+	+	++	++	++	+	+	++	++	++
2x2m fish counting		No. of fish		35	35	35	25	25	35	35	40	40	30
No. of species				12	10	14	14	11	12	10	14	14	11
Amphibian													
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P (Cap 170, NT)	R	+	+	+	+	+	+	+	+	+	+
<i>Fejervarya limnocharis</i>	澤蛙	NP	VC										
No. of species				1	1	1	1	1	1	1	1	1	1

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common; “R” - Rare

+, occurred; ++, common; +++, abundant/dominant Species in the the study area

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-Reference point was the sampling location outside the works area used to compare the

"Cap 170" - List in Wild Animals Protection Ordinance (Cap.170)

"NT" - Near Threatened in IUCN Red List Status

"PGC"-Potential Global Concern by Fellowes *et al* (2002)

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Baseline monitoring	Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring			
	8-Aug	Jan-09				Jul-09				Jan-10				Jul-10			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
Replicate																	
DO (mg/L)	9.2	9.8	9.9	9.4	9.1	6.4	6.4	6.5	6.8	9.7	9.5	9.5	9.3	8.3	8.5	8.5	8.7
pH	7.49	7.24	7.36	7.53	7.44	7.1	7.25	7	7.05	7.9	8.1	8.1	8.2	7.4	7.5	7.3	7.4
Nitrate (mg N/L)	0.36	0.79	1.1	1.2	1.2	0.31	0.48	0.48	0.59	0.56	1.11	1.13	1.33	0.1	0.2	0.2	0.3
Ammonia (mg/L)	<0.01	PO4-P (µg P/L): <100				0.02	0.02	0.02	0.03	0.01	0.16	0.17	0.07	0.2	0.4	0.2	0.2
Salinity (ppt)	<0.1	<0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Conductivity (µS/cm)	60	80	100	120	120	45	51	52	63	62	96	98	114	84	100	460	54
BOD (mg/L)	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.1-0.3	0.01-0.2				0.01-0.2				0.01-0.2				0.01-0.2			
Water flow at riffle (m/s)	0.4-0.7	0.2-0.5				0.2-0.5				0.2-0.6				0.2-0.6			
Sand (%)	15	15	10	10	10	10	10	10	15	8	8	8	15	8	8	8	15
Stone (%)	80	80	88	88	88	88	88	88	70	90	90	90	70	90	90	90	70
Mud (%)	5	5	2	2	2	2	2	2	5	2	2	2	5	2	2	2	5

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring			
	Jan-11				Jul-11				Jan-12				Jul-12				Aug-13			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	9.6	9.5	9.5	9.1	9.5	9.6	9.4	9.3	9.4	9.2	9.4	9.2	8.2	8	7.8	7.3	8.9	8.5	8.7	8.8
pH	7.1	7.2	7.2	7.1	7.3	7.1	7.1	7.1	7.2	6.9	6.8	6.7	6.8	7.1	7.3	7.6	6.5	6.8	6.8	7.1
Nitrate (mg N/L)	0.1	0.2	0.4	0.5	0.1	0.2	0.3	0.45	0.2	0.3	0.5	0.6	0.13	0.67	0.62	0.82	0.74	0.72	0.83	0.79
Ammonia (mg/L)	0.05	0.07	0.07	0.1	0.06	0.05	0.08	0.1	0.04	0.05	0.06	0.2	0.01	0.02	0.04	0.03	0.02	0.03	0.03	0.04
Salinity (ppt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conductivity (µS/cm)	90	87	93	120	93	90	90	100	92	84	96	110	41	38	73	86	67	77	74	75
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.01-0.2				0.01-0.2				0.01-0.2				0.01-0.2				0.01-0.2			
Water flow at riffle (m/s)	0.2-0.6				0.2-0.6				0.2-0.6				0.2-0.6				0.2-0.6			
Sand (%)	8	8	8	15	8	8	8	15	10	15	10	10	10	10	10	10	10	10	10	10
Stone (%)	90	90	90	70	90	90	90	70	80	70	80	70	60	60	60	60	60	75	75	75
Mud (%)	2	2	2	5	2	2	2	5	10	15	10	20	30	30	30	30	30	15	15	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling site)

Parameter / date	Impact monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	Dec-13				Jan-14				Feb-14				Mar-14				Apr-14			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	9.3	8.6	8.8	8.7	9.1	9.0	8.6	8.5	7.8	8.7	9.8	9.8	7.5	7.8	8.2	8.1	7.7	7.6	7.8	8.0
pH	6.2	6.9	7.1	7.1	6.2	6.9	7.1	7.1	8.2	8.5	8	7.8	8.3	8.2	7.6	7.2	7.6	7.8	8.2	7.8
Nitrate (mg N/L)	0.48	0.57	0.77	0.89	0.9	0.8	1.3	1.26	1.3	1.8	1.6	2.1	1.2	1.4	1.1	1.3	1.5	1.5	1.3	1.2
Ammonia (mg/L)	<0.01	<0.01	<0.01	<0.01	0.04	0.1	0.12	0.15	0.05	0.04	0.1	0.12	0.06	0.04	0.04	0.1	0.1	0.1	0.1	0.1
Salinity (ppt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conductivity (µS/cm)	62	64	90	110	72	78	88	108	78	87	118	119	120	123	125	123	96	114	120	122
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.01-0.2				0.01-0.2				0.01-0.2				0.01-0.2				0.01-0.2			
Water flow at riffle (m/s)	0.2-0.6				0.2-0.6				0.2-0.6				0.2-0.6				0.2-0.6			
Sand (%)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10
Stone (%)	90	85	85	85	90	85	85	85	90	85	85	85	90	85	85	80	90	85	85	75
Mud (%)	5	10	10	10	5	10	10	10	5	10	10	10	5	10	10	15	5	10	10	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	May-14				Jun-14				Jul-14				Aug-14				Sep-14			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	8.2	7.8	8.1	8.2	7.6	7.8	7.4	7.2	7.6	7.2	7.6	7.5	7.6	7.4	7.3	7.6	8.7	8.7	8.4	8.6
pH	7.7	7.8	7.9	8.2	7.6	7.8	7.8	8.1	7.6	7.7	7.8	8	7.8	7.5	7.6	7.8	8.4	8.1	8.4	8.0
Nitrate (mg N/L)	0.9	0.7	0.6	0.7	0.8	0.8	0.9	0.9	0.8	1.1	1.1	0.8	1.2	1.1	0.9	1.1	1.2	1.3	1.2	1.2
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.02	0.02	0.03	0.03	0.01	0.02	0.03	0.03	0	0	0	0	0	0	0	0	0	0	0	0
Conductivity (µS/cm)	82	80	72	66	39	58	69	70	43	85	72	75	75	78	82	86	73	77	74	72
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.01-0.2				0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.6				0.2-0.6				0.2-0.6				0.2-0.6				0.2-0.6			
Sand (%)	5	5	5	10	5	5	5	10	5	5	5	10	5	5	8	10	5	5	8	10
Stone (%)	90	85	85	75	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75
Mud (%)	5	10	10	15	2	5	5	15	2	5	5	15	2	5	2	15	2	5	2	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	Oct-14				Nov-14				Dec-14				Jan-15				Mar-15			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	7.2	7.3	8.1	7.6	7.3	7.3	8.2	7.8	7.2	8.1	8.2	8.2	8.9	9.2	9.3	9.2	9.2	9.1	9	9.3
pH	8.4	8.2	8.1	8.0	8.1	8.3	8.1	8.3	8.5	8.4	8.2	8.2	7.9	8.2	8.3	7.9	7.9	8.2	8.1	7.8
Nitrate (mg N/L)	0.9	1	0.9	1	1	1	0.9	0.9	0.9	1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.01	0.02	0.02	0.02
Conductivity (µS/cm)	47	50	80	88	52	56	82	84	112	92	86	67	156	153	152	163	45	89	92	94
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.6				0.2-0.6				0.2-0.5				0.2-0.5				0.2-0.5			
Sand (%)	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10
Stone (%)	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75
Mud (%)	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring											
	Nov-15				Dec-15				Jan-16				Feb-16				Mar-16				Apr-16											
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4				
Replicate																																
DO (mg/L)	7.9	8.0	8.0	8.1	8.0	8.1	7.9	8.1	7.9	7.8	8.2	8.1	8.1	8.0	8.2	8.2	8.3	8.1	8.1	8.2	8.4	8.3	8.3	8.2								
pH	7.6	7.5	7.6	7.7	7.7	7.5	7.6	7.6	7.8	7.9	7.7	7.7	7.7	7.8	7.7	7.6	7.8	7.7	7.7	7.7	7.6	7.7	7.6	7.7								
Nitrate (mg N/L)	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9								
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1								
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01								
Conductivity (µS/cm)	34.0	32.0	37.0	40.0	36.0	33.0	42.0	62.0	32.0	36.0	40.0	45.0	34.0	32.0	42.0	43.0	32.0	34.0	45.0	42.0	26.0	32.0	44.0	35.0								
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2								
Water flow at pool (m/s)	0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2											
Water flow at riffle (m/s)	0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5											
Sand (%)	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10								
Stone (%)	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75								
Mud (%)	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15								

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	May-16				Jun-16				Jul-16				Aug-16				Sep-16			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	8.1	8.3	8.3	8.2	7.9	8.0	8.0	7.9	7.8	7.9	7.9	7.9	8.0	8.1	8.0	8.0	8.0	8.1	8.1	8.0
pH	7.7	7.7	7.5	7.6	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.7	7.7	7.6	7.7	7.7	7.6	7.6	7.7
Nitrate (mg N/L)	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (µS/cm)	33.0	34.0	32.0	31.0	32.0	33.0	34.0	33.0	29.0	32.0	31.0	39.0	32.0	39.0	40.0	42.0	33.0	34.0	39.0	43.0
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5			
Sand (%)	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10
Stone (%)	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75
Mud (%)	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	Oct-16				Nov-16				Dec-16				Jan-17			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	7.9	7.9	8.0	8.0	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.9	7.9	8.0	8.0
pH	7.7	7.7	7.6	7.7	7.6	7.7	7.6	7.7	7.6	7.7	7.6	7.6	7.6	7.6	7.6	7.6
Nitrate (mg N/L)	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (µS/cm)	29.0	32.0	34.0	45.0	28.0	31.0	31.0	32.0	32.0	32.0	34.0	36.0	33.0	32.0	35.0	36.0
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5			
Sand (%)	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10
Stone (%)	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75
Mud (%)	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	Feb-17				Mar-17				Apr-17				May-17			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.9	7.9	8.0	8.0	8.0	7.9	8.0	7.9
pH	7.6	7.7	7.6	7.7	7.6	7.7	7.7	7.7	7.6	7.7	7.6	7.7	7.8	7.7	7.6	7.7
Nitrate (mg N/L)	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (µS/cm)	29.0	29.0	32.0	35.0	33.0	34.0	32.0	33.0	29.0	29.0	34.0	35.0	32.0	33.0	31.0	29.0
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5			
Sand (%)	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10
Stone (%)	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75
Mud (%)	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
	Jun-17				Jul-17				Aug-17				Sep-17			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	7.9	8.0	8.0	7.9	8.0	8.0	8.0	7.9	8.0	8.1	7.9	7.9	8.0	8.0	7.9	7.9
pH	7.6	7.7	7.6	7.7	7.8	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.7	7.6	7.7	7.7
Nitrate (mg N/L)	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (µS/cm)	22.0	25.0	28.0	32.0	12.0	18.0	17.0	18.0	22.0	23.0	28.0	32.0	23.0	23.0	25.0	32.0
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.03-0.2				0.03-0.2				0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.5				0.2-0.5				0.2-0.5				0.2-0.5			
Sand (%)	5	5	8	10	5	5	8	10	5	5	8	10	5	5	8	10
Stone (%)	93	90	90	75	93	90	90	75	93	90	90	75	93	90	90	75
Mud (%)	2	5	2	15	2	5	2	15	2	5	2	15	2	5	2	15

Table 4.7 Abotic data for Upper Lam Tsuen River

(T1- located at upper river channel sampling site
to T4 - located at lower river Channel sampling
site)

Parameter / date	Post construction monitoring				Post construction monitoring			
	Oct-17				Nov-17			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	7.9	7.8	7.9	7.9	7.8	7.8	7.9	7.8
pH	7.7	7.6	7.6	7.7	7.6	7.7	7.6	7.7
Nitrate (mg N/L)	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.9
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (µS/cm)	22.0	23.0	25.0	28.0	23.0	25.0	28.0	32.0
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.03-0.2				0.03-0.2			
Water flow at riffle (m/s)	0.2-0.5				0.2-0.5			
Sand (%)	5	5	8	10	5	5	8	10
Stone (%)	93	90	90	75	93	90	90	75
Mud (%)	2	5	2	15	2	5	2	15

Agreement No. CE65/2013(EP)
Post-Construction Ecological Monitoring of River
Improvement Work in Upper Lam Tsuen River, She Shan
River and Upper Tai Po River – Investigation
Post-Construction Ecological Monitoring Report (No.47)
She Shan River

November 2017



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19 December, 2017

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19 December, 2017

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Post-Construction Ecological Monitoring of River Improvement Work in Upper Lam Tsuen River, She Shan River and Upper Tai Po River – Investigation

Agreement No. CE65/2013(EP) Post-Construction Ecological Monitoring Report (No.47) She Shan River

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FIGURES

Figure 1: Sampling location of ecological survey and monitoring at She Shan River, Tai Po.

PHOTOS

Photo 1: General view of the river habitat (Lower section)

Photo 2: General view of the river habitat (Middle section)

Photo 3: General view of the river habitat (Upper section)

Photo 4 : Avifauna – *Motacilla alba*

Photo 5 : Avifauna – *Egretta garzetta*

Photo 6: Avifauna – *Motacilla cinerea*

Photo 7 : Odonata – *Trithemis aurora*

Photo 8 : Odonata – *Trithemis festiva*

Photo 9 : Kick Sampling

Photo 10 : Aquatic sample

TABLES

Table 4.1: Flora species recorded along the She Shan River including riparian habitat.

Table 4.2: Flora species recorded from belt transect survey at the She Shan River.

Table 4.3: Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

Table 4.4: Odonata species recorded at the She Shan River.

Table 4.5: Aquatic Macro invertebrates recorded at She Shan River.

Table 4.6: Fish species and Hong Kong Newt recorded at She Shan River.

Table 4.7: Abiotic data for She Shan River.

1 Introduction

- 1.1 Agreement No. CE65/2013(EP) Post-Construction Ecological Monitoring of River Improvement Work in Upper Lam Tsuen River, She Shan River and Upper Tai Po River – Investigation required a post-construction ecological monitoring programme when the project completed. The collected data are mainly used to assess ecological recovery process and effectiveness of ecological migration proposed and enforced during the construction period.
- 1.2 The scope of the ecological monitoring was detailed in EM & A Manual of the project. In brief, the survey aimed to collect data on abiotic factors such as water quality, substratum characteristics, water flow as well as flora and fauna.
- 1.3 China Hong Kong Ecology Consultants Ltd. was committed by Allied Environmental Consultants Ltd (AEC) to undertake the ecological monitoring tasks for the project from December 2014.
- 1.4 This is the number 47 post-construction ecological monitoring report for the project conducted **on 15th of November 2017**. It contains the following subsections:
 - Summary of major points
 - Monitoring Methods and Results
 - Summary and Comments

2 Summary of Major Points

- Field ecological monitoring was undertaken **on 15th of November 2017**;
- Fauna and flora along the drainage project sections are in a process of re-establishing or restoration;
- Fish's abundance was similar to last month ;
- Bird diversity and abundance were in natural fluctuation;
- Odonata abundance decreased; and
- Hong Kong Newt was not found during the survey.

3 Monitoring Methodology

3.1 Riparian Vegetation

Riparian vegetation, including aquatic and emergent, was sampled using line transects along the affected river channel and riparian habitat. Species, relative abundance and average heights were recorded. Vegetation survey was conducted at three selected belt transects located at the upper (T1), middle (T2) and lower portion (T3) of the river channel respectively (**Figure 1**). The belt transects was run across the river channel in order to collect quantitative data of vegetation, e.g., species inventory, height, percentage cover. Qualitative data of plants was collected by recording plant species along line transect, e.g., species inventory, relative abundance. Nomenclature and protection status of the species has followed those documented in the Lai *et al.* (2004) and Hong Kong Herbarium (2015).

3.2 Avifauna

Avifauna survey was conducted during the post construction monitoring period. Special attention was given to those stream channel area which birds used as feeding and foraging habitat. Avifauna surveys were undertaken in the early morning plus species recorded in the rest of the day when conducting other taxonomic groups (benthic, fish, insect) monitoring. Numerical abundance was recorded at fixed count points within a radius of 30 to 50m according to landscape feature and visual penetration extent. The duration of the point count of birds was standardized for 10 minutes at each location in order to collect comparable data. Transect count along accessible section of river channel were used in order to collect qualitative data. Binoculars and digital camera were the main items of equipment used. Nomenclature and protection status of the species has followed in the AFCD website (www.hkbiodiversity.net) and Carey *et al.* (2001).

The point count was conducted at three locations located at the lower (T3), middle (T2) and upper (T1) portion of the river channel respectively. The point count and survey transect locations for the bird survey and sampling sites for surveys of other faunal groups and flora were presented in **Figure 1**.

3.3 Adult Odonata Survey

Adult Odonata survey was conducted along transects (**Figure 1**). Binoculars, digital camera and hand net were utilized to aid identification. Numerical abundance, species identity and other notable behavior were recorded. Nomenclature and protection status of the species has followed those documented in the AFCD website (www.hkbiodiversity.net), Wilson *et al.* (2004) and Tam *et al.* (2011). Adult Odonata survey was conducted along line transects in parallel with river channel within the works area where access was permitted.

3.4 Aquatic Macro-invertebrates

Macro-invertebrates in the riverbed were surveyed. Four sampling sites were selected to collect necessary macro-invertebrate fauna for ecological monitoring information, which covered upper (T1), middle (T2) and lower (T3) sections of the river respectively, as well as reference site (**Figure 1**). Five replicates were taken at each sampling point and pool together for further sample process. Kick sampling and hand netting were the survey methodologies for stream organisms. Dissection microscope and digital camera were used to aid identification and enumeration. Numerical abundance, species identity was recorded. Nomenclature and protection status of the species has followed those documented in the AFCD website (www.hkbiodiversity.net), and other literatures such as Dudgeon (1994).

3.5 Fish Population and Hong Kong Newt

Fish community at the specified river channel was monitored by live trapping, hand netting and direct observation methods. Hong Kong newt was surveyed by direct observation and hand netting as well.

Sampling was conducted at four proposed sampling locations at upper (T1), middle (T2), lower (T3) sections and reference site respectively. Those

sampling sites covered major type of stream habitats, e.g. river pool and riffle (**Figure 1**). The number of the observed fish was estimated and recorded. Nomenclature and protection status of the species has followed those documented in the AFCD website (www.hkbiobiodiversity.net) and Lee *et al.* (2004).

3.6 Abiotic Data Collection

3.6.1 Water Quality Monitoring

Dissolved oxygen level, pH value, conductivity, salinity, BOD and nutrient level (nitrate and ammonium) were sampled and analyzed by conventional methods in situ or in laboratory. The instruments for measuring dissolved oxygen level, pH value, conductivity, salinity were model: DO-5510, AZ8685, AZ8361 and AZ8374 respectively. All the instruments were calculated every monitoring month according to the operation manuals in order to obtain the precise result. BOD test took 5 days to complete within darkness incubator with stable temperature at 20°C and was performed using model: DO-5510 for measuring dissolved oxygen. Nutrient levels including nitrate and ammonia were performed in laboratory by applying the In-house method SOP056 (FIA) and SOP057 (FIA) respectively.

3.6.2 Sediment Characteristics

Sediment/substrate characteristics were recorded of sediment cover in percentage e.g. mud, sand, rock, boulder and cemented bottom in the stream bed at sampling sites.

3.6.3 Water Flow

Water flow rates in river channel were measured by recording the time taken for a floating object (e.g. floating ball) in a measured distance. The sampling locations for surveys were presented in **Figure 1**.

4 Monitoring Results

4.1 Vegetation

In total, 79 flora species was recorded within the survey transects along the river course. The recorded floras were generally common wetland species. The height of the dominated riparian grass and herb species were in a range from 0.2m to 0.5m as observed along survey transect. Abundant flora species were shown in the **Table 4.1** marked with relative abundance sign “+++”. Vegetation has partially covered the river bed in middle and lower sections (Photos 1-2) and generally covered the riverbed and riparian habitat in upper sections (Photo 3). Aquatic plants *Brachiaria mutica* was the most abundant plants found along the river channel. *Mucuna championii* and *Cibotium barometz* are classified as endangered and vulnerable in China respectively, and were recorded in the woodland adjacent to She Shan River. *Cibotium barometz* is also classified as category II in wild plant under state protection. Results of vegetation survey and belt transect survey were presented in **Table 4.1** and **Table 4.2**. **Figure 1** shows the transect line for the flora surveys.

4.2 Fauna

4.2.1 Avifauna

An avifauna survey was undertaken along survey transects and at three selected point count locations. In total, 15 species of birds were recorded during the bird surveys within project area. 4 recorded species were wetland dependant birds and observed foraging in the river channel including *Motacilla alba* (Photo 4), *Ardeola bacchus*, *Egretta garzetta* (Photo 5), and *Motacilla cinerea* (Photo 6). The dominant species of the river was a common species *Pycnonotus jocosus*. All the birds in Hong Kong are under protection of Wild Animals Protection Ordinance (Cap. 170). Some of wetland dependent species with conservation interest including *Ardeola bacchus* and *Egretta garzetta* were observed foraging in the river. *Ardeola bacchus* and *Egretta garzetta* are considered as Regional Concern by Fellowes *et al.* (2002) respectively. Except foraging and roosting behaviour of some birds were observed, no other remarkable behaviour was noticed. Transect and Point Count locations were shown on **Figure 1**. Result of bird survey was presented in the **Table 4.3**.

4.2.2 Adult Odonata Survey

Odonata survey was performed and a list of recorded odonata species at She Shan River is shown in **Table 4.4**. The abundance of odonata in dry season was lower than that in wet season (Wilson *et al.*, 2004 & Tam *et al.*, 2011). A total of 7 species was recorded in this month; those recorded species were mostly common species in Hong Kong (Photos 7-8). The result of this month was similar to approximate period of last year. Sampling location was shown on **Figure 1**.

4.2.3 Aquatic Macro-invertebrates

Survey of aquatic marco-invertebrates was carried out (Photo 9). The river benthic fauna collected was mainly comprised of insects, mollusks and crustaceans (Photo 10). Details of recorded benthic fauna refer to **Table 4.5**. Sampling location was shown on **Figure 1**.

4.2.4 Hong Kong Newt

Survey of Hong Kong Newt was performed (Photo 9). Hong Know Newt was not recorded in this month. Hong Kong Newt is listed in Wild Animals Protection Ordinance (Cap. 170) and classified as “Near Threatened” under IUCN Red List Status and as “Potential Global Concern” by Fellowes *et al.* (2002). Record of Hong Kong Newts can be referred to **Table 4.6**.

4.2.5 Fish Fauna

Fish surveys were performed at She Shan River and total 14 species of freshwater fish were recorded. Native fish *Zacco platypus* and *Oreochromis niloticus* were abundant species dominating in the river channel. Among the recorded fish, *Parazacco spilurus* is classified as “Vulnerable” in Red China Data Book, it was commonly observed along the river with low abundance. The current fish’s abundance was similar to last month. Two species were first

recorded including *Tilapia joko* and *Hemiculter leucisculus*. *Tilapia joko* is classified as “Vulnerable” in IUCN Red List and *Hemiculter leucisculus* is an uncommon species in Hong Kong. These two species were recorded with low abundance at the middle section of the river. Details of recorded of fish fauna refers to **Table 4.6**. Sampling location was shown on **Figure 1**.

4.3 Abiotic Data

Data on water quality and major stream hydrological feature (water flow and substratum) of the stream were collected and are presented in the **Table 4.7**.

Generally, the water was not polluted and nutrient levels were low even though there were cultivation activities observed nearby the river. The water colour has turned into yellowish because of increase in suspended solid as a result of flooding. Results of water test are presented in the **Table 4.7**.

The river substratum was comprised of over 30-80% stones or rocks in large proportion of the river sections with slow water flow (up to 0.2m/second at pool and 0.5m/second at riffle).

5 Summary and Commentary

Ecological monitoring was carried out in current months and relevant biotic and abiotic data were collected according to project specification and EM & A Manual. Hong Kong New was not recorded during the survey. Low abundance of odonata was observed in this month due to seasonality. Fish’s abundance was similar to the record of last month. The rest of fauna was in a natural fluctuation.

Aquatic plants and riparian vegetation were generally established at new drainage channel. Vegetation has generally covered the riverbed and gabion in upper section and partially covered the rest portion of the river.

Water was not polluted and nutrient levels were low to moderate.

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FIGURE

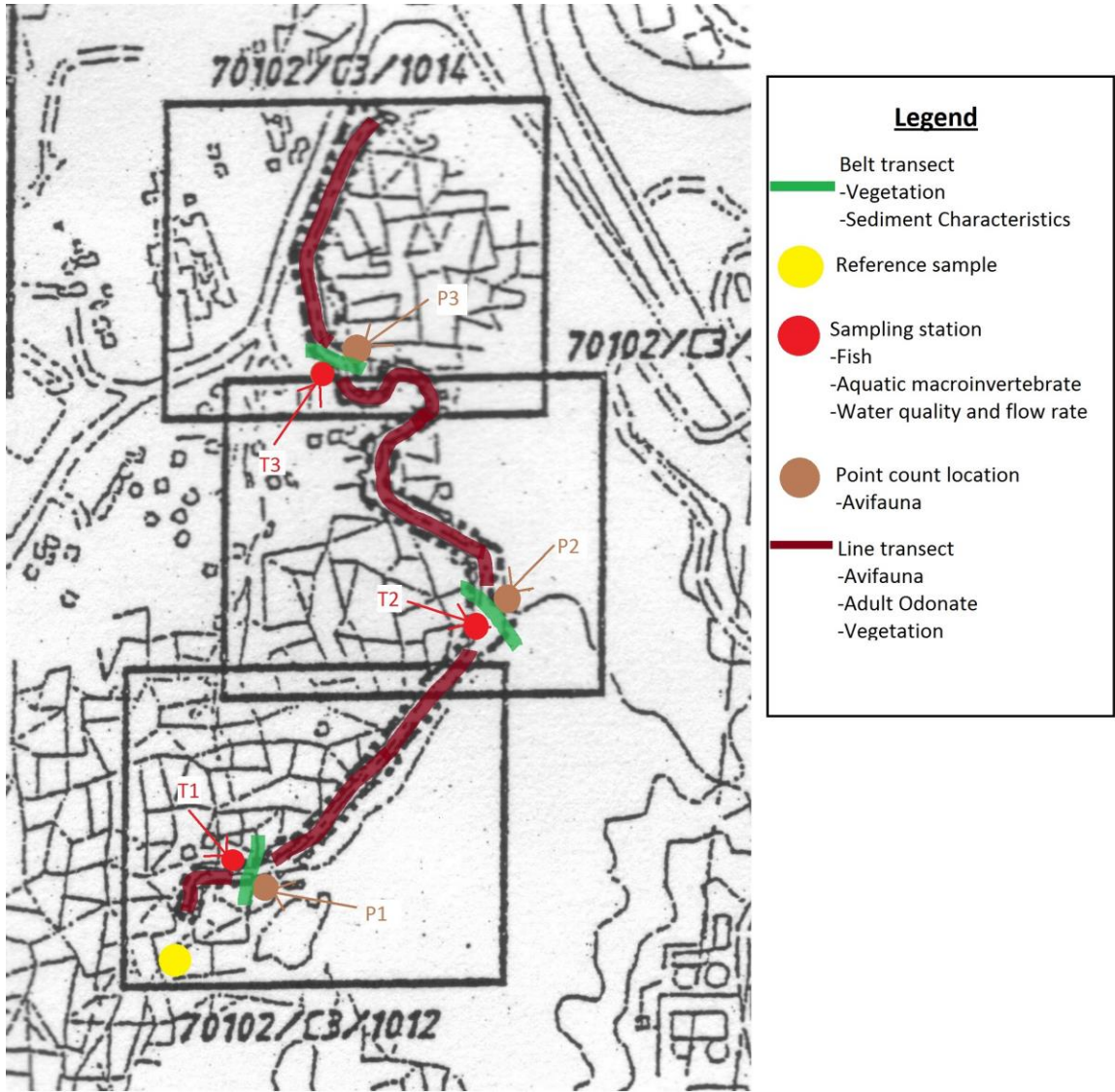


Figure 1. Sampling Location of Ecological Survey and Monitoring at She Shan River, Tai Po.

PHOTOS



Photo 1: General view of the river habitat
(Lower section)



Photo 2: General view of the river habitat
(Middle section)



Photo 3 : General view of the river habitat
(Upper section)



Photo 4 : Avifauna – *Motacilla alba*



Photo 5 : Avifauna – *Egretta garzetta*



Photo 6: Avifauna – *Motacilla cinerea*



Photo 7 : Odonata – *Trithemis aurora*



Photo 8 : Odonata – *Trithemis festiva*



Photo 9 : Kick Sampling



Photo 10 : Aquatic sample

TABLE

Table 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Baseline monitoring	Impact monitoring					Impact monitoring					Post construction monitoring					
				Jul to Aug 08	Jan-09	Jul-09	Jan-10	Jul-10	Jan-11	Jul-11	Jan-12	Jul-12	Jul-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	
Ulmaceae	<i>Celtis sinensis</i>	朴樹		+	+	+	+	+								+	+	+	+	
Ulmaceae	<i>Celtis timorensis</i>	樟葉朴		+	+	+	+	+	+											
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻																	+	
Ulmaceae	<i>Trema tomentosa</i>	山黃麻								+	+	+	+	+	+	+	+	+	+	
Urticaceae	<i>Boehmeria nivea</i>	苧麻		+	+	+	+	+						+	+	+	+	+	+	
Urticaceae	<i>Pilea microphylla</i>	透明草		+	+	+	+	+	+						+	+	+	+	+	
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Verbenaceae	<i>Vitex quinata</i>	山牡荊		+	+	+	+	+												
Polygonaceae	<i>Polygonum perfoliatum</i>	杠板歸																+	+	
Verbenaceae	<i>Lantana camara</i>	馬纓丹		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Floating Plant																				
Araceae	<i>Pistia stratiotes</i>	大葉																		
Lemnaceae	<i>Lemna minor</i>	浮萍			+	+	+	+	+						+	+	+	+	+	
Submerged Plant																				
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻																+	+	+
No. of Species					48	54	54	54	57	46	23	36	36	36	40	41	51	54	67	69

Note:

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant in study area

EN- Endangered in China

VU- Vulnerable in China

CII- Wild plant under State protection (category II)

Table 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Post construction monitoring					Post construction monitoring					Post construction monitoring			
				Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15
Riparian Plant																	
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜		+	+	+	+	+	+	+							
Acanthaceae	<i>Asystasia micrantha</i>	小花十萬錯															
Actinidiaceae	<i>Saurauia tristyla</i>	水東哥															
Acoraceae	<i>Acorus gramineus</i>	金錢蒲		+	+	+	+	+	+	+							
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草		+	+	+	+	+	+	+							
Amaranthaceae	<i>Celosia argentea L.</i>	青葙		+	+	+	+	+	+	+							
Apiaceae	<i>Oenanthe javanica</i>	水芹		+	+	+	+	+									
Aquifoliaceae	<i>Ilex rotunda</i>	鐵冬青															
Araceae	<i>Allocasia odora</i>	海芋		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Araceae	<i>Colocasia esculenta</i>	芋		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Araceae	<i>Syngonium podophyllum</i>	合果芋			+	+	+	+	+	+							
Araceae	<i>Pistia stratiotes</i>	大藻									+	+	+	+	+	+	+
Araliaceae	<i>Schefflera heptaphylla</i>	鵝腳木															
Asteraceae	<i>Bidens alba</i>	白花鬼針草		++	++	++	++	++	++	++	+	++	++	++	++	++	++
Asteraceae	<i>Synedrella nodiflora</i>	金腰箭		+	+	+	+	+	+	+					+	+	+
Asteraceae	<i>Mikania micrantha</i>	薇甘菊		++	++	++	++	++	++	++	++	++	++	++	++	++	++
Asteraceae	<i>Erigeron karvinskianus</i>	加勒比飛蓬		+	+	+	+	+	+	+					+	+	+
Asteraceae	<i>Eclipta prostrata</i>	鱧腸		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Gynura divaricata</i>	白子菜		+	+	+	+	+	+	+		+	+	+	+	+	+
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Emilia sonchifolia</i>	一點紅		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Erechtites hieracifolius</i>	梁子菜		+	+	+	+	+	+	+					+	+	+
Asteraceae	<i>Youngia japonica</i>	黃鹌菜		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Spilanthes paniculata</i>	金鈕扣		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Gnaphalium pensylvanicum</i>	匙葉鼠麴草															
Asteraceae	<i>Soliva anthemifolia</i>	裸柱菊															
Asteraceae	<i>Conyza sumatrensis</i>	蘇門白酒草															
Asteraceae	<i>Wedelia trilobata</i>	三裂葉蟛蜞菊															
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨		+	+	+	+	+	+	+	+	+	+	+	++	++	+
Begoniaceae	<i>Begonia cucullata var. hookeri</i>	四季秋海棠		+	+	+	+	+	+	+							
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨		+	+	+	+	+	+	+							
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜		+	+	+	+	+	+	+	+	++	++	++	+	+	+
Brassicaceae	<i>Rorippa indica</i>	塘葛菜		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Brassicaceae	<i>Capsella bursa-pastoris</i>	薺菜		+	+	+	+	+	+	+							
Caesalpinaceae	<i>Bauhinia championii</i>	缺葉藤									+	+	+	+	+	+	+
Caesalpinaceae	<i>Bauhinia glauca</i>	羊蹄甲藤															
Caryophyllaceae	<i>Drymaria diandra</i>	荷蓮豆		+	+	+	+	+			+	+	+	+	+	+	+

Table 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Post construction monitoring					Post construction monitoring					Post construction monitoring			
				Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁		+	+	+	+	+	+	+		+	+	+	+	+	+
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍		+	+	+	+	+	+	+				+	+	+	+
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香		+	++	+++	+++	++	++	++	+	+	+	+	+	+	+
Oxalidaceae	<i>Averrhoa carambola</i>	楊桃															
Oxalidaceae	<i>Oxalis corniculata</i>	酢醬草		+	+	+	+	+						+	+	+	+
Oxalidaceae	<i>Oxalis debilis</i>	紅花酢醬草															
Plantaginaceae	<i>Plantago major</i>	車前草				+	+	+	+	+							
Poaceae	<i>Panicum maximum</i>	大黍		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Panicum repens</i>	枯骨草		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Brachiaria mutica</i>	巴拉草		+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++
Poaceae	<i>Pennisetum purpureum</i>	象草		+	+	+	+	+	+	+	++	++	++	++	+	+	+
Poaceae	<i>Coix lacryma-jobi</i>	薏苡		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹		+	++	++	++	++	++	++	+	+	+	+	+	+	+
Poaceae	<i>Miscanthus floridulus</i>	五節芒		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草		+	+	+	+	+	+	+				+	+	+	+
Poaceae	<i>Digitaria radicata</i>	紅尾翎									+	+	+	+	+	+	+
Poaceae	<i>Imperata cylindrica</i>	大白茅															
Portulacaceae	<i>Portulaca oleracea</i>	馬齒莧															
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum glabrum</i>	光蓼															+
Polygonaceae	<i>Polygonum chinense</i>	火炭母		+	+	+	+	+	+	+				+	+	+	+
Polygonaceae	<i>Rumex trisetifer</i>	假菠菜		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum lapathifolium</i>	大馬蓼		+	+	+	+	+	+	+				+	+	+	+
Polygonaceae	<i>Polygonum multiflorum</i>	何首烏															
Rubiaceae	<i>Hedyotis corymbosa</i>	傘房花耳草															
Rubiaceae	<i>Hedyotis hedyotideia</i>	牛白藤															
Sapindaceae	<i>Dimocarpus longan</i>	龍眼															
Solanaceae	<i>Solanum torvum</i>	水茄		+	+	+	+	+	+	+	+	+	+	+	+	+	+
Solanaceae	<i>Solanum americanum</i>	少花龍葵		+	+	+	+	+	+	+							
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨									+	+	+	+	+	+	+

Table 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Post construction monitoring					Post construction monitoring					Post construction monitoring				
				Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	
Ulmaceae	<i>Celtis sinensis</i>	朴樹		+	+	+	+	+	+	+		+	+	+	+	+	+	
Ulmaceae	<i>Celtis timorensis</i>	樟葉朴																
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻		+	+	+	+	+	+	+								
Ulmaceae	<i>Trema tomentosa</i>	山黃麻		+	+	+	+	+	+	+								
Urticaceae	<i>Boehmeria nivea</i>	苧麻		+	+	+	+	+	+	+								
Urticaceae	<i>Pilea microphylla</i>	透明草		+	+	+	+	+	+	+							+	
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛		+	+	+	+	+	+	+								
Verbenaceae	<i>Vitex quinata</i>	山牡荊																
Polygonaceae	<i>Polygonum perfoliatum</i>	杠板歸		+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Verbenaceae	<i>Lantana camara</i>	馬纓丹		+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Floating Plant																		
Araceae	<i>Pistia stratiotes</i>	大藻																
Lemnaceae	<i>Lemna minor</i>	浮萍		+	+	+	+	+	+	+								
Submerged Plant																		
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻		+	+	+	+	+	+	+				+	+	+	+	
No. of Species					69	73	74	74	74	74	74	42	46	46	51	57	57	59

Note:

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant in study area

EN- Endangered in China

VU- Vulnerable in China

CII- Wild plant under State protection (category II)

Table 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Post construction monitoring									Post construction monitoring							
				Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	
Ulmaceae	<i>Celtis sinensis</i>	朴樹		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Ulmaceae	<i>Celtis timorensis</i>	樟葉朴																		
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻																		
Ulmaceae	<i>Trema tomentosa</i>	山黃麻																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻									+	+	+	+	+	+	+	+	+	
Urticaceae	<i>Pilea microphylla</i>	透明草		+	+	+	+	+	+	+										
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛																		
Verbenaceae	<i>Vitex quinata</i>	山牡荊																		
Polygonaceae	<i>Polygonum perfoliatum</i>	杠板歸		+	+	+	+	+	+	+										
Verbenaceae	<i>Lantana camara</i>	馬纓丹		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Floating Plant																				
Araceae	<i>Pistia stratiotes</i>	大藻				+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Submerged Plant																				
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
No. of Species					59	59	61	61	61	62	62	77	77	77	77	77	77	80	80	80

Note:

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant in study area

EN- Endangered in China

VU- Vulnerable in China

CII- Wild plant under State protection (category II)

Table 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Post construction monitoring											
				Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
Ulmaceae	<i>Celtis sinensis</i>	朴樹		+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Celtis timorensis</i>	樟葉朴													
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻													
Ulmaceae	<i>Trema tomentosa</i>	山黃麻													
Urticaceae	<i>Boehmeria nivea</i>	苧麻		+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pilea microphylla</i>	透明草													
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛													
Verbenaceae	<i>Vitex quinata</i>	山牡荊													
Polygonaceae	<i>Polygonum perfoliatum</i>	杠板歸													
Verbenaceae	<i>Lantana camara</i>	馬纓丹		+	+	+	+	+	+	+	+	+	+	+	+
Floating Plant															
Araceae	<i>Pistia stratiotes</i>	大藻		+	+	+	+	+	+	+	+	+	+	+	+
Lemnaceae	<i>Lemna minor</i>	浮萍						+	+	+	+	+	+	+	+
Submerged Plant															
Hydrocharitaceae	<i>Hydrilla verticillata</i>	黑藻		+	+	+	+	+	+	+	+	+	+	+	+
No. of Species				80	80	78	78	79	79	79	79	79	79	79	79

Note:

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundant in study area

EN- Endangered in China

VU- Vulnerable in China

CII- Wild plant under State protection (category II)

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect	Chinese name	Baseline monitoring						Impact monitoring										
				Jul-08			Aug-08			Jan-09			Jul-09							
				P1	P3		P1	P3		T1	T2	T3	T1	T2	T3					
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(cm)	%	Height(cm)	%	Height(cm)	%	Height(cm)	%					
Commelinaceae	<i>Commelina diffusa</i>		節節草		0.2	20			10	6	0.2	2	0.1	5	0.2	5			0.2	10
Poaceae	<i>Panicum repens</i>		枯骨草	0.3	5									0.2	5			0.6	5	
Asteraceae	<i>Mikania micrantha</i>		薇甘菊					0.2	7											
Brassicaceae	<i>Nasturtium officinale</i>		西洋菜																	
Moraceae	<i>Ficus microcarpa</i>		細葉榕		0.7	5		0.6	7											
Moraceae	<i>Ficus hispida</i>		對葉榕		3	10		3	10											
Poaceae	<i>Microstegium ciliatum</i>		剛秀竹	0.5	5		0.5	3												
Fabaceae	<i>Pueraria lobata</i>		野葛		0.3	5	0.5	3	0.3	5		0.2	5	0.2	5					
Araceae	<i>Colocasia esculenta</i>		芋					0.2	5											
Urticaceae	<i>Boehmeria nivea</i>		苧麻	1.5	30		2	7						3	10			2	5	
Asteraceae	<i>Bidens alba</i>		白花鬼針草															0.3	5	
Poaceae	<i>Pennisetum purpureum</i>		象草	3	50	1	60	3	80	2	60			4	40			2	50	
Poaceae	<i>Coix lacryma-jobi</i>		薏苡																	
Amaranthaceae	<i>Alternanthera philoxeroides</i>		空心蓮子草	0.2	10		0.2	7										0.3	20	
Poaceae	<i>Panicum maximum</i>		大黍									0.5	5							
Moraceae	<i>Broussonetia papyrifera</i>		構樹											6	5					
Polygonaceae	<i>Polygonum chinense</i>		火炭母									0.1	10							
Onagraceae	<i>Ludwigia hyssopifolia</i>		草龍																	
Cyperaceae	<i>Cyperus sp.</i>		莎草																	
Poaceae	<i>Miscanthus floridulus</i>		五節芒																	
Poaceae	<i>Brachiaria mutica</i>		巴拉草																	
Blechnaceae	<i>Blechnum orientale</i>		烏毛蕨																	
Poaceae	<i>Pennisetum alopecuroides</i>		狼尾草																	
Araceae	<i>Alocasia macrorrhizos</i>		海芋																	
Lemnaceae	<i>Lemna minor</i>		浮萍																	
Polygonaceae	<i>Polygonum hydropiper</i>		水蓼																	
Cyperaceae	<i>Cyperus involucratus</i>		風車草																	
Onagraceae	<i>Ludwigia erecta</i>		美洲水丁香																	
Convolvulaceae	<i>Ipomoea cairica</i>		五爪金龍																	
Bare Gound											98		75		30		##		95	10

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Impact monitoring						Impact monitoring						Impact monitoring					
			Stream		Jan-10		T3		T1		Jul-10		T3		T1		Jan-11		T3	
			Transect	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	60						0.5	50	0.5	50	0.2	45	0.2	10			
Poaceae	<i>Panicum repens</i>	枯骨草			0.6	25								0.3	30					
Asteraceae	<i>Mikania micrantha</i>	薇甘菊			0.2	5						1	20	0.3	5					
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜												0.2	5					
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹								1.5	30					1.5	30			
Fabaceae	<i>Pueraria lobata</i>	野葛																0.3	2	
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	5				0.5	5									0.5	2	
Poaceae	<i>Pennisetum purpureum</i>	象草														1.5	20			
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1.5	20														1	1	
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍						0.4	5			1.5	5					0.4	2	
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍						0.4	5											
Cyperaceae	<i>Cyperus sp.</i>	莎草						0.5	5											
Poaceae	<i>Miscanthus floridulus</i>	五節芒								1.5	5									
Poaceae	<i>Brachiaria mutica</i>	巴拉草																		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋																		
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草																		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																		
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				15		70	##		80		15		25		15		40		93	

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1 - Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Impact monitoring						Impact monitoring						Impact monitoring					
			Jul-11						Jan-12						Jul-12					
			T1		T2		T3		T1		T2		T3		T1		T2		T3	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.2	5	0.8	40	Channelised	0.3	25	0.3	40	Channelised	0.3	2	0.3	30	0.3	20		
Poaceae	<i>Panicum repens</i>	枯骨草	0.5	20																
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	30				0.2	15						0.2	2				
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																		
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			1.5	15		1	45	0.8	5					0.8	30			
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草						1	5										0.3	10
Poaceae	<i>Pennisetum purpureum</i>	象草			1.5	15		2.5	5	2.5	25				2.5	1	2.5	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡						2.5	2											
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																	0.1	5
Poaceae	<i>Panicum maximum</i>	大黍	1	15																
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母													0.2	2				
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																	1	5
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.5	20			1	15				1	15		1	10		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋																		
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草																		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																		
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				30		10	##		3		15		100		93		20	50		

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Impact monitoring						Impact monitoring						Post construction monitoring					
			Stream		Jul-13		Dec-13		Jan-14		T1		T2		T3					
			Transect	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	15	0.3	5			0.1	10	0.5	30	0.1	1	0.2	15	0.5	30	0.2	1
Poaceae	<i>Panicum repens</i>	枯骨草											0.2	1					0.2	1
Asteraceae	<i>Mikania micrantha</i>	薇甘菊						0.1	10				0.2	1	0.1	10			0.2	1
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																		
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			0.8	35														
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草											0.3	1					0.3	1
Poaceae	<i>Pennisetum purpureum</i>	象草			2.5	5		1.5	10	1.5	10			1.5	10	1.5	10			
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																		
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍											0.3	2					0.3	2
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1	20	1	50		1.5	60	0.8	20			1.5	60	0.8	20			
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨					0.3	1												
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋																		
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草																		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香	0.8	3			0.5	5		0.8	30					0.8	30			
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				65		5		94		10		10		94		5		10		94

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Feb-14						Mar-14						Apr-14					
			T1		T2		T3		T1		T2		T3		T1		T2		T3	
Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.2	20	0.5	30	0.2	5	0.3	20	0.5	35	0.3	6			0.5	30		
Poaceae	<i>Panicum repens</i>	枯骨草				0.2	1					0.4	1							
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.1	10			0.2	1	0.1	10			0.2	1	0.3	10	0.3	10	0.3	1
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜												0.3	20			0.3	5	
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																		
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草				0.4	1					0.4	1			0.3	5	0.8	1	
Poaceae	<i>Pennisetum purpureum</i>	象草	1.5	10	1.5	10			1.5	5	1.5	5								
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																0.8	1	
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍				0.4	1					0.4	1							
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.5	55	0.8	25			1.5	60	0.8	30			1.5	50	1	50		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草												2	20					
Araceae	<i>Alocasia macrorrhizos</i>	海芋																	0.8	1
Lemnaceae	<i>Lemna minor</i>	浮萍																	N.A	5
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草																		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香			0.8	30					0.8	25							1	2
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				5		5		91		5		5		90		0		5		84

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

		Post construction monitoring						Post construction monitoring						Post construction monitoring						
		May-14						Jun-14						Jul-14						
		T1		T2		T3		T1		T2		T3		T1		T2		T3		
Family	Species	Chinese name	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.5	20					0.5	25					0.5	25		
Poaceae	<i>Panicum repens</i>	枯骨草																		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	10	0.3	10	0.3	1	0.3	10	0.3	10	0.3	1	0.3	10	0.3	10	0.3	2
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜	0.3	5			0.3	5	0.3	5			0.3	5	0.3	2			0.3	2
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																		
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.3	5	0.8	1			0.3	5	0.8	1			0.3	5	0.8	2
Poaceae	<i>Pennisetum purpureum</i>	象草																		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡					0.8	1					0.8	1					0.8	1
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.5	40	1	40			1.5	45	1	45			1.5	45	1	45		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草	2	15					2	15					2	12				
Araceae	<i>Alocasia macrorrhizos</i>	海芋					0.8	1					0.8	1					0.8	1
Lemnaceae	<i>Lemna minor</i>	浮萍					N.A	5					N.A	5					N.A	1
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草																		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					1	2					1	2					1	4
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				30		25		84		25		15		84		31		15		87

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream		Aug-14		T3		T1		T2		T3		T1		T2		T3	
			Transect		Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.5	25					0.5	25			1	10	1	50	0.1	2
Poaceae	<i>Panicum repens</i>	枯骨草																		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	12	0.3	12	0.3	5	0.3	12	0.3	12	0.3	5	0.3	5	1	15	0.3	2
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜	0.3	1			0.3	1	0.3	1			0.3	1						
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																		
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.3	5	0.8	5			0.5	5	0.8	5	1	2	0.5	5	0.8	10
Poaceae	<i>Pennisetum purpureum</i>	象草																		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡					1.2	1					1.5	1					1.5	1
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.5	50	1	50			1.5	50	1	50			1.8	65	1.8	20	1.5	5
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草	2	10					2	10					2	15	3	5		
Araceae	<i>Alocasia macrorrhizos</i>	海芋					0.8	1					0.8	1						
Lemnaceae	<i>Lemna minor</i>	浮萍					N.A	1					N.A	1						
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼															1	3		
Cyperaceae	<i>Cyperus involucratus</i>	風車草															1.7	2		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					1	6					1	6	1.5	1			2	5
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				27		8	80		27		8	80		2		0				75

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1 - Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring							
			Stream		Nov-14		Dec-14		Jan-15		T1		T2		T3		T1		T2		T3	
			Transect	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)
Commelinaceae	<i>Commelina diffusa</i>	節節草	1	10	1	50	0.1	2	1	10	1	50	0.1	2	0.5	10	0.8	70	0.3	40		
Poaceae	<i>Panicum repens</i>	枯骨草																				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	1	15	0.3	2	0.3	5	1	15	0.3	2	0.4	10	0.5	15				
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																				
Moraceae	<i>Ficus microcarpa</i>	細葉榕																				
Moraceae	<i>Ficus hispida</i>	對葉榕																				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																				
Fabaceae	<i>Pueraria lobata</i>	野葛																				
Araceae	<i>Colocasia esculenta</i>	芋																				
Urticaceae	<i>Boehmeria nivea</i>	苧麻																				
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	2	0.5	5	0.8	10	1	2	0.5	5	0.8	10								
Poaceae	<i>Pennisetum purpureum</i>	象草																				
Poaceae	<i>Coix lacryma-jobi</i>	薏苡				1.5	1					1.5	1									
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																				
Poaceae	<i>Panicum maximum</i>	大黍																				
Moraceae	<i>Broussonetia papyrifera</i>	構樹																				
Polygonaceae	<i>Polygonum chinense</i>	火炭母																				
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																				
Cyperaceae	<i>Cyperus sp.</i>	莎草																				
Poaceae	<i>Miscanthus floridulus</i>	五節芒																				
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.8	70	1.8	25	1.5	8	1.8	70	1.8	25	1.5	8	1.5	80	1	5	1	25		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																				
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草	2	10	3	2			2	10	3	2										
Araceae	<i>Alocasia macrorrhizos</i>	海芋																				
Lemnaceae	<i>Lemna minor</i>	浮萍																				
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼			1	1					1	1										
Cyperaceae	<i>Cyperus involucratus</i>	風車草			1.7	1					1.7	1				1.5	5					
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香	1.5	1			2	5	1.5	1			2	5						2	10	
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																				
Bare Gound				2		1		72		2		1		72		0		5				25

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream		Feb-15		T3		Mar-15		T2		T3		Apr-15		T2		T3	
			Transect	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.6	10	1	70	0.4	40	0.6	10	1	70	0.5	40	0.6	10	1	70	0.5	40
Poaceae	<i>Panicum repens</i>	枯骨草																		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.4	10	0.5	15			0.4	10	0.5	15			0.4	10	0.5	15		
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																		
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																		
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草																		
Poaceae	<i>Pennisetum purpureum</i>	象草																		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																		
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.5	80	1.3	5	1.3	25	1.5	80	1.3	5	1.3	25	1.5	80	1.4	5	1.4	25
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋																		
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草			1.5	5					1.5	5					1.5	5		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					2	10					2	10					2	10
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																		
Bare Gound				0		5		25		0		5		25		0		5		25

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring							
			Stream		May-15		Jun-15		Jul-15		T1		T2		T3		T1		T2		T3	
			Transect	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	5	0.7	50	0.5	25	0.3	5	0.7	50	0.5	25			0.3	25				
Poaceae	<i>Panicum repens</i>	枯骨草																				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.5	10			0.3	5	0.5	10			0.4	10	0.4	10				
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																				
Moraceae	<i>Ficus microcarpa</i>	細葉榕																				
Moraceae	<i>Ficus hispida</i>	對葉榕																				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																				
Fabaceae	<i>Pueraria lobata</i>	野葛																				
Araceae	<i>Colocasia esculenta</i>	芋																				
Urticaceae	<i>Boehmeria nivea</i>	苧麻																				
Asteraceae	<i>Bidens alba</i>	白花鬼針草													0.9	15					0.3	2
Poaceae	<i>Pennisetum purpureum</i>	象草																				
Poaceae	<i>Coix lacryma-jobi</i>	薏苡													1	2						
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																				
Poaceae	<i>Panicum maximum</i>	大黍																				
Moraceae	<i>Broussonetia papyrifera</i>	構樹																				
Polygonaceae	<i>Polygonum chinense</i>	火炭母																				
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																				
Cyperaceae	<i>Cyperus sp.</i>	莎草																				
Poaceae	<i>Miscanthus floridulus</i>	五節芒																				
Poaceae	<i>Brachiaria mutica</i>	巴拉草	1.5	40	1.2	5	1.2	15	1.5	45	1.2	10	1.2	20	0.8	60	1	50	0.8	10		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																				
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																				
Araceae	<i>Alocasia macrorrhizos</i>	海芋																				
Lemnaceae	<i>Lemna minor</i>	浮萍																				
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																				
Cyperaceae	<i>Cyperus involucratus</i>	風車草			1.4	5					1.4	5				1.2	5					
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					1.6	5					1.6	5							1.5	50
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍														0.3	5					
Bare Gound				50		30		55		45		25		50		13		10				38

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream		Aug-15		T3		T1		T2		T3		T1		T2		T3	
			Transect	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.3	15					0.3	17					0.3	17	0.2	10
Poaceae	<i>Panicum repens</i>	枯骨草																		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10	0.4	5			0.5	10	0.4	5			0.5	10	0.4	20		
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																		
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																		
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.9	15			0.5	2	0.9	15			0.5	2	0.9	30				
Poaceae	<i>Pennisetum purpureum</i>	象草																		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	2					1	2					1	2				
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopidolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.9	60	1	35	0.9	10	0.9	60	1	38	0.9	10	0.3	30	1	15	0.9	1
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋																		
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草			1.2	5					1.2	5					1.2	5	0.4	2
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					1.5	50					1.5	50					0.3	15
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.3	5					0.3	5					0.3	5		
Bare Gound				13		40		38		13		35		38		28		43		72

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream		Nov-15		T3		Dec-15		T2		T3		Jan-16		T2		T3	
			Transect		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
		Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.3	17	0.2	10			0.3	10	0.2	5			0.3	5	0.2	5
Poaceae	<i>Panicum repens</i>	枯骨草																		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10	0.4	20			0.5	10	0.5	10			0.5	10	0.5	5		
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜															0.3	10		
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																		
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.9	30					1	30					1	30				
Poaceae	<i>Pennisetum purpureum</i>	象草																		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	2					1	2					1	2				
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																		
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.3	30	1	15	0.9	1	0.3	30	1	5	1	1	0.3	15	1	5	1	5
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋																		
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucreatus</i>	風車草			1.2	5	0.4	2			1.2	5	0.4	2			1.2	5	0.4	2
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					0.3	15					0.3	5					0.3	5
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.3	5					0.3	5					0.3	5		
Bare Gound				28		43		72		28		70		87		43		70		83

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

		Post construction monitoring						Post construction monitoring						Post construction monitoring							
		Stream		Feb-16						Mar-16						Apr-16					
		Transect		T1		T2		T3		T1		T2		T3		T1		T2		T3	
Family	Species	Chinese name	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.3	5	0.2	5			0.3	5	0.2	5			0.3	10	0.2	5	
Poaceae	<i>Panicum repens</i>	枯骨草																			
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10	0.5	5			0.5	10	0.5	5			0.5	10	0.5	10			
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜			0.3	10					0.3	10					0.3	10			
Moraceae	<i>Ficus microcarpa</i>	細葉榕																			
Moraceae	<i>Ficus hispida</i>	對葉榕																			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																			
Fabaceae	<i>Pueraria lobata</i>	野葛																			
Araceae	<i>Colocasia esculenta</i>	芋																			
Urticaceae	<i>Boehmeria nivea</i>	苧麻																			
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	30					1	35					1	35					
Poaceae	<i>Pennisetum purpureum</i>	象草																			
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	2					1	2					1	2					
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草																			
Poaceae	<i>Panicum maximum</i>	大黍																			
Moraceae	<i>Broussonetia papyrifera</i>	構樹																			
Polygonaceae	<i>Polygonum chinense</i>	火炭母																			
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																			
Cyperaceae	<i>Cyperus sp.</i>	莎草																			
Poaceae	<i>Miscanthus floridulus</i>	五節芒																			
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.3	15	1	5	1	5	0.3	15	1	5	1	5	0.3	15	1	5	1	5	
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																			
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																			
Araceae	<i>Alocasia macrorrhizos</i>	海芋																			
Lemnaceae	<i>Lemna minor</i>	浮萍																			
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																			
Cyperaceae	<i>Cyperus involucreatus</i>	風車草			1.2	5	0.4	2			1.2	5	0.4	2			1.2	5	0.4	2	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					0.3	5					0.3	5					0.3	5	
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.3	5					0.3	5					0.3	5			
Bare Gound				43		70		83		38		70		83		38		60		83	

P1 – Point count location 1; P3 – Point count location 3

Table 4.2. Flora species recorded from belt transect survey at the She Shan River

(T1 - Upper stream section, T2 - middle stream section and T3 - Lower stream section)

		Post construction monitoring						Post construction monitoring							
		Stream		May-16						Jun-16					
		Transect		T1		T2		T3		T1		T2		T3	
Family	Species	Chinese name	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.3	5	0.2	8			0.3	5	0.2	8	
Poaceae	<i>Panicum repens</i>	枯骨草													
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10	0.5	8			0.5	10	0.5	8			
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜			0.3	8					0.3	8			
Moraceae	<i>Ficus microcarpa</i>	細葉榕													
Moraceae	<i>Ficus hispida</i>	對葉榕													
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹													
Fabaceae	<i>Pueraria lobata</i>	野葛													
Araceae	<i>Colocasia esculenta</i>	芋													
Urticaceae	<i>Boehmeria nivea</i>	苧麻													
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	15					1	15					
Poaceae	<i>Pennisetum purpureum</i>	象草													
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	10					1	10					
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草													
Poaceae	<i>Panicum maximum</i>	大黍													
Moraceae	<i>Broussonetia papyrifera</i>	構樹													
Polygonaceae	<i>Polygonum chinense</i>	火炭母													
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍													
Cyperaceae	<i>Cyperus sp.</i>	莎草													
Poaceae	<i>Miscanthus floridulus</i>	五節芒													
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.3	15	1	5	1	10	0.3	15	1	5	1	10	
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨													
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草													
Araceae	<i>Alocasia macrorrhizos</i>	海芋													
Lemnaceae	<i>Lemna minor</i>	浮萍													
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼													
Cyperaceae	<i>Cyperus involucratus</i>	風車草			1.2	5	0.4	5			1.2	5	0.4	5	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					0.3	5					0.3	5	
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.3	5					0.3	5			
Bare Gound				50		69		72		50		69		72	

P1 – Point count location 1; P3 – Point count location 3

Table 4.2 (Continuous). Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring						
			Jul-16						Aug-16						Sep-16						
			T1		T2		T3		T1		T2		T3		T1		T2		T3		
Commelinaceae	<i>Commelina diffusa</i>	節節草	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%			
Poaceae	<i>Panicum repens</i>	枯骨草			0.3	5	0.2	8			0.3	5	0.2	8			0.5	15	0.3	8	
Asteraceae	<i>Mikania micrantha</i>	薇甘菊																			
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜						0.5	3	0.5	5										
Moraceae	<i>Ficus microcarpa</i>	細葉榕			0.3	5					0.3	5									
Moraceae	<i>Ficus hispida</i>	對葉榕																			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			0.3	5	0.3	15			0.3	5	0.3	15			0.4	10	0.4	15	
Fabaceae	<i>Pueraria lobata</i>	野葛																			
Araceae	<i>Colocasia esculenta</i>	芋																			
Urticaceae	<i>Boehmeria nivea</i>	苧麻																			
Asteraceae	<i>Bidens alba</i>	白花鬼針草																			
Poaceae	<i>Pennisetum purpureum</i>	象草	1	15					1	15					1.3	15					
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																			
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	1	10					1	10					1	10					
Poaceae	<i>Panicum maximum</i>	大黍																			
Moraceae	<i>Broussonetia papyrifera</i>	構樹																			
Polygonaceae	<i>Polygonum chinense</i>	火炭母																			
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																			
Cyperaceae	<i>Cyperus sp.</i>	莎草																			
Poaceae	<i>Miscanthus floridulus</i>	五節芒																			
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.4	10	0.5	25			0.4	15	0.5	20			0.4	15	0.5	20	
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.3	15	1	5	1	10	0.3	15	1	10	1	10	0.3	15	1	10	1	10	
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																			
Araceae	<i>Alocasia macrorrhizos</i>	海芋																			
Lemnaceae	<i>Lemna minor</i>	浮萍																			
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																			
Cyperaceae	<i>Cyperus involucratus</i>	風車草																			
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																			
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.2	5	0.3	5			0.2	5	0.3	5			0.2	5	0.3	5	
Bare Gound					0.3	5					0.3	5					0.3	5			
					60		65		37		57		50		42		60		45		42

P1 – Point count location 1; P3 – Point count location 3

Table 4.2 (Continuous). Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring					
			Oct-16			Nov-16			Dec-16					
			T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
			Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%	Height(m)%
Commelinaceae	<i>Commelina diffusa</i>	節節草												
Poaceae	<i>Panicum repens</i>	枯骨草		0.5 15	0.5 8				0.6 15	0.6 8				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊												
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜												
Moraceae	<i>Ficus microcarpa</i>	細葉榕												
Moraceae	<i>Ficus hispida</i>	對葉榕												
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹		0.5 10	0.5 15				0.6 10	0.5 15		0.1 10		
Fabaceae	<i>Pueraria lobata</i>	野葛												
Araceae	<i>Colocasia esculenta</i>	芋												
Urticaceae	<i>Boehmeria nivea</i>	苧麻												
Asteraceae	<i>Bidens alba</i>	白花鬼針草												
Poaceae	<i>Pennisetum purpureum</i>	象草	1.4 15			1.5 15								
Poaceae	<i>Coix lacryma-jobi</i>	薏苡												
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	1.1 10			1.1 10					0.1 10			
Poaceae	<i>Panicum maximum</i>	大黍												
Moraceae	<i>Broussonetia papyrifera</i>	構樹												
Polygonaceae	<i>Polygonum chinense</i>	火炭母												
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍												
Cyperaceae	<i>Cyperus sp.</i>	莎草												
Poaceae	<i>Miscanthus floridulus</i>	五節芒												
Poaceae	<i>Brachiaria mutica</i>	巴拉草		0.5 15	0.5 20				0.6 15	0.6 20		0.1 15	0.1 15	0.1 20
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.4 15	1 10	1 10	0.5 15	1 10	1 10	1 10	1 10	0.1 15	0.1 10	0.1 10	0.1 10
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草												
Araceae	<i>Alocasia macrorrhizos</i>	海芋												
Lemnaceae	<i>Lemna minor</i>	浮萍												
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼												
Cyperaceae	<i>Cyperus involucratus</i>	風車草												
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香												
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍		0.2 5	0.3 5				0.3 5	0.4 5		0.1 5	0.1 5	0.1 5
Bare Gound				0.3 5					0.4 5			0.4 5		
			60	45	42	60	45	42	75	60	65			

P1 – Point count location 1; P3 – Point count location 3

Table 4.2 (Continuous). Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring						
			Jan-17						Feb-17						Mar-17						
			T1		T2		T3		T1		T2		T3		T1		T2		T3		
		Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%		
Commelinaceae	<i>Commelina diffusa</i>	節節草																			
Poaceae	<i>Panicum repens</i>	枯骨草																			
Asteraceae	<i>Mikania micrantha</i>	薇甘菊																			
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																			
Moraceae	<i>Ficus microcarpa</i>	細葉榕																			
Moraceae	<i>Ficus hispida</i>	對葉榕																			
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			0.2	10				0.3	10					0.4	12				
Fabaceae	<i>Pueraria lobata</i>	野葛																			
Araceae	<i>Colocasia esculenta</i>	芋																			
Urticaceae	<i>Boehmeria nivea</i>	苧麻																			
Asteraceae	<i>Bidens alba</i>	白花鬼針草								0.2	2					0.3	5				
Poaceae	<i>Pennisetum purpureum</i>	象草																			
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																			
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	0.2	10					0.3	10					0.5	10					
Poaceae	<i>Panicum maximum</i>	大黍																			
Moraceae	<i>Broussonetia papyrifera</i>	構樹																			
Polygonaceae	<i>Polygonum chinense</i>	火炭母																			
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																			
Cyperaceae	<i>Cyperus sp.</i>	莎草																			
Poaceae	<i>Miscanthus floridulus</i>	五節芒																			
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.2	15	0.2	20		0.3	20	0.3	20		0.6	25	0.6	25			
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.2	15	0.2	10	0.2	10	0.3	15	0.2	10	0.2	10	0.3	15	0.3	15	0.3	15	
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																			
Araceae	<i>Alocasia macrorrhizos</i>	海芋									0.2	5	0.2	5		0.2	5	0.3	5		
Lemnaceae	<i>Lemna minor</i>	浮萍																			
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																			
Cyperaceae	<i>Cyperus involucratus</i>	風車草									0.3	5	0.3	5		0.3	5	0.3	5		
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																			
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.2	5	0.2	5			0.2	5	0.2	5		0.2	5	0.2	5		
Bare Gound					0.5	5					0.5	5				0.3	5				
					75		60		65		75		43		55		75		28		45

P1 – Point count location 1; P3 – Point count location 3

Table 4.2 (Continuous). Flora species recorded from belt transect survey at the She Shan River

(T1 - Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect	Post construction monitoring						Post construction monitoring											
			Apr-17			May-17			Jun-17											
		Chinese name	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3						
Commelinaceae	<i>Commelina diffusa</i>	節節草	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%						
Poaceae	<i>Panicum repens</i>	枯骨草																		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊																		
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																		
Moraceae	<i>Ficus microcarpa</i>	細葉榕																		
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹		0.5	15	0.3	10		0.7	15	0.4	10	0.7	10	0.4	5				
Fabaceae	<i>Pueraria lobata</i>	野葛																		
Araceae	<i>Colocasia esculenta</i>	芋																		
Urticaceae	<i>Boehmeria nivea</i>	苧麻																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草		0.4	5				0.5	5			0.5	5						
Poaceae	<i>Pennisetum purpureum</i>	象草																		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																		
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	0.5	10				0.5	10				0.5	5						
Poaceae	<i>Panicum maximum</i>	大黍																		
Moraceae	<i>Broussonetia papyrifera</i>	構樹																		
Polygonaceae	<i>Polygonum chinense</i>	火炭母																		
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																		
Cyperaceae	<i>Cyperus sp.</i>	莎草																		
Poaceae	<i>Miscanthus floridulus</i>	五節芒																		
Poaceae	<i>Brachiaria mutica</i>	巴拉草		0.7	35	0.7	30		0.7	35	0.7	30	0.7	30	0.7	25				
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.3	15	0.3	15	0.3	15	0.4	15	0.3	15	0.3	10	0.3	15				
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋		0.5	5	0.3	5		0.5	5	0.3	5		0.5	5	0.3	5			
Lemnaceae	<i>Lemna minor</i>	浮萍																		
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																		
Cyperaceae	<i>Cyperus involucratus</i>	風車草		0.3	5	0.3	5		0.3	5	0.3	5		0.3	5	0.3	5			
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																		
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍		0.2	5	0.2	5		0.3	5	0.2	5		0.3	5	0.2	5			
Bare Ground				0.3	5				0.3	5				0.3	5					
				75		15		30		75		15		30		85		30		40

P1 – Point count location 1; P3 – Point count location 3

Table 4.2 (Continuous). Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring								
			Jul-17						Aug-17						Sep-17								
			T1		T2		T3		T1		T2		T3		T1		T2		T3				
		Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%				
Commelinaceae	<i>Commelina diffusa</i>	節節草																					
Poaceae	<i>Panicum repens</i>	枯骨草																					
Asteraceae	<i>Mikania micrantha</i>	薇甘菊																					
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜																					
Moraceae	<i>Ficus microcarpa</i>	細葉榕																					
Moraceae	<i>Ficus hispida</i>	對葉榕																					
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			0.8	10	0.5	5			0.8	10	0.5	5			0.8	10	0.5	5			
Fabaceae	<i>Pueraria lobata</i>	野葛																					
Araceae	<i>Colocasia esculenta</i>	芋																					
Urticaceae	<i>Boehmeria nivea</i>	苧麻																					
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.7	5					0.8	5					0.8	5					
Poaceae	<i>Pennisetum purpureum</i>	象草																					
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																					
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	0.6	5					0.6	5							0.6	5					
Poaceae	<i>Panicum maximum</i>	大黍																					
Moraceae	<i>Broussonetia papyrifera</i>	構樹																					
Polygonaceae	<i>Polygonum chinense</i>	火炭母																					
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍																					
Cyperaceae	<i>Cyperus sp.</i>	莎草																					
Poaceae	<i>Miscanthus floridulus</i>	五節芒																					
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.7	30	0.7	25			0.7	30	0.7	25			0.7	30	0.7	25			
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.4	10	0.5	10	0.5	15	0.4	10	0.5	10	0.5	15	0.4	10	0.5	10	0.5	15			
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																					
Araceae	<i>Alocasia macrorrhizos</i>	海芋			0.5	5	0.3	5			0.5	5	0.3	5			0.5	5	0.4	5			
Lemnaceae	<i>Lemna minor</i>	浮萍																					
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																					
Cyperaceae	<i>Cyperus involucratus</i>	風車草			0.3	5	0.3	5			0.4	5	0.3	5			0.5	5	0.3	5			
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																					
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍			0.4	5	0.3	5			0.4	5	0.3	5			0.5	5	0.4	5			
Bare Gound					0.3	5					0.3	5					0.3	5					
					85		30		40			85		30			40		85		30		40

P1 – Point count location 1; P3 – Point count location 3

Table 4.2 (Continuous). Flora species recorded from belt transect survey at the She Shan River

(T1- Upper stream section,T2 - middle stream section and T3 - Lower stream section)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring					
			Oct-17						Nov-17					
			T1		T2		T3		T1		T2		T3	
		Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	
Commelinaceae	<i>Commelina diffusa</i>	節節草												
Poaceae	<i>Panicum repens</i>	枯骨草												
Asteraceae	<i>Mikania micrantha</i>	薇甘菊												
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜												
Moraceae	<i>Ficus microcarpa</i>	細葉榕												
Moraceae	<i>Ficus hispida</i>	對葉榕												
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹			0.2	5	0.2	5			0.3	10	0.4	5
Fabaceae	<i>Pueraria lobata</i>	野葛												
Araceae	<i>Colocasia esculenta</i>	芋												
Urticaceae	<i>Boehmeria nivea</i>	苧麻												
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.2	5					0.3	10		
Poaceae	<i>Pennisetum purpureum</i>	象草												
Poaceae	<i>Coix lacryma-jobi</i>	薏苡												
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	0.2	5					0.3	10				
Poaceae	<i>Panicum maximum</i>	大黍												
Moraceae	<i>Broussonetia papyrifera</i>	構樹												
Polygonaceae	<i>Polygonum chinense</i>	火炭母												
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍												
Cyperaceae	<i>Cyperus sp.</i>	莎草												
Poaceae	<i>Miscanthus floridulus</i>	五節芒												
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.2	5	0.2	5			0.4	10	0.3	10
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.2	5	0.2	5	0.2	5	0.4	10	0.4	10	0.5	10
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草												
Araceae	<i>Alocasia macrorrhizos</i>	海芋					0.4	5					0.4	5
Lemnaceae	<i>Lemna minor</i>	浮萍												
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼												
Cyperaceae	<i>Cyperus involucratus</i>	風車草					0.3	5					0.3	5
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香												
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍					0.4	5					0.4	5
Bare Gound					0.2	5					0.2	5		
				90		80		70		80		60		60

P1 – Point count location 1; P3 – Point count location 3

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Impact monitoring				Impact monitoring				Impact monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring					
					Jul-12				Jul-13				Dec-13				Jan-14				Feb-14				Mar-14				Apr-14					
					Abundance				Abundance				Abundance				Abundance				Abundance				Abundance				Abundance					
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																														
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C				+								+				+			2				+	2	2	1	++	1	3	4
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																														
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C																+							+							
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	+		1	+				+				+				+				2			+					2		
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C																														
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																														
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U																														
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U																							+							
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C																														
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																														
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	2	5	1	+		1	1	++		2	3	+	1		2	+	2	3	4	++		2	3	+			2		
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	+	1			+	1	2	1	+	1	2	2	+	1	3	2	+	1	2	3	+	1	3	2	+	1	2	1		
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U																														
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U																														
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U																														
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C								+			1	+				+							+							
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C	+				+				+				+				+				+				+					
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C								+				+				+							+							
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+			1	+		1		+	1	1	1	+	1	1	1	+	1		1	+	1	2	1	+	1	1			
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	4	5	3	+++	2	2	3	+++	3	2	5	++	2	4	6	++	2	2	8	++	3	4	6	++	2	2	5		
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U																														
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	+		2		++				++		2	+			3	2	+			3	+		2		+					
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U								+												+										
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C				+			1	2	+		2																			
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C								+		1		+			1	1	+		2	1	+	1	1		+		1			
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	2		3	+	2			+				+				+			2	+				+					
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C																														
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+				+				+				+				+				+				+					
Great Egret	<i>Ardea alba</i>	大白鶇	R,RC	C								1	+			1	+			1	+			1	+			1	+					
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C									+				+				+				+				+					
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C								+		2		+			2		+				+				+					

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Impact monitoring				Impact monitoring				Impact monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
					Jul-12				Jul-13				Dec-13				Jan-14				Feb-14				Mar-14				Apr-14			
					Abundance				Abundance				Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																												
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C									++	2	3	3	++	2	3	3	++		2	2	++	1	3	2	+		1	1
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C									++			5	++			5	++			3	++			6	+	3		4
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C																												
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+				+	2	1	1	+	1	2	2	+		2	3	+	1	2	2	+	1	1	2	+		1	1
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	1		1	+		1	1	+	1	1	2	+		1	1	+		2		+	1	2	1	+	1	1	2
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC	C					+			2																				
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C	+								++		3	2	+		1		+											
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																												
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C					+																+							
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C																												
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺鴒	WV&PM	C																												
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+	1			+				+				+				+				+							
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺鴒	R, LC	U	+		1		+				+				+				+				+							
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C									+																			
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺鴒	R	C	+																											
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	+	1	2		+	1	1	2	++	2	4	3	++	3	2	4	++	2	6	5	++	3	4	4	++	2	3	4
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	++		5		++				++				++				++		7		++		4		++		6	
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺鴒	PM,WV	C																												
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	++	2	1	1	+	2		1	++	2	4	2	+		2	1	+		1	2	+	1	2	1	+		1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+				+				+		1		+				+				+							
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1	1		+				+				+	1	1		+	1	3	2	+	1	2	1	+	1		1
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																												
Number of birds					0	15	22	11		10	10	14		13	30	34		11	26	32		10	34	37		16	38	31		12	22	28
No. of species					20	9	8	7	22	6	8	9	31	9	14	16	32	11	16	17	33	11	18	18	34	13	19	17	32	9	11	12

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

LC : Local Concern Fellowes *et al* (2002)

PRC: Potential Regional concern Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring					
					May-14				Jun-14				Jul-14				Aug-14				Sep-14					
					Abundance				Abundance				Abundance				Abundance				Abundance					
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																						
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+									+		1	1		+	1	2	1				
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+			6	++	4	2	3	++				4	++	2	2	5			3		
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C	+																					
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+	1	2	1	+		2	2		+	1	2	1		+	1	2	2	+	2	3	2
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	1	1	1	+	1	2	2		+	1	1	1		+	1	1	1	+	1	1	2
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC																							
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C																						
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																						
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C	+				+																	
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C																						
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅腦藍尾鶺鴒	WV&PM	C																						
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+				+					+		1			+		1		+		1	
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺鴒	R, LC	U	+																		+			
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																						
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺鴒	R	C																						
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	4	3	++	2	3	1	++	3	4	4		++	2	3	3	++	3	3	5	
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	++		8							+		2			+		3		+		6	
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺鴒	PM,WV	C																						
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+		2	1	+		1			+	1	2	2		+	2	2	1	+	2	3	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+				+					+					+				+			
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1	1	1	+		1	1		+	1	1	1		+	1	1		+	1	2	1
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																						
Number of birds						15	26	24		15	18	17		16	24	26			18	28	28		23	35	28	
No. of species					27	9	10	10	23	8	11	10	20	12	14	14	20	13	17	15	23	17	17	15		

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
					Oct-14				Nov-14				Dec-14				Jan-15				Feb-15			
					Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																				
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C																				
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																				
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C					+				+				+				+			
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	+	2		1	+		2		+	2			+		2	2	+			
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C																				
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																				
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U																				
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U													+				+			
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C																				
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																				
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	+			2	+	1		3	+		2	2	+	1		3	+	1		2
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶺	R,RC	C	++	2	2		++	1			+		1		++	1	2	2	++	1	1	
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U																				
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U																				
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U																				
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C	+				+															
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C	+				+															
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C																				
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+		1	1	+		1		++	1	1		++	2	1	1	+	1	1	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	++	3	1	4	++	2	1	3	+++	2	3	2	+++	3	2	4	+++	2	2	4
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U													+				+			
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	+		2	4	+	3	2		+	1			+			3	+			2
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U																				
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C									++				++				++			
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+	1	1		+	1		1	++				++	1	2	1	++		1	
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	+	2		3	+			2	+++		5	3	+++	2	4	3	+++		3	2
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C																				
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+		1		+				+				+		1		+		1	
Great Egret	<i>Ardea alba</i>	大白鶺	R,RC	C													+				+			
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C																				
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C																				

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
					Oct-14				Nov-14				Dec-14				Jan-15				Feb-15			
					Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																				
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+		1	1	+			1	+		1		+		1	2	+	1	2	1
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+				+				+		3		+		4		+			3
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C									+											
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+	1	2	1	+	1	2	2	+	2	1	1	+	1	2	1	+	2	1	1
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	1		1	+	1	1	1	+		1		+	1	1	2	+	1		1
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC																					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺	WV	C																				
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																				
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C																				
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C																				
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅腦藍尾鶺	WV&PM	C																				
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+		1		+	1			+				+				+		1	
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺	R, LC	U	+				+				+				+				+			
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																	+			
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺	R	C																				
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	4	2	3	++	3	3	4	+	1	2	2	+	2	3	4	++	2	3	3
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	+		7		+	6	5		+	5			+		5		+			
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺	PM,WV	C																				
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	2	2	1	+	1	2	2	++	1	2	2	++	1	2	2	++	1	2	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+				+								+				+		1	
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1	1	1	+		1	1												
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺	WV, PM, LC	U																				
Number of birds						19	24	23		21	20	20		15	19	15		15	16	17		12	19	21
No. of species					23	17	17	15	23	19	17	16	21	9	11	7	24	10	13	14	25	9	12	10

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hk biodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

LC : Local Concern Fellowes *et al* (2002)

PRC: Potential Regional concern Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring					
					Mar-15				Apr-15				May-15				Jun-15				Jul-15					
					Abundance				Abundance				Abundance				Abundance				Abundance					
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																						
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	+	1	2		++		2	2		++	2		2		++	2		2	2			
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C													+			2						
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C	+		1		+		1															
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	2	++		2	2	2	++	2	2	2	++	1		2	++	2	2		
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C					+		1			+		2		+			2					
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																						
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U																						
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U																						
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C																						
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																						
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	2		3	++	1		2		++	2		2		++	3	1	2	++	2	2	2
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	+	1	1		+	1				+	1				+					1		
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U																						
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U																						
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U																						
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C													+	1								
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C	+		1		+		1			+		1	1									
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C																	+			1		
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+	1	1		+	1		1		+		1	1		+	2	2					
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	3	1	4	+++	3	2	3	+++	4	3	3	+++	5	4	4	+++	5	5	7		
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U					+		1															
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++		2	3	++		1	3	++		2	3	++	3	2	3	++	2	2	1		
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U	+								+													
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																						
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+		1		+		1			+		1		+		1	1					
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	2		2	++	2	2	2	++	3	2	2	++	2	3	3	++	3	3	3		
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C					+			2														
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+		1		+		1			+		1										
Great Egret	<i>Ardea alba</i>	大白鶇	R,RC	C																						
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C																						
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C																						

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
					Mar-15				Apr-15				May-15				Jun-15				Jul-15			
					Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C					+			1												
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+		1	1	+		1	1	+		1	1	+		1		+			1
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+			4	+			3	+		2	3	+		3	3	+		3	3
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C	+				+				+				+							
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+	1	1	2	+		1	1	+	1		1	+	1		1	+			1
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	++	1	2	1	+	1	2	1	+	2	2	1	+	1	2	2	+	2		2
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC																					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺	WV	C																				
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																				
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C	+				+															
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C																				
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺	WV&PM	C																				
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+		1		+			1	+			1	+		1	+	1			
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺	R, LC	U	+				+				+				+				+		1	
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C	+																			
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺	R	C													+			1				
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	3	1	++	3	1	2	++	2	2	2	++	2	2	2	++	3	3	4
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C																				
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺	PM,WV	C																				
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+		1	2	+		1	1	+		1	1	+		1	1	+		1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+		1		+		1		+		1		+		1					
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+	1	1		+		1		+		1		+		1	1	+		1	1
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺	WV, PM, LC	U																				
Number of birds						12	19	21		12	21	29		20	24	25		24	24	34		21	24	33
No. of species					26	9	12	10	28	8	18	18	24	11	15	14	25	11	13	18	19	10	12	15

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
					Aug-15				Sep-15				Oct-15				Nov-15				Dec-15				
					Abundance				Abundance				Abundance				Abundance				Abundance				
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																	+			1	
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	++	4			++			4													
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																	++				7
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C																					
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		3		++		2	2	++		3		+				1	+			
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C	+		1		+		1		+		1										
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																					
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U																					
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U																		+			1
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C																					
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																					
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++		2	2	+		3		++	3	3		++		3	2	++		3	2	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	+	1			+		1		+		1		+		1	+				1	
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U																					
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U																					
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U	+		1																		
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C																	+		1		
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C																					
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C	+		1																		
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	++	2	2		++	1	2		++				++		1	1	+				
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	3	3	8	+++	5	9	5	+++	5	5	7	+++	7	3	4	+++	7	6	7	
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U									+												
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++			3	++		2		+		3		+		3						
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U	+		1		+		1		+				+		1						
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																					
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+	1	1		+	1	1		+	1	1		+	1	1		+		1	1	
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++		2	4	++		3	3	+++		6	3	++		3	4	++		6	5	
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C	+		2		+		1														
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+		1																		
Great Egret	<i>Ardea alba</i>	大白鶇	R,RC	C					+	1															
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C																					
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C					+		1		+		1		+		1	+				1	

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
					Aug-15				Sep-15				Oct-15				Nov-15				Dec-15				
					Abundance				Abundance				Abundance				Abundance				Abundance				
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																					
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+			1	+			1	+	1											
Japanese White Eye	<i>Zosterops japonica</i> (simplex)	暗綠繡眼鳥	R	C	+	3	3		+	3	3														
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C																					
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+			1					+												
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		1	2	+			2	2	+	1	2									
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC	C																					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C																					
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U	+		1		+			3													
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C																					
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C																					
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺鴒	WV&PM	C																					
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+	1			+			1	+	1											
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺鴒	R, LC	U	+		1		+			1													
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																					
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺鴒	R	C																					
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	2	3	2	++	3	3	4	++	3	5	5	++								
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C					+			3	+		4										
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺鴒	PM,WV	C																					
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+		1		+			1	+												
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C									+		1										
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+		1		+			1													
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																					
Number of birds						17	31	23		14	37	29		15	35	21									
No. of species						25	8	19	8	24	6	16	11	21	7	12	7	20	4	11	13	21	4	8	12

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbbiodiversity.net)

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Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
					Jan-16				Feb-16				Mar-16				Apr-16				May-16				
					Abundance				Abundance				Abundance				Abundance				Abundance				
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																					
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+			1	+	1			+	1			+	1		1	+	1		1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++		7	6	++	3		4	++		4	2	++	3	3		++	2		2	
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C													+				+				
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+	1			+	1			+	1			+		1		+			1	
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		2	2	+		2	2	+		1	1	+		2		+	1	1	1	
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC	C																					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鷓	WV	C					++					++											
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																					
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C																					
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C	+				+				+				+				+				
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺	WV&PM	C					+		1														
Rufous-backed Shrike	<i>Lanius schach</i>	棕背白鶺	R	C	+		1		+		1						+								
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺	R, LC	U	+				+				+												
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																					
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺	R	C																					
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	1	4	++	4	2	5	++	3	3	4	++	4	4	2	++	4		4	
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C																					
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺	PM,WV	C	+				+				+												
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	1		1	+	1			+	1			+	1	1	1	+			1	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C													+	1							
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+				+				+				+				+				
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺	WV, PM, LC	U																					
Number of birds						14	42	32		22	34	28		19	44	12		22	36	18		21	31	24	
No. of species						27	7	13	11	27	9	9	9	25	9	9	6	22	8	8	10	19	7	7	11

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

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Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring							
					Jun-16				Jul-16				Aug-16				Sep-16				Oct-16				Nov-16			
					Abundance				Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																								
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C					++	5											+							
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																								
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C													+											
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	2	++			3	++		2	1	++	2			++		3		++		2	2
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C																								
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																								
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U																								
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U																								
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C	++		5																					
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																								
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	2	2	4	++	3	3	3	++	2	1	4	++	3	4		++	2	3	2	++	3		2
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	+		1		+			1	+			1	+			1	+			1	+			1
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U																								
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U																					+			
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U																								
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C									+				+				+							
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C	+				+																			
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C																								
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+		1	1	+		1	1	+		1	1	+	1	1		+	1	1		+	1	1	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	5	10	8	+++	7	8	2	+++	9	8	6	+++	9	8	6	+++	7	6	2	+++	8	5	2
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U																								
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	+		2		+		3	3	+	2		2	++	3	2		++	3		2	++		2	2
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U									+															
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																								
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+				+				+				+				+				+			
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	3	3	3	++	5	2	3	++	3	3		++	3	3	2	++	4	4	3	++	3	3	4
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C																								
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C													+				+				+			
Great Egret	<i>Ardea alba</i>	大白鶇	R,RC	C																								
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C																								
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C	+		1		+		1		+		1										+		1	

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring							
					Jun-16				Jul-16				Aug-16				Sep-16				Oct-16				Nov-16			
					Abundance				Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																								
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+	1	1	+	1	1	+	2	1	+	1	1	+	1	1	+	1	1	+	1	1	1	1	1
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++		2	++		3		++		4			++		3	3	++			2	++		2	2
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C	+																							
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+		1	+			1	+			1	+			1	+			1	+			1	1
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		2	1	+	2	2		+	2	2		+		2	1	+		1	1	+	1	1	1
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC																									
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C																								
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																+								
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C																								
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C	+				+				+				+				+				+			
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺鴒	WV&PM	C																								
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C					+				+				+				+				+			
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺鴒	R, LC	U	+				+				+				+				+				+			
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																								
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺鴒	R	C																								
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	2	3	++	4	2	5	++	3	3	4	++	4	2	4	++	3	3	4	++	4	2	2
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C																								
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺鴒	PM,WV	C																					+			
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+		1	1	+		1	1	+	1	1		+	1	1		+	1	1		+	1	1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C									+				+				+				+			
Yellow Bellied Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+				+				+				+				+				+			
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																								
Number of birds						14	28	31		26	26	25		26	26	21		26	27	19		21	23	19		21	21	21
No. of species					21	5	9	14	21	6	10	12	23	9	10	9	21	8	10	8	21	7	9	10	21	7	11	12

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

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(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
					Dec-16				Jan-17				Feb-17				Mar-17				Apr-17				May-17			
					Abundance				Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																								
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+		1	1	+		1	1	+	1	1		+		1	1	+				+		1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++		3		++		2		++		3		+		2									
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C													+				+							
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+			1	+	1			+		1		+		1		+		1		+		1	
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		2	2	+		2	2	+	1	1	1	+	2		2	+	1	1	2	+		1	1
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC	C																								
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C																								
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																								
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C																								
Plain Prinia	<i>Prinia inornata</i>	純色鶺鴒	R	C	+				+				+				+				+				+			
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺鴒	WV&PM	C																								
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+				+				+				+				+							
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺鴒	R, LC	U									+								+				+			
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																								
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺鴒	R	C																								
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	5	3	3	++	2	2	3	++	3		2	++	5	4		++		4	2	++	2	3	2
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C																								
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺鴒	PM,WV	C																								
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	2	1		+	2	1		+	1	1		+	1	1		+		1	1	+		1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C													+				+		4		+		2	
Yellow Bellied Prinia	<i>Prinia flaviventris</i>	黃腹鶺鴒	R	C	+				+				+				+				+				+			
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U					+																			
Number of birds						25	28	23		15	28	18		20	29	20		17	32	23		9	34	21		10	26	11
No. of species					19	6	10	9	23	6	12	8	22	8	11	8	22	5	12	7	23	3	12	8	22	4	13	8

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hk biodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

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CR: Rare in China Red Data Book Status

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Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
					Jun-17				Jul-17				Aug-17				Sep-17				Oct-17			
					Abundance				Abundance				Abundance				Abundance				Abundance			
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																				
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	++		5		++		8													
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C	+																			
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C																				
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		6		++		4	2	++		3	3	++		2	2	++		3	
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C									++			3	++			4				
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C																				
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U																		+		
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U																				
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C																				
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																				
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	3	2	2	++	2	4	3	++	3	2	++	2	3	1	++	3	3	2	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	+		1		+		1	1	+	1	1	1	+		1		+	1	1	
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U																				
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U																				
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U																				
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C																				
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C	+				+				+											
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C																				
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+		1	1	+	1	1	1	+	1	1	1	+		1	1	+		1	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	8	3	3	+++	3	10	2	+++	5	8	5	+++	8	7	5	+++	5	8	2
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U																				
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	+			2	+				+		2		+		2	1	+		2	
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U	+				+				+											
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																				
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C																				
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	5	4	3	++	3	6	2	++	3	5	4	++	4	2	5	++	3	3	4
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C																				
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+				+															
Great Egret	<i>Ardea alba</i>	大白鶇	R,RC	C																				
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C																				
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C													+				+			

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
					Jun-17				Jul-17				Aug-17				Sep-17				Oct-17				
					Abundance				Abundance				Abundance				Abundance				Abundance				
					C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C	T1	T2	T3	C
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																					
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+		1		+				+				+				+				
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C					+				+		3		+		2	3	+		3		
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C																					
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+		1	1	+	1			+	1	1		+	1	1		+	1	1		
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		2	1	+	1	2	1	+	2		1	+	1	1	1	+	2		2	
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC	C	+		2	1																	
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺	WV	C																					
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																	+		1		
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C																					
Plain Prinia	<i>Prinia inornata</i>	純色鷓鴣	R	C	+				+				+		1		+		1		+		1		
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅脇藍尾鶺	WV&PM	C																					
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C					+				+		2										
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺	R, LC	U	+				+																
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C																					
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺	R	C																					
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	5	2	1	++	6	2	3	++	2	5	3	++	4	2	3	++	3	5	2	
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C																					
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺	PM,WV	C																					
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+		1	1	+		1	1	+		1	1	+	2	2		+	2	2		
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C																					
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷓鴣	R	C	+				+				+												
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺	WV, PM, LC	U																					
Number of birds						21	31	16		17	39	16		18	34	23		22	26	27		20	33	14	
No. of species						21	4	13	10	21	7	10	9	19	8	12	10	16	7	12	11	17	8	12	7

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hk biodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

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Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring			
					Nov-17			
					Abundance			
					C	T1	T2	T3
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U				
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C				
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C				
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C				
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	2
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C				
Blue Whistling Thrush	<i>Myophonus caeruleus</i>	紫嘯鶇	R	C				
Bull-headed Shrike	<i>Lanius bucephalus</i>	牛頭伯勞	RPM	U				
Buzzard (Common Buzzard)	<i>Buteo buteo</i>	普通鵟	WV, Cap 586	U				
Chestnut Bulbul	<i>Hemixos castanonotus</i>	栗背短腳鶇	R,WV	C				
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C				
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	4	2	3
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶯	R,RC	C	+		1	1
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R, Cap 586	U				
Chinese Sparrowhawk	<i>Accipiter soloensis</i>	赤腹鷹	PM, Cap.586	U				
Common Emerald Dove	<i>Chalcophaps indica</i>	綠翅金鳩	R,VU	U				
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C				
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C				
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C				
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+		2	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	8	5	5
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.586	U				
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++		5	2
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U				
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C				
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C				
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	4	2	3
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C				
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C				
Great Egret	<i>Ardea alba</i>	大白鶯	R,RC	C				
Great Tit	<i>Parus major(commixtus)</i>	大山雀	R	C				
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C				

Table 4.3 Avifauna recorded along survey transects and at three selected point count locations at She Shan River.

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Common Name	Species name	Chinese name	Status	Commonness	Post construction monitoring			
					Nov-17			
					Abundance			
C	T1	T2	T3					
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C				
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+		1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+		4	
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鵒	SV	C				
Little Egret	<i>Egretta garzetta</i>	小白鷺	R,RC	C	+	1	1	
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	2	1	1
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C				
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U				
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	C				
Plain Prinia	<i>Prinia inornata</i>	純色鶺鴒	R	C	+			1
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	紅腦藍尾鶺鴒	WV&PM	C				
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C	+			
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鶺鴒	R, LC	U				
Scarlet Minivet	<i>Pericrocotus speciosus</i>	赤紅山椒鳥	R	C				
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺鴒	R	C				
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	4	2	2
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C				
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	黑喉石鶺鴒	PM,WV	C				
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	WV	C	+	1	1	1
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C				
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶺鴒	R	C				
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U				
Number of birds						24	29	22
No. of species					15	7	13	11

Note: R – Resident; WV – Winter visitor; PM – Passage migrant; C – Common; U – Uncommon

SpM – Spring migrant; Sv - Summer visitor ; RPM - Rare passage migrant

C – transect count; P1 – Point count location 1; P3 – Point count location 3

+, occurred; ++, common; +++, abundant/dominant species in the the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiodiversity.net)

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PRC: Potential Regional concern Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.4. Odonate species recorded at the She Shan River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring							Post construction monitoring								
					Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
<i>Agriocnemis pygmalis</i>	Wandering Midget	黃尾小蠅	NP	VC																
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC																
<i>Burmagomphus vermicularis</i>	Dog-legged Clubtail	聯紋細春蜓	P, LC	C																
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蠅	NP	VC						+	+		+	+	+	+				
<i>Copera ciliata</i>	Black-knees Featherlegs	白狹扇蠅	NP	VC																
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蠅	NP	VC	+					+	+		+	+	+	+				
<i>Crocothemis servilla servilla</i>	Crimson Darter	紅蜻	NP	VC	+	+	+	+		+	+		+	+	+	+	+	+	+	
<i>Diplacodes trivialis</i>	Blue Percher	紋藍小蜻	NP	VC																
<i>Icetinogomphus pertinax</i>	Common Flangetail	霸王葉春蜓	NP	C		+							+	+	+	+	+	+		
<i>Ischnura senegalensis</i>	Common Bluetail	褐斑異痣蠅	NP	VC																
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	NP	C																
<i>Neurobasis chinensis chinensis</i>	Chinese Greenwing	華艷色蠅	NP	VC	+	+				+	+				+	+	+	+		
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC						+	+		+	+	+	+				
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC											+	+	+	+		+
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC																
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC																
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC	+					+			+	+						
<i>Orthetrum Sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	C	+													+	+	
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+							+	+	+	+	+	+	+	+
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蠅	NP	VC						+			+	+	+	+				
<i>Pseudagrion pruinosum fraseri</i>	Ferruginous-faced Sprite	赤斑蠅	NP	C																
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蠅	NP	UC	+	+														
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑鼻蠅	NP	VC	+	+							+	+	+	+	+	+	+	
<i>Rhyothemis variegata arria</i>	Variiegated Flutterer	斑麗翅蜻	NP	C									+	+	+	+	+	+	+	
<i>Trithemis aurora</i>	Crimson Dropwing	曉褐蜻	NP	VC	+	+	+	+	+				+	+	+	+	+	+	+	+
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC	+	+							+	+	+	+	+	+	+	+
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩紅蜻	P,PG	VC																
No of Species					11	7	2	2	1	5	10	12	13	13	13	12	9	7	2	3

Note: NP – Not protected in Hong Kong ; P - Protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundance in the study area

Commonness and status were decided according to AFCD biodiversity website

LC- Local Concern - Fellowes *et al* (2002)PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.4. Odonate species recorded at the She Shan River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring								Post construction monitoring											
					Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17		
<i>Agriocnemis pygmalis</i>	Wandering Midget	黃尾小蠅	NP	VC																				
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC																				
<i>Burmagomphus vermicularis</i>	Dog-legged Clubtail	聯紋蠅春蜓	P, LC	C					+															
<i>Ceriatrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蠅	NP	VC			+	+	+	+	+	+	+	+						+	+	+	+	
<i>Copera ciliata</i>	Black-knees Featherlegs	白狹扇蠅	NP	VC			+	+	+	+	+	+										+	+	
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蠅	NP	VC				+	+	+	+	+									+	+	+	
<i>Crocotthemis servilla servilla</i>	Crimson Darter	紅蜻	NP	VC			+	+	+	+	+	+	+	+									+	
<i>Diplacodes trivialis</i>	Blue Percher	紋藍小蜻	NP	VC																				
<i>Icetinogomphus pertinax</i>	Common Flangetail	霸王葉春蜓	NP	C				+	+	+	+	+										+	+	
<i>Ischnura senegalensis</i>	Common Bluetail	褐斑異痣蠅	NP	VC							+	+												
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	NP	C																				
<i>Neurobasis chinensis chinensis</i>	Chinese Greenwing	華艷色蠅	NP	VC			+	+	+	+	+	+	+	+							+	+	+	+
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC			+	+	+	+	+	+	+	+							+	+	+	+
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC			+	+	+	+	+	+	+	+							+	+	+	+
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC																				
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC			+	+	+	+	+	+	+	+							+	+	+	+
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC																				
<i>Orthetrum Sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	C																				
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蠅	NP	VC																				
<i>Pseudagrion pruinosum fraseri</i>	Ferruginous-faced Sprite	赤斑蠅	NP	C																				
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蠅	NP	UC																				
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑鼻蠅	NP	VC				+	+	+	+	+	+	+							+	+	+	+
<i>Rhyothemis variegata arria</i>	Variiegated Flutterer	斑麗翅蜻	NP	C					+	+	+	+	+	+								+	+	+
<i>Trithemis aurora</i>	Crimson Dropwing	曉褐蜻	NP	VC		+	+	+	+	+	+	+	+	+							+	+	+	+
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩紅蜻	P,PG	VC																				
No of Species					1	3	10	12	15	14	14	13	11	8	2	2	3	6	9	11	13	14		

Note: NP – Not protected in Hong Kong ; P - Protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundance in the study area

Commonness and status were decided according to AFCD biodiversity website

LC- Local Concern - Fellowes *et al* (2002)PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.4. Odonate species recorded at the She Shan River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring			
					Aug-17	Sep-17	Oct-17	Nov-17
<i>Agriocnemis pygmalis</i>	Wandering Midget	黃尾小蠅	NP	VC				
<i>Brachythemis contaminata</i>	Asian Amberwing	黃翅蜻	NP	VC				
<i>Burmagomphus vermicularis</i>	Dog-legged Clubtail	聯紋蠅春蜓	P, LC	C				
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蠅	NP	VC	+	+	+	
<i>Copera ciliata</i>	Black-knees Featherlegs	白狹扇蠅	NP	VC	+			
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蠅	NP	VC	+			
<i>Crocothemis servilla servilla</i>	Crimson Darter	紅蜻	NP	VC	+	+		
<i>Diplacodes trivialis</i>	Blue Percher	紋藍小蜻	NP	VC				
<i>Ictinogomphus pertinax</i>	Common Flangetail	霸王葉春蜓	NP	C	+	+	+	
<i>Ischnura senegalensis</i>	Common Bluetail	褐斑異痣蠅	NP	VC				
<i>Nannophya pygmaea</i>	Scarlet Dwarf	侏紅小蜻	NP	C				
<i>Neurobasis chinensis chinensis</i>	Chinese Greenwing	華艷色蠅	NP	VC	+	+	+	+
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC	+	+	+	
<i>Orthetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC	+	+	+	+
<i>Orthetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC				
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC	+	+	+	+
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC				
<i>Orthetrum Sabina sabina</i>	Green Skimmer	狹腹灰蜻	NP	C	+	+	+	
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蠅	NP	VC				
<i>Pseudagrion pruinosum fraseri</i>	Ferruginous-faced Sprite	赤斑蠅	NP	C				
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蠅	NP	UC				
<i>Rhinocypha perforata perforata</i>	Common Blue Jewel	三斑鼻蠅	NP	VC	+	+	+	+
<i>Rhyothemis variegata arria</i>	Variiegated Flutterer	斑麗翅蜻	NP	C	+	+	+	
<i>Trithemis aurora</i>	Crimson Dropwing	曉褐蜻	NP	VC	+	+	+	+
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC	+	+	+	+
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩紅蜻	P,PG	VC				
No of Species					15	13	12	7

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“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundance in the study area

Commonness and status were decided according to AFCD biodiversity website

LC- Local Concern - Fellowes *et al* (2002)

PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location	Baseline monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring									
			Status	Common -ness	Jul-08		Aug-08		Jan-09				Jul-09				Jan-10				Jul-10				Jan-11			
					Upper stream	Lower stream	Upper stream	Lower stream	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3
Mollusks																												
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																									
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC																									
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	+	++						+	+	+	+	+	+	+	+	+	+	+	+	++	++	+	
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	+	++	+		+	+	+		+	+	++	+	+	++	++	+	+	+	+	+++	+++	+++	
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+			+	+		+	+		+	+	+	+		+	+	+	+	+	+	
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	+	++	+			+	+		+	+		++	+	+	++	++	+	+++	++	++	++		
Insects																												
<i>Baetis sp.</i>		NP	VC	+	+	+	+	+		+	+	+		+	+		+	+	+		+	+	+	+	+	+	+	
<i>Caenis sp.</i>	--	NP	VC	+	+	+	+	+			+	+		+	+		+	+	+		+	+	+	+	+	+	+	
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	++	++	+		+	+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	
<i>Euphaea sp.</i>		NP	VC																									
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+	+	+		+	+	+		+	+		+	+	+		+	+	+	+	+	+	+	
<i>Odonate larvae</i>		NP	VC																									
<i>Orhethrum spp.</i>	--	NP	VC								+	+		+							+	+			+	+	+	
<i>Pseudagrion spp.</i>	--	NP	UC											+														
<i>Pseudocloeon sp.</i>	--	NP	VC	+	+	+	+					+																
<i>Serratella sp.</i>		NP	VC	+	+	+	+								+													
Crustaceans																												
<i>Cardina cantanensis</i>	廣東米蝦	NP	VC																									
<i>Cryptopotamon anacolutum</i>	鯉刺溪蟹	NP	VC																									
No of Species				12	12	12	12	9	0	7	11	9	0	0	12	10	0	11	0	10	8	14	4	10	9	9	8	

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“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundance in the study area

- Reference point was the sampling location outside the works area used to compare the with the data within works area.

Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Post construction monitoring					
				Jul-11				Jan-12				Jul-12				Jul-13				Dec-13				Jan-14					
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3		
Mollusks																													
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																										
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+	+	+	+					+	+	+													
<i>Brotia hainanensis</i>	--	NP	VC	+	+																								
<i>Corbicula fluminea</i>	河蜆	NP	VC																										
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	++	+++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+++	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Insects																													
<i>Baetis sp.</i>	--	NP	VC	+	+	+		+						+	+														
<i>Caenis sp.</i>	--	NP	VC																										
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+													
<i>Euphaea sp.</i>	--	NP	VC																										
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+																					
<i>Odonate larvae</i>	--	NP	VC																										
<i>Orhetrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+				+	+	+	+												
<i>Pseudagrion spp.</i>	--	NP	UC																										
<i>Pseudocloeon sp.</i>	--	NP	VC																										
<i>Serratella sp.</i>	--	NP	VC																										
Crustaceans																													
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC																										
<i>Cryptopotamon anacolutum</i>	鯉刺溪蟹	NP	VC																										
No of Species				10	10	9	7	11	7	6	5	9	8	7	5	11	8	7	6	11	8	8	7	11	8	8	7		

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“++” – Species common in the study area

“+++” – Species abundance in the study area

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring							
				Feb-14				Mar-14				Apr-14				May-14				Jun-14				Jul-14							
				Status	Common -ness	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3		
Mollusks																															
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																												
<i>Biomphalaria sp.</i>	--	NP	VC	+				+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Corbicula fluminea</i>	河蜆	NP	VC	+				+				+				+				+				+				+			
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+
Insects																															
<i>Baetis sp.</i>		NP	VC	+	+			+	+	+		+		+		+		+		+		+		+		+		+		+	
<i>Caenis sp.</i>	--	NP	VC																												
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>		NP	VC																												
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Odonate larvae</i>		NP	VC																												
<i>Orhetrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudocloeon sp.</i>	--	NP	VC					+				+																			
<i>Serratella sp.</i>		NP	VC	+				+	+	+		+	+	+										+	+						
Crustaceans																															
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC																												
<i>Cryptopotamon anacolutum</i>	鯉刺溪蟹	NP	VC																												
No of Species				13	10	9	8	14	12	12	9	14	12	13	9	11	11	13	8	10	12	13	8	10	11	14	7				

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“++” – Species common in the study area

“+++” – Species abundance in the study area

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
		Status	Common -ness	Aug-14				Sep-14				Oct-14				Nov-14				Dec-14				Jan-15				
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
Mollusks																												
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																									
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+				+					+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+			+	+			+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC			+	+			+	+			+				+					+					
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	++	+	+	+	++	+	+	+	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Insects																												
<i>Baetis sp.</i>	--	NP	VC		+	+		+	+	+		+	+	+		+	+	+				+					+	
<i>Caenis sp.</i>	--	NP	VC																									
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>	--	NP	VC			+				+								+					+				+	
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+			+		+		+	+	+	
<i>Odonate larvae</i>	--	NP	VC																									
<i>Orhethrum spp.</i>	--	NP	VC	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudocloeon sp.</i>	--	NP	VC			+		+	+	+		+	+	+		+	+	+			+		+		+		+	
<i>Serratella sp.</i>	--	NP	VC		+	+																					+	+
Crustaceans																												
<i>Cardina cantanensis</i>	廣東米蝦	NP	VC																									
<i>Cryptopotamon anacoluton</i>	鯉刺溪蟹	NP	VC																									
No of Species				10	12	15	6	12	12	14	8	12	12	13	7	12	11	13	7	10	8	13	6	10	11	14	6	

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“++” – Species common in the study area

“+++” – Species abundance in the study area

- Reference point was the sampling location outside the works area used to compare the with the data within works area.

Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring					
				Feb-15				Mar-15				Apr-15				May-15				Jun-15				Jul-15					
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3		
Mollusks																													
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																										
<i>Biomphalaria sp.</i>	--	NP	VC			+			+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		
<i>Brotia hainanensis</i>	--	NP	VC		+	+			+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		
<i>Corbicula fluminea</i>	河蜆	NP	VC				+				+				+				+										
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++	++	++	++	++	++
<i>Radix plicatulus</i>	--	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC		+	+	+	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	++
Insects																													
<i>Baetis sp.</i>	--	NP	VC				+						+						+										+
<i>Caenis sp.</i>	--	NP	VC																										
<i>Chironomus sp.</i>	蠓幼虫	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>	--	NP	VC						+	+			+	+	+			+	+	+									
<i>Indobaetis sp.</i>	--	NP	VC			+	+		+	+	+				+	+	+		+	+	+								
<i>Odonate larvae</i>	--	NP	VC										+																
<i>Orhetrum spp.</i>	--	NP	VC		+	+	+	+	+	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC			+	+		+	+			+	+	+			+	+	+									
<i>Pseudocloeon sp.</i>	--	NP	VC										+	+	+	+													
<i>Serratella sp.</i>	--	NP	VC			+				+				+	+														
Crustaceans																													
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC																										+
<i>Cryptopotamon anacolutum</i>	鯉刺溪蟹	NP	VC																										
No of Species					7	10	12	6	9	12	13	6	9	12	13	6	9	12	13	6	9	12	13	6	9	12	14	6	

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring							
		Status	Common -ness	Aug-15				Sep-15				Oct-15				Nov-15				Dec-15				Jan-16							
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3				
Mollusks																															
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																												
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC			+				+				+				+				+				+				+	
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	+	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	++	++	++	++	++	++	++	++	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	+	++	+	+	+	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++
Insects																															
<i>Baetis sp.</i>	--	NP	VC			+				+				+				+				+				+				+	
<i>Caenis sp.</i>	--	NP	VC																												
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>	--	NP	VC		+	+			+	+			+	+			+	+			+	+			+	+			+	+	
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Odonate larvae</i>	--	NP	VC			+				+				+				+				+				+				+	
<i>Orhetrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC		+	+			+	+			+	+			+	+			+	+			+	+			+	+	
<i>Pseudocloeon sp.</i>	--	NP	VC																												
<i>Serratella sp.</i>	--	NP	VC		+				+				+				+				+				+				+		
Crustaceans																															
<i>Cardina cantanensis</i>	廣東米蝦	NP	VC			+				+				+				+				+				+				+	
<i>Cryptopotamon anacolutum</i>	鯉刺溪蟹	NP	VC							+				+				+				+				+				+	
No of Species				9	12	15	6	9	13	15	6	9	13	15	6	9	13	15	6	9	14	15	6	9	14	15	6	9	14	15	6

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location	Status	Common -ness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring														
					Feb-16				Mar-16				Apr-16				May-16				Jun-16				Jul-16														
					Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3							
Mollusks																																							
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																																				
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Corbicula fluminea</i>	河蚌	NP	VC			+				+				+					+																				
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++
Insects																																							
<i>Baetis sp.</i>	--	NP	VC			+				+			+					+																					
<i>Caenis sp.</i>	--	NP	VC																																				
<i>Chironomus sp.</i>	孿幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>	--	NP	VC			+				+			+					+																					
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Odonate larvae</i>	--	NP	VC			+				+			+					+																					
<i>Orhethrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC			+				+			+					+																					
<i>Pseudocloeon sp.</i>	--	NP	VC																																				
<i>Serratella sp.</i>	--	NP	VC			+				+			+					+																					
Crustaceans																																							
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC		+	+			+	+			+	+			+	+			+	+			+	+			+	+			+	+			+	+	
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC			+				+			+					+																					
No of Species					9	14	15	6	9	14	15	6	9	14	15	6	9	14	15	6	9	14	16	6	9	14	16	6	9	14	16	6	9	14	16	6	9	14	16

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“++” – Species common in the study area

“+++” – Species abundance in the study area

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
				Aug-16				Sep-16				Oct-16				Nov-16			
				Status	Common -ness	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1
Mollusks																			
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC			+				+				+				+	
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++
Insects																			
<i>Baetis sp.</i>		NP	VC			+				+				+				+	
<i>Caenis sp.</i>	--	NP	VC																+
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>		NP	VC		+	+			+	+			+	+			+	+	
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Odonate larvae</i>		NP	VC		+	+			+	+			+	+			+	+	
<i>Orhethrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC		+	+			+	+			+	+			+	+	
<i>Pseudocloeon sp.</i>	--	NP	VC																
<i>Serratella sp.</i>		NP	VC		+				+				+				+		
Crustaceans																			
<i>Cardina cantanensis</i>	廣東米蝦	NP	VC		+	+			+	+			+	+			+	+	
<i>Cryptopotamon anacoluton</i>	鯉刺溪蟹	NP	VC			+				+				+				+	
No of Species				9	14	16	6	9	14	16	6	9	14	16	6	9	14	16	6

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
				Dec-16				Jan-17				Feb-17				Mar-17				Apr-17			
				Status	Common -ness	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1
Mollusks																							
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																				
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC			+				+				+				+				+	
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++
Insects																							
<i>Baetis sp.</i>		NP	VC			+				+				+				+				+	
<i>Caenis sp.</i>	--	NP	VC															+					+
<i>Chironomus sp.</i>	孿幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>		NP	VC		+	+				+	+			+	+			+	+			+	+
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Odonate larvae</i>		NP	VC		+	+				+	+			+	+			+	+			+	+
<i>Orhetrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC		+	+				+	+			+	+			+	+			+	+
<i>Pseudocloeon sp.</i>	--	NP	VC																				
<i>Serratella sp.</i>		NP	VC		+					+				+				+				+	
Crustaceans																							
<i>Cardina cantanensis</i>	廣東米蝦	NP	VC		+	+			+	+			+	+			+	+			+	+	
<i>Cryptopotamon anacoluton</i>	鯉刺溪蟹	NP	VC			+				+				+				+				+	
No of Species				9	14	16	6	9	14	16	6	9	14	16	6	9	14	16	6	9	14	16	6

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
				May-17				Jun-17				Jul-17				Aug-17			
				Status	Common -ness	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1
Mollusks																			
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC																
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC			+				+				+				+	
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
Insects																			
<i>Baetis sp.</i>		NP	VC			+				+				+				+	
<i>Caenis sp.</i>	--	NP	VC																
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>		NP	VC		+	+			+	+			+	+			+	+	
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Odonate larvae</i>		NP	VC		+	+			+	+			+	+			+	+	
<i>Orhetrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC		+	+			+	+			+	+			+	+	
<i>Pseudocloeon sp.</i>	--	NP	VC																
<i>Serratella sp.</i>		NP	VC		+				+				+				+		
Crustaceans																			
<i>Caridina cantanensis</i>	廣東米蝦	NP	VC		+	+			+	+			+	+			+	+	
<i>Cryptopotamon anacolutum</i>	鯉刺溪蟹	NP	VC			+				+				+				+	
No of Species				9	14	16	6	9	14	16	6	9	14	16	6	9	14	16	6

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Table 4.5 Aquatic Macro invertebrates recorded at She Shan River.

(T1- Upper stream section, T2 - middle stream section, T3 - Lower stream section)

Species	Chinese name	Sampling location		Post construction monitoring				Post construction monitoring				Post construction monitoring			
				Sep-17				Oct-17				Nov-17			
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3
Mollusks															
<i>Anodonta woodiana</i>	背角無齒蚌	NP	VC												
<i>Biomphalaria sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+	
<i>Brotia hainanensis</i>	--	NP	VC	+	+	+		+	+	+		+	+	+	
<i>Corbicula fluminea</i>	河蜆	NP	VC			+				+				+	
<i>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+
<i>Pomacea canaliculata</i>	蘋果螺	NP	VC	+	++	++	+	+	++	++	+	+	++	++	+
<i>Radix plicatulus</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+	++	++	+	+	++	++	+	+	++	++
Insects															
<i>Baetis sp.</i>		NP	VC			+				+				+	
<i>Caenis sp.</i>	--	NP	VC												
<i>Chironomus sp.</i>	蠓幼虫	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+
<i>Euphaea sp.</i>		NP	VC		+	+			+	+			+	+	
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+	+	+		+	+	+	
<i>Odonate larvae</i>		NP	VC		+	+			+	+			+	+	
<i>Orthetrum spp.</i>	--	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+
<i>Pseudagrion spp.</i>	--	NP	UC		+	+			+	+			+	+	
<i>Pseudocloeon sp.</i>	--	NP	VC												
<i>Serratella sp.</i>		NP	VC		+				+				+		
Crustaceans															
<i>Cardina cantanensis</i>	廣東米蝦	NP	VC		+	+			+	+			+	+	
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC			+				+				+	
No of Species				9	14	16	6	9	14	16	6	9	14	16	6

Note: NP – Not protected in Hong Kong;

P - protected species in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundance in the study area

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species		Status	Commonness	Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring			
				Jan-11				Jul-11				Jan-12				Jul-12				Jul-13			
				Reference	T1	T2	T3	Referenc	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Referenc	T1	T2	T3
<i>Channa maculata</i>	斑鯉	NP	C																				
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC																				
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+		+		+	+	+	+	+		+	+	+	+	+	+	+	+
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鯪	NP	C													+				+			
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+				+				+				+	+	+	+	+	+	+	+
<i>Parazacco spilurus</i>	異鱔	NP, V	C	+				+				+				+	+	+	+	+	+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC	+	+			+				+	+			+				+	+	+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C																				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+			+				+	+			+	+	+		+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+			+				+	+			+	+	+		+	+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+			+				+	+			+	+	+	+	+	+	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C																				
<i>Zacco platypus</i>	寬鰭鱈	NP	C	+	+			+		+		+	+			+	+	+		+	+	+	
			2x2m fish number	22	16	3	0	6	4	2	3	8	2	4	0	4	2	2	0	5	3	4	2
			No of Species	8	6	1	0	8	0	2	1	8	6	1	0	9	7	7	3	9	8	8	3
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R																				

Note: NP – Not protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

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“Cap 170” - List in Wild Animals Protection Ordinance (Cap.170)

“NT” - Near Threatened in IUCN Red List Status

“PGC”-Potential Global Concern by Fellowes *et al* (2002)

“V” - Vulnerable - in Red China Data Book

“VU” - Vulnerable - in IUCN Red List

Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species	Status	Commonness	Impact monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
			Dec-13				Jan-14				Feb-14				Mar-14				Apr-14				
			Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鯉	NP	C									+				+	+	+		+	+	+	
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC									+				+				+			
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+				+				+				+	+	+		+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Parazacco spilurus</i>	異鱮	NP, V	C	+	+	+		+	+	++	++	+	+	+	+	+	+	+	+	+	+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC									+				+	+	+	+	+	+	+	+
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C									+				+				+		+	
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+	+	+	+	++	++	+	+	+	+	+	+	+	+	+	+	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C		+				+				+				+	+			+	+	
<i>Zacco platypus</i>	寬鰭鱮	NP	C	+	+	+	+	+	+	++	+	+	+	++	++	+	+	++	++	+	+	++	++
2x2m fish number				5	3	4	2	12	16	30	40	30	40	50	60	60	60	70	70	40	40	50	40
No of Species				8	8	7	6	8	8	7	7	12	8	7	7	12	11	11	8	12	11	12	9
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R					+				+	+			+	+	+				+	

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species		Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
				May-14				Jun-14				Jul-14				Aug-14				Sep-14				
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鯉	NP	C	+	+	+		+	+			+	+			+	+	+		+	+	+		
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+				+			+	+				+	+			+	+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																					
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+		+		+	+	+		+		+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC	+	+	+	+	+			+									+				+
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C			+				+			+				+					+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Tilapia jola</i>	喬克非鯽	NP, VU																						
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+			+			+				+					+		+
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	++	+	+	+	++	++	+	+
			2x2m fish number	20	10	20	10	12	5	8	6	16	8	10	10	12	10	16	12	20	20	30	16	
			No of Species	10	10	13	9	10	9	11	9	9	8	11	10	9	9	12	10	9	9	12	10	
Amphibian																								
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R			+				+				+			+					+		

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
			Oct-14				Nov-14				Dec-14				Jan-15				Feb-15				
			Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鯉	NP	C		+	+			+	+						+				+			
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+	+				+				+						+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+				+			+	+			+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Parazacco spilurus</i>	異鱮	NP, V	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC				+						+								+	+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C			+				+				+								+	
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C							+												+	
<i>Zacco platypus</i>	寬鰭鱮	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
			2x2m fish number	40	30	40	30	50	50	60	50	60	50	50	40	50	40	40	50	40	30	40	40
			No of Species	8	9	11	10	8	9	12	8	7	6	11	9	7	8	11	8	7	9	12	8
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R			+				+				+							+		

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring							
			Mar-15				Apr-15				May-15				Jun-15							
			Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3				
<i>Channa maculata</i>	斑鯉	NP	C		+				+					+	+				+			
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+	+			+				+	+				+	+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+		+	+	+	+		+	+	+		+	+	+		
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																			
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+			+	+	+			+	+	+		+	+	+		
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	+		+	+	++	+		+	+	++	++		+	+	++	++
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+			+	+				+	+				+	+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C			+				+					+					+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Tilapia jola</i>	喬克非鯽	NP, VU																				
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C	+	+	+			+	+	+			+	+	+				+	+	
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	++	++	+		+	++	++	+		+	+	++	+		+	+	++	+
2x2m fish number				40	40	50	50	30	35	55	45	20	10	20	10	20	10	20	10	20	10	
No of Species				8	10	12	9	8	10	12	9	8	9	13	10	8	8	13	10			
Amphibian																						
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R			+				+					+					+		

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
			Jul-15				Aug-15				Sep-15				Oct-15				Nov-15				
			Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鯉	NP	C			+				+					+						+		
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+	+			+	+				+	+					+	+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+			+	+	+	+		+	+	+	+			+	+	
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+				+	+	+			+	+	+				+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	+	++	++			+	++	++			+	++	++				+	++	
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+	+			+	+	+			+	+	+				+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+				+	+				+	+					+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C			+					+					+						+	
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+			+	+	+			+	+	+				+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+			+	+	+	+		+	+	+	+			+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+	+			+	+	+			+	+	+				+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+				+	+				+	+					+	
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	+	++	+			+	+	++	+		+	++	++	+			+	++	
			2x2m fish number	15	8	15	8	20	10	20	10	20	12	23	12	35	35	25	20	45	45	35	30
			No of Species	8	8	13	10	8	8	13	7	8	8	13	6	8	8	13	6	8	8	13	6
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R																				

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
			Dec-15				Jan-16				Feb-16				Mar-16				Apr-16				
			Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鯉	NP	C			+				+						+					+		
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+	+			+	+			+	+			+	+			+	+
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	++	++		+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+			+	+			+	+			+	+			+	+
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C			+																	
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+			+	+			+	+			+	+			+	+
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
			2x2m fish number	55	50	40	35	55	45	35	25	60	45	40	30	60	50	35	25	40	40	30	20
			No of Species	8	8	13	6	8	8	12	7	8	8	12	7	8	8	12	7	8	8	12	7
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R			+				+				+				+				+	

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species		Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
				May-16				Jun-16				Jul-16				Aug-16				Sep-16			
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3
<i>Channa maculata</i>	斑鯉	NP	C			+				+					+				+				
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+	+			+	+			+	+			+				+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+	+			+	+			+	+			+				+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C																				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+	+			+	+			+	+			+				+	
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
			2x2m fish number	30	20	20	10	30	20	25	8	20	15	20	3	20	10	15	5	20	12	15	8
			No of Species	8	8	12	7	8	8	12	7	8	8	12	8	8	8	12	5	8	8	12	5
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R																			+	

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species		Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
				Oct-16				Nov-16				Dec-16				Jan-17				Feb-17			
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3
<i>Channa maculata</i>	斑鯉	NP	C			+				+						+						+	
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+				+					+							+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+				+				+						+			
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C																				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+		+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+				+				+						+		+	
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
			2x2m fish number	25	20	20	10	35	35	30	20	45	40	40	20	45	45	45	20	50	50	50	30
			No of Species	8	8	12	5	8	8	12	5	8	8	12	5	8	8	12	5	8	8	12	5
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGCC	R			+																	

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species	Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				
			Mar-17				Apr-17				May-17				Jun-17				Jul-17				
			Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鯉	NP	C			+				+					+						+		
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+				+					+						+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+			+	+	+	+		+	+	+	+		+	+	+	
<i>Hemiculter leucisculus</i>	藍刀	NP	UC																				
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+				+	+	+			+	+	+			+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	++	++	+			+	++	++	+		+	++	++	+		+	++	++	+
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+	+			+	+	+	+		+	+	+	+		+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+						+					+					+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C																				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+				+	+	+			+	+	+			+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+			+	+	+	+		+	+	+	+		+	+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU																					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+				+	+	+			+	+	+			+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+						+					+					+	
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	++	++	+			+	++	++	+		+	++	++	+		+	++	++	+
2x2m fish number				55	55	50	20	35	30	40	15	20	20	15	10	15	10	10	5	15	8	8	5
No of Species				8	8	12	5	8	8	12	5	8	8	12	5	8	8	12	5	8	8	12	5
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGC	R			+						+					+					+	

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Table 4.6 Fish species and Hong Kong Newt recorded at She Shan River
(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

Species		Status	Commonness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring			
				Aug-17				Sep-17				Oct-17				Nov-17			
				Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3
<i>Channa maculata</i>	斑鯉	NP	C			+				+					+			+	
<i>Clarias gariepinus</i>	革胡子鯰	NP	VC			+				+					+			+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Hemiculter leucisculus</i>	藍刀	NP	UC							+					+			+	
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
<i>Parazacco spilurus</i>	異鱖	NP, V	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC			+				+				+				+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱗鯰	NP	C																
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Tilapia jola</i>	喬克非鯽	NP, VU								+				+				+	
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+	+	+		+	+	+		+	+	+		+	+	+	
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C			+				+				+				+	
<i>Zacco platypus</i>	寬鰭鱖	NP	C	+	++	++	+	+	++	++	+	+	++	++	+	+	++	++	+
			2x2m fish number	20	10	10	5	30	25	20	8	30	25	25	10	35	30	30	20
			No of Species	8	8	12	5	8	8	14	5	8	8	14	5	8	8	14	5
Amphibian																			
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGCC	R			+													

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Table 4.7 Abiotic data for the Upper She Shan River

(T1- Upper stream section, T2 - middle stream section and T3 - Lower stream section)

	Baseline monitoring	Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring		
Parameter / date	Aug-08	Jan-09			Jul-09			Jan-10			Jul-10			Jan-11			Jul-11		
Replicate		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
DO (mg/L)	8.9	--	9.1	8.3	6	5.8	6.5	--	8.9	--	8.2	8.3	8.3	8	8.5	8.8	8	8.5	9
pH	7.29	--	7.51	7.42	7.22	7.16	7.35	--	7.5	--	7.5	7.5	7.5	6.9	7	7.2	7	7.2	7.5
Nitrate (mg N/L)	0.5	--	1.6	1.5	0.22	0.3	0.4	--	0.75	--	0.1	0.14	0.2	0.1	0.2	0.7	0.1	0.3	0.4
Ammonia (mg N/L)	0.1	--	PO4-P (µg P/L) :<100	PO4-P (µg P/L) :110	0.83	0.97	0.99	--	0.03	--	0.25	0.2	0.12	0.1	0.1	0.12	0.1	0.1	0.15
Salinity (ppt)	<0.1	--	0.1	0.1	0	0	0	--	0	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Conductivity (µS/cm)	90	--	140	170	116	114	116	--	105	--	410	410	390	110	111	115	120	115	130
BOD (mg/L)	<2	--	<2	4	<2	<2	<2	--	2	--	<2	3.2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.1-0.3	--	<0.01-0.1		<0.01	N.A	<0.01-0.1	--	<0.01-0.1	--	0.1	0	0	0.1	0	0	0.2	0.05	0.1
Water flow at riffle (m/s)	0.4-0.5	--	0.2-0.3		<0.01	N.A	0.2-0.3	--	0.01	--	0.1	0	0	0.1	0	0	0.2	0.1	0.1
Sand (%)	55	65	23	65	23	23	65	5	23	--	5	30	5	5	30	2	5	30	2
Stone (%)	25	30	75	30	75	75	30	40	75	--	40	65	80	40	65	2	40	65	2
Mud (%)	30	5	2	5	2	2	5	5	2	--	5	5	5	5	5	1	5	5	1
Concrete (%)	0	0	0	0	0	0	0	50	0	100	50	0	10	50	0	95	50	0	95

**Agreement No. CE65/2013(EP) Post-Construction
Ecological Monitoring of River Improvement Work in
Upper Lam Tsuen River, She Shan River and Upper Tai Po
River – Investigation
Post-Construction Ecological Monitoring Report (No. 47)
Upper Tai Po River**

Novemeber 2017



Prepared by : Mike Pang

20 December, 2017

Validated by: Mark Shea

Handwritten signatures of Mike Pang and Mark Shea.

20 December , 2017

Ecology Team: China Hong Kong Ecology Consultants

**Post-Construction Ecological Monitoring of River
Improvement Work in Upper Lam Tsuen River, She Shan
River and Upper Tai Po River – Investigation
Agreement No. CE65/2013(EP)**

**Post-Construction Ecological Monitoring Report (No.47)
Upper Tai Po River**

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1 Introduction

- 1.1 The current post-construction ecological monitoring programme is under Agreement No. CE65/2013(EP) Post-Construction Ecological Monitoring of River Improvement Work in Upper Lam Tsuen River, She Shan River and Upper Tai Po River. The collected data are mainly used to assess ecological recovery process and effectiveness of ecological migration proposed and enforced during the construction period.
- 1.2 The scope of the ecological monitoring was detailed in EM & A Manual of the project. In brief, the survey aimed to collect data on abiotic factors such as water quality, substratum characteristics, water flow as well as flora and fauna.
- 1.3 China Hong Kong Ecology Consultants Ltd. was committed by Allied Environmental Consultants Ltd (AEC) to undertake the ecological monitoring tasks for the project from December 2014.
- 1.4 This is the number 47 post-construction ecological monitoring report for the project conducted **on 17th November 2017**. It contains the following subsections:
 - Summary of major points
 - Monitoring Methods and Results
 - Summary and Comments

2 Summary of Major Points

- Fauna and flora along the drainage project sections are in a process of re-establishing or restoration;
- Bird abundance was similar to those recorded during baseline survey;
- The abundance of target river fauna, i.e., fish *Parazacco spilurus* recorded was lower than those recorded during baseline monitoring (before fish capture/relocation took place). The reason for low fish population of *Parazacco spilurus* was due to river bed modification. The rare fish *Pseudobagrus trilineatus* was consistently recorded in the river during recent monitoring. The other target species, Hong Kong Newt *Paramesotriton hongkongensis*, was not found within works area during baseline, impact monitoring and it was recorded in the river during post construction monitoring. Apart from fauna species, 55 flora species was recorded within the survey transects along the river course. Some common herbs were observed generating on the embankment, which indicating that vegetation was recovering. Flora species of *Tibouchina semidecandra* and *Ipomoea pes-caprae* were planted on the gabion along the river for landscape purpose;
- The abundance of fish was similar to last month with slight increase;
- Lower abundance of odonata was recorded in this month; and
- Hong Kong Newt was recorded during the survey.

3 Monitoring Methodology

3.1 Riparian Vegetation

Riparian vegetation including aquatic and emergent was sampled by line transects along the affected river channel and riparian habitat. Species, relative abundance and average heights were recorded. Vegetation surveys were conducted at three selected belt transects with one located at the upper portion of the river channel (T1) and another one at the middle section of the river (T2), as well as reference site (**Figure 1**). The belt transects was run across the river channel in order to collect quantitative data of the vegetation, e.g., species inventory, height, percentage cover. Qualitative data of plants was collected by recording plant species along line transect, e.g., species inventory, relative abundance. Nomenclature and protection status of the species has followed those documented in Lai *et al.* (2004) and Hong Kong Herbarium (2015).

3.2 Avifauna

Avifauna survey was conducted during post construction monitoring period. Special attention was given to the river channel and corridor area which birds used as feeding and foraging habitat. Avifauna survey was undertaken in the early morning plus species recorded in the rest of the day when conducting other taxonomic groups (benthic, fish, insect) monitoring. Numerical abundance was recorded at fixed count points within a radius of 30 to 50m according to landscape feature and visual penetration extent. The duration of the point count of birds was standardized for 10 minutes at each location in order to collect comparable data. Transect count along accessible sections of river channel were used in order to collect qualitative data. Binoculars and digital camera were the main items of equipment used. Nomenclature and protection status of the species has followed in the AFCDD website (www.hkbiodiversity.net) and Carey *et al.* (2001).

The point count was conducted at two locations with one located at the lower portion of the river channel (T2) and the other located at the upper section of the river (T1). The point count locations, survey transect for bird survey and sampling sites for surveys of other faunal groups and flora was given in **Figure 1**.

3.3 Adult Odonata Survey

Adult Odonata surveys were conducted along transects (**Figure 1**). Binoculars, digital camera and hand net were utilized to aid identification. Numerical abundance, species identity and other notable behavior were recorded. Nomenclature and protection status of the species has followed those documented in the AFCDD website (www.hkbiodiversity.net), Wilson *et al.* (2004) and Tam *et al.* (2011). Adult Odonata survey was conducted along line transects in parallel with river channel within the works area where access was permitted.

3.4 Aquatic Macro-invertebrates

Macro-invertebrates in the river channel were surveyed in three sampling sites with two located at upper (T1) and middle (T2) proportion of the river respectively and one reference site. It aims to collect necessary macro-invertebrate fauna for ecological monitoring programme (**Figure 1**). Five replicates were taken at each sampling point and pool together for further sample sorting and identification. Kick sampling and hand netting were the survey methodologies for river organisms. Dissection microscope and digital camera were used to aid identification and enumeration. Numerical abundance and species identity were recorded. Nomenclature and protection status of the species has followed those documented in the AFCD website (www.hkbiodiversity.net) and other literatures such as Dudgeon (1994).

3.5 Fish and Newt

Fish community including target species *Parazacco spilurus* and *Paramesotriton hongkongensis* at the specified river channel was monitored by live trapping, hand netting and direct observation methods.

Sampling was conducted at three sampling locations with one located at upper section (T1) and one located at middle section (T2), as well as reference site. The selected sampling site covered major type of river habitats, e.g. river pool and riffle (**Figure 1**). The number of the observed fish and newt was estimated and recorded. Nomenclature and protection status of the species has followed those documented in the AFCD website (www.hkbiodiversity.net) and Lee *et al.* (2004).

3.6 Abiotic Data Collection

3.6.1 Water Quality Monitoring

Dissolved oxygen level, pH value, conductivity, salinity, BOD and nutrient level (nitrate and ammonium) were measured and analyzed by conventional methods in situ or in laboratory. The instruments for measuring dissolved oxygen level, pH value, conductivity, salinity were model: DO-5510, AZ8685, AZ8361 and AZ8374 respectively. All the instruments were calculated every monitoring month according to the operation manuals in order to obtain the precise result. BOD test took 5 days to complete within darkness incubator with stable temperature at 20°C and was performed using model: DO-5510 for measuring dissolved oxygen. Nutrient levels including nitrate and ammonia were performed in laboratory by applying the In-house method SOP056 (FIA) and SOP057 (FIA) respectively.

3.6.2 Sediment Characteristics

Sediment/substrate characteristics were recorded of sediment cover in percentage e.g. mud, sand, rock, boulder and cemented bottom in the river bed at sampling sites.

3.6.3 Water Flow

Water flow rates in river channel were measured by recording the time taken for a floating object (e.g. floating ball) in a measured distance. The sampling sites for surveys were given in **Figure 1**.

4 Monitoring Results

4.1 Vegetation

Major proportion of river bed and bank was concrete and without plant colonizing (Photos 1-4). Vegetation has sparsely covered the gabion wall along the upper Tai Po River and the river bed with some common plants (Photo 4) including invasive species *Mikania micrantha*, and native species *Commelina diffusa*. Most of the plants on the river bed along the river have been removed from the clearance work. In total, 55 flora species were recorded within the survey transects along the river course. Abundant native species *Commelina diffusa* was the dominant species established in the river bed. Vegetation coverage in upper section was still low. Flooding was observed in this month, which washed out most of the plants of the river. The flora were generally in good health, and the height of the dominated riparian grass and herb species were in a range from 0.4m to 1.6m as observed along survey transect. Abundant flora species were shown in the **Table 4.1** marked with relative abundance sign “+++”. Results of vegetation survey and belt transect survey were presented in **Table 4.1** and **Table 4.2**. **Figure 1** shows the transect line for the flora surveys.

4.2 Fauna

4.2.1 Avifauna

An avifauna survey was undertaken along survey transects and at two defined point count locations. In total, 15 species of birds were recorded during bird survey. Among them, 5 species were wetland dependant birds observed feeding and roosting in the river channel including *Alcedo atthis*, *Ardeola bacchus* (Photo 5), *Egretta garzetta* (Photo 6), *Motacilla alba* and *Motacilla cinerea*. A common species *Pycnonotus jocosus* was the dominant species of most of the proportion of the river. All the birds in Hong Kong are under protection of Wild Animals Protection Ordinance (Cap. 170). Some of the wetland dependent species recorded are classified as Regional Concern by Fellowes *et al.* (2002) including *Egretta garzetta* and *Ardeola bacchus*, which were usually observed feeding in the river. Only foraging and roosting behaviour of some wetland dependent birds were noticed. Transect and Point Count locations were shown on **Figure 1**. Result of bird survey was presented in the **Table 4.3**.

4.2.2 Adult Odonata Survey

Odonata surveys were performed and a list of recorded odonata species at Upper Tai Po River is shown in **Table 4.4**. Number of odonata species recorded was similar to the previous surveys conducted in approximate period of last year. In total, 5 species odonata was found, the recorded odonata species was common species in Hong Kong. Comparing with the result of last month, less species of odonata were found in this month due to seasonality. Most of the odonata species in Hong Kong has the peak emergence from spring to late summer. It is expected that number of odonata will keep decreasing in the following months during dry season (Wilson *et al.*, 2004 & Tam *et al.*, 2011). Sampling location was shown in **Figure 1**.

4.2.3 Aquatic Macro-invertebrates

Aquatic-net and kick sampling were performed at the river. The river benthic fauna collected was mainly comprised of insects, molluscs and crustaceans (Photo 7). Details of recorded of river benthic fauna refers to **Table 4.5**. Sampling location was shown on **Figure 1**.

4.2.4 Hong Kong Newt

Survey of Hong Kong Newt was conducted at Upper Tai Po River. An adult Hong Kong Newt was recorded in this month at reference site. Hong Kong Newt is listed in Wild Animals Protection Ordinance (Cap. 170) and classified as “Near Threatened” under IUCN Red List Status and as “Potential Global Concern” by Fellowes *et al.* (2002). Record of Hong Kong Newts can be referred to **Table 4.6**.

4.2.5 River Fish Fauna

Fish surveys were performed at Upper Tai Po River during surveys. In total, 12 species of freshwater fish were recorded within project area. Fish abundance was low along the modified river channel. The *Parazacco spilurus*, *Glyptothorax pallozonum* and *Pseudobagrus trilineatus*, which have conservation interest, were restricted in the upper section of the surveyed river outside the works boundary where the habitat was not affected by construction works, while *Parazacco spilurus* is listed in China Red Data Book Status as Vulnerable and *Pseudobagrus trilineatus* is classified as Global Concern by Fellowes *et al.* (2002). The data showed that fish abundance was similar to the record of last month with slight increase in reference site. Details of records of fish fauna refers to **Table 4.6**. Sampling location was shown on **Figure 1**.

4.3 **Abiotic Data**

Data on water quality and major river hydrological feature (water flow and substratum) of the river were collected and are presented in the **Table 4.7**.

Generally, the water was not polluted and nutrient levels were generally low. Results of water test were presented in the **Table 4.7**.

The river substratums of upper and lower sections were comprised of 40% stone and 60% concrete, 20% stone and 80% concrete respectively. Moderate water flow up to 0.3m/second at pool and 0.6m/second at riffle was measured.

5 **Summary and Commentary**

Post construction ecological monitoring was carried out in current month and relevant biotic and abiotic data were collected according to project specification and EM & A Manual. An adult Hong Kong Newt was recorded during the survey. Fish’s abundance appears to be similar to last month. Bird abundance was similar to those recorded during baseline survey. Species richness of odonata was lower than last month’s result.

Aquatic and riparian vegetation along river channel was re-established compared to those recorded during baseline surveys. Vegetation has sparsely covered gabion wall and river bed along to the Upper Tai Po River.

The water quality of the surveyed river was not polluted as indicated by low nutrient concentration level of ammonium and nitrate although the river channel may receive discharge and runoff from the village areas.

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FIGURE

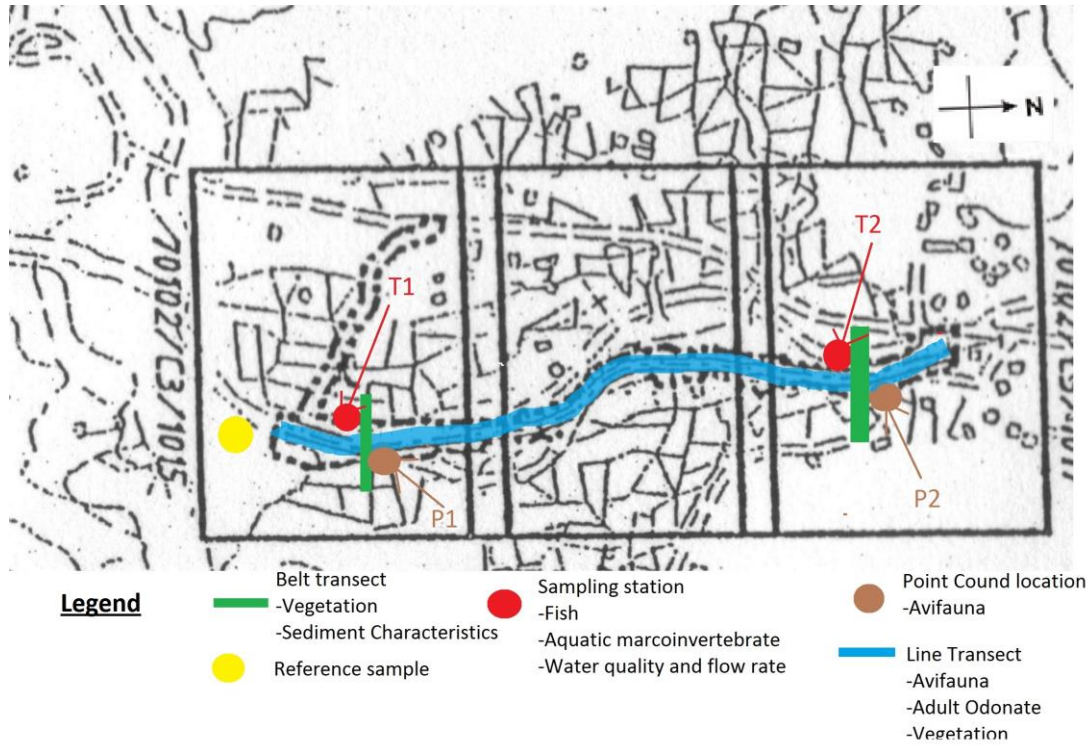


Figure 1. Sampling Location of Ecological Survey and Monitoring at Upper Tai Po River, Tai Po.

PHOTOS



Photo 1: General view of the river channel (Reference site)



Photo 2: General view of the river channel (Upper section)



Photo 3: General view of the river channel (Middle section)



Photo 4: Vegetation sparsely growing on gabion (Middle section)



Photo 5 : Avifauna – *Ardeola bacchus*



Photo 6 : Avifauna – *Egretta garzetta*



Photo 7: Aquatic sample

TABLE

Table 4.1. Flora species recorded at the transect along the Upper Tai Po River including riparian habitat.

		Post Construction Monitoring																				
Family	Species name	Species name in Chinese	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16
Acoraceae	<i>Acorus gramineus</i>	金錢蒲	+	+	+	+					+	+	+	+	+	+	+	+	+	+	+	+
Amaranthaceae	<i>Alecranthus phloxeroides</i>	空心蓮子草	++	++	++	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Amaranthaceae	<i>Amaranthus viridis</i>	野苧	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Amaranthaceae	<i>Celosia argentea</i>	青葙	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Araceae	<i>Alocasia macrorrhizos</i>	海芋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Araceae	<i>Colocasia esculenta</i>	芋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Bidens alba</i>	白花鬼針草	+++	+++	+++	+++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊	++	++	++	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	+++	+++	+++	+++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Asteraceae	<i>Synedrella nodiflora</i>	金腰箭	+	+	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Wedelia chinensis</i>	柳娘菊	+	+	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Eclipta prostrata</i>	鱧腸	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Erechthites hieracifolius</i>	革命菜	+	+	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Youngia japonica</i>	黃鶴菜	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Asteraceae	<i>Conyza canadensis</i>	小蓬草	+	+	+	+																
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bombacaceae	<i>Bombax ceiba</i>	木棉																				
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜	+	+	+	+																
Caesalpiniaceae	<i>Bauhinia championii</i>	缺葉藤	+	+	+	+																
Caprifoliaceae	<i>Viburnum odoratissimum</i>	珊瑚樹																				
Caryophyllaceae	<i>Dymaria cordata</i>	荷蓮豆	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Caryophyllaceae	<i>Miosoton aquaticum</i>	鴨腳菜	+	+	+	+																
Commelinaceae	<i>Commelina diffusa</i>	蘭蘭草	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++
Commelinaceae	<i>Floscopa scandens</i>	蕺花草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Convolvulaceae	<i>Ipomoea aquatica</i>	通菜																				
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍	++	++	++	++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Convolvulaceae	<i>Ipomoea pes-caprae</i>	海藤牽牛	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Convolvulaceae	<i>Merremia hederacea</i>	魚黃草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Cucurbitaceae	<i>Benincasa hispida</i>	冬瓜																				
Equisetaceae	<i>Equisetum debile</i>	筆管草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Euphorbiaceae	<i>Glochidion zeylanicum</i>	香港算盤子																				
Euphorbiaceae	<i>Phyllanthus reticulatus</i>	小果葉下珠	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fabaceae	<i>Pueraria lobata</i>	野葛	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Lauraceae	<i>Cinnamomum camphora</i>	樟樹																				
Lauraceae	<i>Litsea glutinosa</i>	潺槁樹																				
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Melastomataceae	<i>Melastoma sanguineum</i>	毛稔	+	+	+	+																
Melastomataceae	<i>Tibouchina semidecandra</i>	巴西野牡丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Mimosaceae	<i>Calliandra haematocephala</i>	紅絨球	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Mimosaceae	<i>Mimosa pudica</i>	含羞草	+	+	+	+																
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Moraceae	<i>Ficus hispida</i>	對葉榕	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Moraceae	<i>Ficus variegata</i>	青葉榕	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Musaceae	<i>Musa paradisiaca</i>	大蕉	+	+	+	+																
Myrtaceae	<i>Psidium guajava</i>	番石榴																				
Myrtaceae	<i>Cleistocalyx operculatus</i>	水箭	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Oleaceae	<i>Ligustrum sinense</i>	山指甲	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Oxalidaceae	<i>Oxalis corniculata</i>	酢漿草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Plantaginaceae	<i>Plantago major</i>	車前草	+	+	+	+																
Poaceae	<i>Panicum repens</i>	枯骨草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	+	+	+	+	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Poaceae	<i>Pennisetum purpureum</i>	象草	+	+	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Poaceae	<i>Coix lacryma-jobi</i>	慈苳	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Phragmites karka</i>	卡爾蘆	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Miscanthus floridulus</i>	五節芒	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Brachiaria mutica</i>	巴拉草	++	++	++	++	+++	+++	+++	+++	++	++	++	++	++	++	++	++	++	++	++	++
Poaceae	<i>Digitaria radicata</i>	紅尾翎	+	+	+	+	++	++	++	++	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum barbatum</i>	毛萋	+	+	+	+																
Polygonaceae	<i>Polygonum chinense</i>	火炭母	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Rumex crispus</i>	假菠菜					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Rutaceae	<i>Clausena lansium</i>	黃皮																				
Sapindaceae	<i>Dimocarpus longan</i>	龍眼																				
Sapindaceae	<i>Litchi chinensis</i>	荔枝																				
Scrophulariaceae	<i>Scoparia dulcis</i>	冰糖草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Solanaceae	<i>Solanum torvum</i>	水茄	+	+	+	+																
Solanaceae	<i>Solanum nigrum</i>	龍葵	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Celtis sinensis</i>	朴樹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Boehmeria nivea</i>	芋麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pouzolzia zeylanica</i>	露水葛	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Lantana camara</i>	馬鞭丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Eleusine indica</i>	牛筋草					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Brassicaceae	<i>Rorippa indica</i>	塘蔴菜					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Isachne globosa</i>	柳葉箬					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Paspalum distichum</i>	雙穗雀稗					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Cyperaceae	<i>Cyperus involucreatus</i>	風車草					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Dioscoreaceae	<i>Dioscorea alata</i>	參薯					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Menispermaceae	<i>Stephania longa</i>	黃寶莖					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Balsaminaceae	<i>Impatiens walteriana</i>	非洲鳳仙					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Rubiaceae	<i>Paederia scandens</i>	羅欠藤					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ulmaceae	<i>Trema tomentosa</i>	山黃麻					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Duranta erecta</i>	假連翹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Floating plant																						
Lemnaceae	<i>Lemna minor</i>	浮萍					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
No of Species			62	63	63	63	61	63	63	66	67	67	67	67	67	67	67	67	65	65	66	66

Note:
+, occurred; ++, common; +++, abundant species recorded in study area

Table 4.1. Flora species recorded at the transect along the Upper Tai Po River including riparian habitat.

		Post Construction Monitoring																				
Family	Species name	Species name in Chinese	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	
Acoraceae	<i>Acorus gramineus</i>	金錢蒲	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Amaranthaceae	<i>Alemeranthera phloxeroides</i>	空心蓮子草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Amaranthaceae	<i>Amaranthus viridis</i>	野苋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Amaranthaceae	<i>Celosia argentea</i>	青葙																				
Araceae	<i>Alocasia macrorrhizos</i>	海芋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Araceae	<i>Colocasia esculenta</i>	芋	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Asteraceae	<i>Bidens alba</i>	白花鬼針草	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
Asteraceae	<i>Synedrella nodiflora</i>	金腰箭	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Asteraceae	<i>Wedelia chinensis</i>	柳娘菊	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Asteraceae	<i>Eclipta prostrata</i>	鵝腸菊	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Asteraceae	<i>Erechtites hieracifolius</i>	革命菜																				
Asteraceae	<i>Youngia japonica</i>	黃鶉菜	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Asteraceae	<i>Conyza canadensis</i>	小蓬草																				
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Bombacaceae	<i>Bombax ceiba</i>	木棉																				
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜										+	+	+	+	+	+	+	+	+	+	
Caesalpiniaceae	<i>Bauhinia championii</i>	缺葉藤																				
Caprifoliaceae	<i>Viburnum odoratissimum</i>	珊瑚樹																				
Caryophyllaceae	<i>Drymaria cordata</i>	荷蓮豆																				
Caryophyllaceae	<i>Myosoton aquaticum</i>	鵝腸菜																				
Commelinaceae	<i>Commelina diffusa</i>	蘭苣草	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
Commelinaceae	<i>Floscopa scandens</i>	蕹花草										+	+	+	+	+	+	+	+	+	+	
Convolvulaceae	<i>Ipomoea aquatica</i>	通菜																				
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Convolvulaceae	<i>Ipomoea pes-caprae</i>	海難牽牛																				
Convolvulaceae	<i>Merremia hederacea</i>	魚黃草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Cucurbitaceae	<i>Benincasa hispida</i>	冬瓜																				
Equisetaceae	<i>Equisetum debile</i>	筆管草																				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Euphorbiaceae	<i>Glochidion zeylanicum</i>	香港算盤子																				
Euphorbiaceae	<i>Phyllanthus reticulatus</i>	小果葉下珠	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Fabaceae	<i>Pueraria lobata</i>	野葛	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lauraceae	<i>Cinnamomum camphora</i>	樟樹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Lauraceae	<i>Litsea glutinosa</i>	潺槁樹																				
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Melastomataceae	<i>Melastoma sanguineum</i>	毛稔																				
Melastomataceae	<i>Tibouchina semidecandra</i>	巴西野牡丹																				
Mimosaceae	<i>Calliandra haematocephala</i>	紅絨球	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Mimosaceae	<i>Mimosa pudica</i>	含羞草										+	+	+	+	+	+	+	+	+	+	
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡	+	+	+	+	+	+	+	+	+	++	++	++	++	++	++	++	++	++	++	
Moraceae	<i>Ficus hispida</i>	對葉榕	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Moraceae	<i>Ficus variegata</i>	青葉榕	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Musaceae	<i>Musa paradisiaca</i>	大蕉	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Myrtaceae	<i>Psidium guajava</i>	番石榴																				
Myrtaceae	<i>Cleistocalyx operculatus</i>	水箭	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Oleaceae	<i>Ligustrum sinense</i>	山指甲	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																				
Oxalidaceae	<i>Oxalis corniculata</i>	酢漿草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Plantaginaceae	<i>Piantago major</i>	車前草																				
Poaceae	<i>Panicum repens</i>	枯骨草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Pennisetum purpureum</i>	象草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Coix lacryma-jobi</i>	慈苳	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Phragmites karka</i>	卡爾蘆	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Miscanthus floridulus</i>	五節芒	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Brachiaria mutica</i>	巴拉草	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	
Poaceae	<i>Digitaria radicata</i>	紅尾翎	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Polygonaceae	<i>Polygonum barbatum</i>	毛萆																				
Polygonaceae	<i>Polygonum chinense</i>	火炭母	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Polygonaceae	<i>Rumex crispus</i>	假菠菜	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Rutaceae	<i>Clausena lansium</i>	黃皮																				
Sapindaceae	<i>Dimocarpus longan</i>	龍眼																				
Sapindaceae	<i>Litchi chinensis</i>	荔枝																				
Scrophulariaceae	<i>Scoparia dulcis</i>	冰糖草	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Solanaceae	<i>Solanum torvum</i>	水茄																				
Solanaceae	<i>Solanum nigrum</i>	龍葵	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Ulmaceae	<i>Celtis sinensis</i>	朴樹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Urticaceae	<i>Boehmeria nivea</i>	芋麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Urticaceae	<i>Pouzolzia zeylanica</i>	露水葛																				
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Poaceae	<i>Eleusine indica</i>	牛筋草																				
Brassicaceae	<i>Rorippa indica</i>	塘蔴菜																				
Poaceae	<i>Isachne globosa</i>	柳葉箬																				
Poaceae	<i>Paspalum distichum</i>	雙穗雀稗																				
Cyperaceae	<i>Cyperus involucreatus</i>	風車草																				
Dioscoreaceae	<i>Dioscorea alata</i>	參薯	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Menispermaceae	<i>Stephania longia</i>	黃寶蔞	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Polygonaceae	<i>Polygonum hydropiper</i>	水萆																				
Balsaminaceae	<i>Impatiens wulleriana</i>	非洲鳳仙																				
Rubiaceae	<i>Paederia scandens</i>	羅矢藤	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Ulmaceae	<i>Trema tomentosa</i>	山黃麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Verbenaceae	<i>Duranta erecta</i>	假連翹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Floating plant																						
Lemnaceae	<i>Lemna minor</i>	浮萍	+	+	+	+																
No of Species			52	52	52	52	52	52	52	52	52	55	55	55	55	55	55	55	55	55	55	

Note:
+, occurred; ++, common; +++, abundant species recorded in study area

Table 4.2. Flora species recorded from belt transect survey at the Upper Tai Po stream (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Family	Species	Chinese name	Baseline survey				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring				Impact monitoring														
			Oct-07				Jan-09				Jul-09				Jan-10				Jul-10				Jan-11				Jul-11														
			P1		P2		Reference		T1		T2		Reference		T1		T2		Reference		T1		T2		Reference		T1		T2		Reference		T1		T2						
Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%										
Asteraceae	<i>Mikania micrantha</i>	蕨甘菊	0.4	15	1	40	0.5	5	0.5	5																															
Moraceae	<i>Ficus hispida</i>	封蔴榕	1	2			5	5			2	10																													
Ulmaceae	<i>Celtis sinensis</i>	朴樹	5	2							6	15																													
Poaceae	<i>Microstegium ciliatum</i>	剛莠竹	1.2	45	1.2	30			0.8	10	0.5	12																													
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐	2	2			5	5	3	5	1.5	4	5	5	3	5	1.5	5	5	5																					
Araceae	<i>Alocasia odora</i>	海芋	1.5	23							1.5	25																													
Araceae	<i>Colocasia esculenta</i>	芋	0.3	<1	0.4	<1	0.3	2																																	
Myrtaceae	<i>Cleitocalyx operculatus</i>	水翁					0.4	10			7	5																													
Athyriaceae	<i>Callipteris esculenta</i>	麥蕨			0.6	1	0.8	10			0.4	10	0.8	10																											
Poaceae	<i>Phragmites karka</i>	卡爾蘆					1.5	51					1.5	51																											
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	薄前毛蕨	0.4	10							0.4	10																													
Equisetaceae	<i>Equisetum debile</i>	筆管草			0.6	<1	0.3	2					0.3	2																											
Asteraceae	<i>Ageratum conyzoides</i>	勝紅蕒							0.4	2					0.4	2																									
Commelinaceae	<i>Commelina diffusa</i>	節節草															0.2	5	0.2	5																					
Solanaceae	<i>Solanum nigrum</i>	龍葵																																							
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																																							
Poaceae	<i>Eleusine indica</i>	牛筋草													0.5	5																									
Poaceae	<i>Pennisetum purpureum</i>	象草								3	4																														
Asteraceae	<i>Wedelia chinensis</i>	銀銀菊																																							
Asteraceae	<i>Bidens alba</i>	白花鬼針草																																							
Poaceae	<i>Panicum repens</i>	枯骨草																																							
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																																							
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																																							
Cucurbitaceae	<i>Benincasa hispida</i>	冬瓜																																							
Fabaceae	<i>Pueraria lobata</i>	野葛																																							
Convolvulaceae	<i>Merremia hederacea</i>	魚黃草																																							
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																																							
Poaceae	<i>Brachiaria mutica</i>	巴拉草																																							
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																																							
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花																																							
Cyperaceae	<i>Cyperus sp.</i>	莎草																																							
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙																																							
Amaranthaceae	<i>Celosia argentea</i>	青葙																																							
Bare Ground							10		73		10		10		78		6		10		73		88		9		15		65		68		80		89		71		100		89

- Reference point was the sampling location outside the works area used to compare with the data within works area.

P1 - Point count location 1; P2 - Point count location 2

Table 4.2. Flora species recorded from belt transect survey at the Upper Tai Po stream (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Family	Species	Chinese name	Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring																							
			Feb-14			Mar-14			Apr-14			May-15			Jun-15			Jul-15			Aug-15			Sep-15			Oct-15																							
			Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2																					
Asteraceae	<i>Mikania micrantha</i>	蔗甘菊	0.8	15	0.3	10	0.8	15	0.3	10	0.8	15	0.3	10	0.5	10	0.3	3	0.5	10	0.3	3	0.5	10	0.5	10	0.5	10	0.5	10	0.5	10	0.5	10	0.5	10	0.5	10												
Moraceae	<i>Ficus hispida</i>	野葛																																																
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																																
Poaceae	<i>Microstegium ciliatum</i>	剛莠竹	1.3	5	1	5	1.3	5	1	5	1.3	5	1	5	1	5	1	3	1	5	1	3	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5												
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐			0.6	1			0.6	1					0.5	1			0.5	1			1.5	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5												
Araceae	<i>Alocasia odora</i>	海芋																																																
Araceae	<i>Colocasia esculenta</i>	芋	0.8	5			0.8	5			0.8	5			0.5	5			0.5	5			0.5	5	1.2	10	0.5	5	1.2	5	0.5	5	1.2	2	0.5	5	1.2	5												
Myrtaceae	<i>Cleistanthus operculatus</i>	水翁																																																
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																																
Poaceae	<i>Phragmites karka</i>	卡爾蘆	1.7	10			1.7	10			1.7	10			1.5	10			1.5	10			1.5	10			1.5	10			1.5	10			1.5	10														
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華前毛蕨																																																
Equisetaceae	<i>Equisetum debile</i>	縮管草	0.3	5			0.3	5			0.3	5			0.3	5			0.3	5			0.3	5			0.3	5			0.3	5			0.3	5														
Asteraceae	<i>Ageratum conyzoides</i>	勝紅蕒		0.3	2			0.3	2			0.5	60	0.3	10	0.3	2			0.3	2			0.4	35	0.3	10	0.2	20	0.4	30	0.4	10	0.2	5	0.4	30	0.4	10											
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	10		0.5	60	0.3	10		0.5	60	0.3	10		0.5	35	0.3	10		0.5	35	0.3	10		0.4	40	0.4	10	0.2	20	0.4	30	0.4	10	0.2	5	0.4	30											
Solanaceae	<i>Solanum nigrum</i>	龍葵																																																
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																																																
Poaceae	<i>Eleusine indica</i>	牛筋草																																																
Poaceae	<i>Pennisetum purpureum</i>	象草																																																
Asteraceae	<i>Wedelia chinensis</i>	錦銀菊																																																
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	5		0.8	2	1	5		0.8	2	1	5		0.8	2	0.7	5		0.6	2	0.7	5		0.6	2	0.7	5		0.5	5	0.7	5		0.5	5	0.7	5											
Poaceae	<i>Panicum repens</i>	結骨草	0.6	5		0.6	5		0.6	5		0.6	5		0.4	5		0.4	5		0.4	5		0.4	5		0.4	5		0.4	5		0.4	5		0.4	5		0.4	5										
Poaceae	<i>Coxis lacryma-jobi</i>	薏苡																																																
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																																																
Cucurbitaceae	<i>Benincasa hispida</i>	冬瓜																																																
Fabaceae	<i>Pueraria lobata</i>	野葛																																																
Convolvulaceae	<i>Merremia hederacea</i>	魚黃草				4	10		4	10		4	10		2	7		2	7		2.5	20	2	30		2.5	5	2	20		2.5	5	2	20		2.5	5	2	20											
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																																																
Poaceae	<i>Brachiaria mutica</i>	巴拉草																																																
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香		0.3	4		0.3	4		0.3	4		0.3	2		0.3	5		1.2	50	0.5	15		1.2	30	0.5	15		1.2	2	0.5	15		1.2	2	0.5	15		1.2	2										
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花																																																
Cyperaceae	<i>Cyperus sp.</i>	莎草		0.2	6		0.2	6		0.2	6		0.2	3		0.2	5		0.2	5		0.2	5		0.2	5		0.2	5		0.2	5		0.2	5		0.2	2		0.2	2									
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙			1	5		1	5		1	5		1	3		1	3		1.7	5		1.7	5		1.7	5		1.7	5		1.7	5		1.7	5		1.7	5											
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.7	5			1.7	5			1.7	5			1.7	5			1.7	5			1.7	5			1.7	5		1.7	5		1.7	5		1.7	5		1.7	5										
Bare Ground				35		88		7		35		88		7		40		93		46		40		85		46		40		14		5		40		34		25		40		83		25		40		66		25

- Reference point was the sampling location outside the works area used to compare with the data within works area.
P1 - Point count location 1; P2 - Point count location 2

Table 4.2. Flora species recorded from belt transect survey at the Upper Tai Po stream (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Family	Species	Chinese name	Post construction monitoring																																									
			Aug-16						Sep-16						Oct-16						Nov-16						Dec-16						Jan-17						Feb-17					
			Reference	T1		T2		Reference	T1		T2		Reference	T1		T2		Reference	T1		T2		Reference	T1		T2		Reference	T1		T2		Reference	T1		T2								
Asteraceae	<i>Mikania micrantha</i>	蕨甘菊	0.6	5					0.5	10										0.5	10														0.5	10								
Moraceae	<i>Ficus hispida</i>	對葉榕																																	0.5	10								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																										
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.2	5					1.5	10																																		
Euphorbiaceae	<i>Macaranga tamaris</i>	血桐			1.5	10							1.5	10							1.5	10												1.5	10									
Araceae	<i>Alocasia odorata</i>	海芋							0.4	5										0.4	5														0.4	5								
Araceae	<i>Colocasia esculenta</i>	芋	0.5	5					0.5	5										0.5	5												0.5	5										
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																																	0.5	5								
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																										
Poaceae	<i>Phragmites karka</i>	卡爾蘆	1.5	5					1.6	5											1.6	5													1.6	5								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	攀南毛蕨																																										
Equisetaceae	<i>Equisetum debile</i>	蝦管草	0.3	5					0.5	5											0.5	5												0.5	5									
Asteraceae	<i>Ageratum conyzoides</i>	鵝紅菊																																										
Commelinaceae	<i>Commelina diffusa</i>	鵝腸草	0.4	5	0.3	5	0.4	5	0.4	10	0.4	10	0.4	10	0.5	10	0.3	10	0.3	10	0.5	10	0.1	10	0.1	10	0.5	10	0.2	10	0.2	10	0.5	10	0.3	10	0.2	10						
Solanaceae	<i>Solanum nigrum</i>	銀漿																																										
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																																										
Poaceae	<i>Eleusine indica</i>	牛筋草																																										
Poaceae	<i>Pennisetum purpureum</i>	象草																																										
Asteraceae	<i>Wedelia chinensis</i>	樹銀菊																																										
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.7	5		0.5	8	0.7	5			0.5	8	0.8	5			0.5	8	0.8	5			0.1	8	0.8	5			0.3	8	0.8	5		0.3	8								
Poaceae	<i>Panicum repens</i>	結草	0.4	5				0.4	5					0.4	5					0.4	5							0.4	5					0.4	5									
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																																										
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																																										
Cucurbitaceae	<i>Benincasa hispida</i>	冬瓜																																										
Fabaceae	<i>Pueraria lobata</i>	野葛																																										
Convolvulaceae	<i>Merremia hederacea</i>	魚腥草																																										
Poaceae	<i>Pennisetum alopecuroides</i>	鵝腸草			2	5																																						
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.2	2					1.2	5	1.3	5							1.2	5	1.3	5				0.1	5	0.1	5			0.3	5	0.3	5							
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																																										
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花																																										
Cyperaceae	<i>Cyperus sp.</i>	莎草																																										
Balsaminaceae	<i>Impatiens wulleriana</i>	非洲鳳仙																																										
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.7	5					1.5	5											1.5	5													1.5	5								
Bare Gound				55		93		72		35		85		62		35		85		62		35		85		62		35		85		62		35		85		62						

- Reference point was the sampling location outside the works area used to compare with the data within works area.

P1 - Point count location 1; P2 - Point count location 2

Table 4.2. Flora species recorded from belt transect survey at the Upper Tai Po stream (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring						Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Mar-17			Apr-17			May-17			Jun-17			Jul-17			Aug-17			Sep-17			Oct-17														
			Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2									
Asteraceae	<i>Mikania micrantha</i>	0.5	10				0.5	10				0.5	10				0.5	5				0.5	5				0.5	5				0.5	5					
Moraceae	<i>Ficus hispida</i>																																					
Ulmaceae	<i>Celtis sinensis</i>																																					
Poaceae	<i>Microstegium ciliatum</i>	1.6	10				1.6	10				1.7	10				1.7	5				1.7	5				1.7	5				1.7	5					
Euphorbiaceae	<i>Macaranga tamaris</i>			0.3	10							0.3	10																									
Araceae	<i>Alocasia odora</i>	0.5	5				0.5	5				0.6	5				0.6	5				0.6	5				0.6	5				0.6	5					
Araceae	<i>Colocasia esculenta</i>	0.5	5				0.5	5				0.6	5				0.6	5				0.6	5				0.6	5				0.6	5					
Myrtaceae	<i>Cleistocalyx operculatus</i>																																					
Athyriaceae	<i>Callipteris esculenta</i>																																					
Poaceae	<i>Phragmites karka</i>	1.6	5				1.6	5				1.7	5				1.7	5				1.7	5				1.7	5				1.7	5					
Thelypteridaceae	<i>Cyclosorus parasiticus</i>																																					
Equisetaceae	<i>Equisetum debile</i>	0.5	5				0.5	5				0.5	5				0.5	5				0.5	5				0.5	5				0.5	5					
Asteraceae	<i>Ageratum conyzoides</i>																																					
Commelinaceae	<i>Commelina diffusa</i>	0.6	10	0.5	10	0.3	10	0.6	10	0.5	10	0.3	10	0.6	10	0.5	10	0.3	10	0.6	5	0.5	10	0.3	5	0.6	5	0.5	10	0.3	5	0.6	5	0.5	10	0.3	5	
Solanaceae	<i>Solanum nigrum</i>																																					
Euphorbiaceae	<i>Mallotus paniculatus</i>																																					
Poaceae	<i>Eleusine indica</i>																																					
Poaceae	<i>Pennisetum purpureum</i>																																					
Asteraceae	<i>Wedelia chinensis</i>																																					
Asteraceae	<i>Bidens alba</i>	0.8	5			0.4	8	0.8	5			0.4	8	0.8	5			0.4	3	0.8	5			0.4	3	0.8	5			0.4	3	0.8	5			0.4	3	
Poaceae	<i>Panicum repens</i>	0.5	5				0.5	5				0.5	5				0.5	5				0.6	5			0.6	5			0.6	5			0.6	5			
Poaceae	<i>Coix lacryma-jobi</i>																																					
Convolvulaceae	<i>Ipomoea cairica</i>																																					
Cucurbitaceae	<i>Benincasa hispida</i>																																					
Fabaceae	<i>Pueraria lobata</i>																																					
Convolvulaceae	<i>Merremia hederacea</i>																																					
Poaceae	<i>Pennisetum alopecuroides</i>			0.3	10							0.3	10									0.3	10					0.4	10					0.4	10			
Poaceae	<i>Brachiaria mutica</i>		0.5	10	0.3	5			0.5	10	0.3	5			0.5	10	0.3	5			0.5	10	0.3	5			0.5	10	0.3	5			0.5	10	0.3	5		
Onagraceae	<i>Ludwigia erecta</i>																																					
Malvaceae	<i>Hibiscus rosa-sinensis</i>																																					
Cyperaceae	<i>Cyperus sp.</i>																																					
Balsaminaceae	<i>Impatiens walleriana</i>																																					
Amaranthaceae	<i>Celosia argentea</i>	1.5	5				1.5	5				1.5	5				1.5	5				1.5	5				1.5	5				1.5	5					
Bare Ground			35		80		57		35		80		57		35		80		57		50		80		72		50		80		72		50		80		72	

- Reference point was the sampling location outside the works area used to compare with the data within works area.

P1 - Point count location 1; P2 - Point count location 2

Table 4.2. Flora species recorded from belt transect survey at the Upper Tai Po stream (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

		Post construction monitoring						
		Stream	Nov-17					
		Transect	Reference		T1		T2	
Family	Species	Chinese name	Height (m)	%	Height (m)	%	Height (m)	%
Asteraceae	<i>Mikania micrantha</i>	蕨甘菊	0.6	5				
Moraceae	<i>Ficus hispida</i>	對葉榕						
Ulmaceae	<i>Celtis sinensis</i>	朴樹						
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.6	5				
Euphorbiaceae	<i>Macaranga tamaris</i>	血桐					0.7	5
Araceae	<i>Alocasia odora</i>	海芋	0.8	5				
Araceae	<i>Colocasia esculenta</i>	芋	0.8	5				
Myrtaceae	<i>Clitocalyx operculatus</i>	水翁						
Athyaceae	<i>Callipteris esculenta</i>	菜蕨						
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.6	5				
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	雜南毛蕨						
Equisetaceae	<i>Equisetum debile</i>	蝦管草	0.7	5				
Asteraceae	<i>Ageratum conyzoides</i>	聯紅菊						
Commelinaceae	<i>Commelina diffusa</i>	銀葉草	0.7	5	0.6	10	0.6	5
Solanaceae	<i>Solanum nigrum</i>	酸漿						
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸						
Poaceae	<i>Eleusine indica</i>	生路草						
Poaceae	<i>Pennisetum purpureum</i>	象草						
Asteraceae	<i>Wedelia chinensis</i>	樹蝦菊						
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.8	5			0.5	3
Poaceae	<i>Panicum repens</i>	結實草	0.6	5				
Poaceae	<i>Coix lacryma-jobi</i>	薏苡						
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍						
Cucurbitaceae	<i>Bemisia hispida</i>	冬瓜						
Fabaceae	<i>Pueraria lobata</i>	野葛						
Convolvulaceae	<i>Merremia hederacea</i>	魚腥草						
Poaceae	<i>Pennisetum alopecuroides</i>	狗尾草					0.5	10
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.5	10	0.4	5
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香						
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花						
Cyperaceae	<i>Cyperus sp.</i>	莎草						
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙						
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.5	5				
Bare Ground				50		80		72

- Reference point was the sampling location outside the works area used to compare with the data within works area.

P1 - Point count location 1; P2 - Point count location 2

Table 4.3 Avifauna recorded along survey transects and at two selected point count locations for Upper Tai Po River. (T1- Upper stream section and T2- Lower stream section)

Common Name	Species name	Chinese name	Status	Rarity	Post construction monitoring																																			
					Feb-17						Mar-17						Apr-17						May-17						Jun-17						Jul-17					
					Abundance		T1		T2		Abundance		T1		T2		Abundance		T1		T2		Abundance		T1		T2		Abundance		T1		T2		Abundance		T1		T2	
Barn Swallow	<i>Hirundo rustica</i>	家燕	SV, SpM	C	+		3	+		5	+		6	+		4	+		3	+		6	+		4	+		3	+		6	+		4	+		3	+		6
Black -crown Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,WV, P	C																																				
Black Kite	<i>Milvus lineatus</i>	黑鷹	R, RC, Cap.586	C																																				
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	+	2	2	+	3	+		2	+	2	2	+	2	+	1	2	+	2	2	+	1	2	+	1	2	+	1	2	+	1	2	+	1	2		
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鸚	R	C	++	4	5	++	5	2	++	3	3	++	2	3	++	2	2	++	3	2	++	2	3	++	2	2	++	3	2	++	2	3	++	2	2	++	3	2
Chinese Hwamei	<i>Garrulus canorus</i>	畫眉	R	C																																				
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	+		1	+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1	
Common Blackbird	<i>Turdus merula</i>	烏鶇	WV, PM	C																																				
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	PM, WV	C																																				
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C	+			+			+																													
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&P	C				+																																
Common Snipe	<i>Gallinago gallinago</i>	扇尾沙雉	WV&P	C																																				
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫紉鶇	R	C	+	1	1	+	1	1	+		1	+		1	+		1	+		1	+		1	+		1	+		1	+		1	+		1	+		
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鸚	R	C	+++	8	7	+++	9	8	+++	5	6	+++	7	8	+++	9	2	+++	8	7	+++	7	8	+++	9	2	+++	8	7	+++	9	3	+++	8	2	+++	7	2
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	+			+	2	+		2	+	1	2	+			+	1	2	+			+	1	2	+			+	1	2	+			+	1		
Daurian redstart	<i>Phoenicurus aureus</i>	北紅尾鶇	WV	U																																				
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																																				
Eastern Buzzard	<i>Buteo japonicus</i>	普通鵟	WV, Cap.586	C	+																																			
Eurasian Tree Sparrow	<i>Passer montanus</i>	麻雀	R	C	++	3	3	++	3	2	++	5	4	++	3	2	++	5	1	++	3	4	++	3	2	++	5	1	++	3	4	++	5	2	++	4	3	++	4	3
Great Coucal	<i>Centropus sinensis</i>	褐翅鸚	R,VU	C	+			+	1	+			+			+			+			+			+			+			+			+			+			
Great Tit	<i>Parus major (commixtus)</i>	大山雀	R	C																																				
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	WV	U																																				
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶇	WV	C	+	1		+	1	+			+	1	+			+	1	+			+	1	+			+	1	+			+	1	+			+		
Japanese White Eye	<i>Zosterops japonica</i>	暗綠繡眼鳥	R	C	+		2	+																																
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	大鷹鶇	PM, SV	C																																				
Large-billed Crow	<i>Corvus macrorhynchos</i>	大嘴烏	R	C																																				
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	1	1	+	1	+		1	+	1	+		2	+	1	+		1	+	1	+	2	+	1	+	2	+	1	+	1	+	1	+	1	+	
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C	+			+			++			++			5	++		++			++			5	++			++			5	++			++			
Maggie	<i>Pica pica</i>	喜鵲	R	C																																				
Maggie Robin	<i>Copsychus saularis</i>	鶇鶇	R	C	+	2		+	2	2	+	1	1	+	1	1	+	2	1	+	2	2	+	1	1	+	2	1	+	2	1	+	2	2	+	1	2	+	1	
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鶇	WV	U																																				
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																																				
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鶇	R	C																																				
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C																																				
Scaly-breasted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C				+			++																													
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C																																				
Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>	朱背啄花鳥	R	C																																				
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鶇	WV	C																																				
Silver-eared Mesia	<i>Leiothrix argentea</i>	銀耳相思鳥	R	C																																				
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅鸚	R	C																																				
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	3	++	3	2	++	5	4	++	5	5	++	2	4	++	3	5	++	5	5	++	2	4	++	3	5	++	5	5	++	2	4	++	3	
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鶇	R	C																																				
White Wagtail	<i>Motacilla alba</i>	白鶇	WV, R	C	+	2	1	+	1	1	+		1	+	1	1	+	1	1	+	1	1	+	1	1	+	1	1	+	1	1	+	1	1	+	1	1	+	1	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C							+																													
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																																				
Yellow Bellid Primia	<i>Prinia flaviventris</i>	灰頭鸚	R	C																																				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇	WV&PM	C																																				
Number of birds						27	29		28	28		20	30		24	30		23	24		24	30		24	30		24	30		24	30		24	30		24	30			
No. of species						18	10																																	

Table 4.3 Avifauna recorded along survey transects and at two selected point count locations for Upper Tai Po River. (T1- Upper stream section and T2- Lower stream section)

					Nov-17	
					Abundance	
Common Name	Species name	Chinese name	Status	Rarity	T1	T2
Barn Swallow	<i>Hirundo rustica</i>	家燕	SV, SpM	C		
Black -crown Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,WV, P	C		
Black Kite	<i>Milvus lineatus</i>	鷹	R, RC, Cap.586	C		
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	2	1
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鵲	R	C	3	2
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R	C		
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	1	
Common Blackbird	<i>Turdus merula</i>	烏鶇	WV, PM	C		
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	PM, WV	C		
Common Koel	<i>Eudynamys scolopacea</i>	噪鶇	R	C		
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&P	C		
Common Snipe	<i>Gallinago gallinago</i>	扇尾沙雉	WV&P	C		
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C		1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鵲	R	C	8	5
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	2	2
Daurian redstart	<i>Phoenicurus auroreus</i>	北紅尾鶇	WV	U		
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C		
Eastern Buzzard	<i>Buteo japonicus</i>	普通鵟	WV, Cap.586	C		
Eurasian Tree Sparrow	<i>Passer montanus</i>	麻雀	R	C	5	2
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C		
Great Tit	<i>Parus major (commixtus)</i>	大山雀	R	C		
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	WV	U	1	
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶇	WV	C		1
Japanese White Eye	<i>Zosterops japonica</i>	暗綠繡眼鳥	R	C		
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	大鷹鶇	PM, SV	C		
Large-billed Crow	<i>Corvus macrorhynchos</i>	大嘴烏鶇	R	C		
Little Egret	<i>Egretta garzetta</i>	小白鶇	R, RC	C	1	
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C		
Maggie	<i>Pica pica</i>	喜鵲	R	C		
Maggie Robin	<i>Copsychus saularis</i>	鶇	R	C	2	1
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鶇	WV	C		
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鶇	SV	U		
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鶇	R	C		
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C		
Scaly-breasted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C		
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C		
Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>	朱背啄花鳥	R	C		
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鶇	WV	C		
Silver-eared Mesia	<i>Leiothrix argenteauris</i>	銀耳相思鳥	R	C		
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅鵲	R	C		
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	5	3
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鶇	R	C		
White Wagtail	<i>Motacilla alba</i>	白鶇	WV, R	C	2	2
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C		
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C		
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	灰頭鵲鶇	R	C		
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇	WV&PM	C		
Number of birds					32	20
No. of species					11	10

Note: R – Resident, WV – Winter visitor, Sv–Summer Visitor, PM – Passage migrant, C – Common, U – Uncommon. SpM – Spring migrant, C – transect count, P1 – Point count location 1; P2 – Point count location 2

Abundance indication: +, No. of indiv. 1 ~ 3; ++, No. of indiv. 4 ~ 10; +++, No. of indiv. >10;

Commonness and status were decided according to AFCD biodiversity website (www.hkbiobiodiversity.net)

All bird species are under protection of Wild Animals Protection Ordinance (Cap. 170)

Endangered Species of Animals and Plants Ordinance (Cap. 586)

RC : Regional concern Fellowes *et al* (2002)

LC : Local Concern Fellowes *et al* (2002)

PRC: Potential Regional onver Fellowes *et al* (2002)

CR: Rare in China Red Data Book Status

VU: Vulnerable in China Red Data Book Status

Table 4.4. Odonate species recorded at the Upper Tai Po River

Species	Common name	Chinese name	Status	Commonness	Baseline survey	Impact monitoring					Impact monitoring					Post construction monitoring																					
					Oct-07	Jan-09	Jul-09	Jan-10	Jul-10	Jan-11	Jul-11	Jan-12	Jul-12	Mar-13	Jul-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15					
<i>Aethriamanta brevipennis brevipennis</i>	Evasive Adjutant	短腹異蜻	NP	U																																	
<i>Macrodiplex cora</i>	Coastal Glider	高翔游蜻	NP	C																																	
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘蓋蜻	NP	VC															+	+														+	+		
<i>Copea marginipes</i>	Yellow Featherlegs	黃腹扇翅	NP	VC																															+	+	
<i>Crocthemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC	+																																
<i>Euphaea decorata</i>	Black-banded Gossamerwing	九帶幽蝶	NP	VC																																	
<i>Neurobasis chinensis</i>	Chinese Greenwing	華藍閃蝶	NP	C																																	
<i>Neurothemis fulvia</i>	Russet Pecher	翠藍閃蝶	NP	VC																																	
<i>Orthetrum chrysis</i>	Red-faced Skimmer	紅臉灰蜻	NP	VC																																	
<i>Orthetrum glaucum</i>	Common blue skimmer	藍尾灰蜻	NP	VC	+																																
<i>Orthetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC																																	
<i>Orthetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC																																	
<i>Palaepatra sexmaculata sexmaculata</i>	Asian Widow	六斑曲緣蜻	NP	C																																	
<i>Pantala flavescens</i>	Wandering Glider	游蜻	NP	VC	+																																
<i>Paracerion calamorum dveri</i>	Dusky Lilyquatter	蒼尾蝶	P, LC	C																																	
<i>Prodacnusa autumnalis</i>	Black Threadtail	烏齒頂蝶	NP	VC																																	
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蝶	NP	C																																	
<i>Rhinocypha perforata</i>	Common Blue Jewel	三斑藍蝶	NP	VC																																	
<i>Trithemis Aurora</i>	Crimson dropwing	曉得蝶	NP	VC	+																																
<i>Trithemis festiva</i>	Indigo Dropwing	靛得蝶	NP	VC																																	
<i>Urothemis signata signata</i>	Scarlet Basket	赤斑曲影蝶	NP	C																																	
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩紅蝶	P	P,PGC																																	
No of Species					4	2	4	1	6	1	5	1	5	1	4	2	1	3	4	4	2	5	7	8	9	6	2	2	1	3	6	7					

Note: NP – Not protected in Hong Kong P- Protected in Hong Kong

“VC” – Very Common; “UC” – Uncommon; “C” - Common

“+” – Species exists in the study area

“++” – Species common in the study area

“+++” – Species abundance in the study area

Commonness and status were decided according to AFCD biodiversity website (www.hkbiobiodiversity.net)

LC- Local Concern - Fellowes *et al* (2002)

PGC - Potential Global Concern - Fellowes *et al* (2002)

Table 4.5 Aquatic Macro invertebrates recorded at Upper Tai Po River (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Species	Chinese name	Sampling point	Post construction monitoring												Post construction monitoring														
			Dec-16			Jan-17			Feb-17			Mar-17			Apr-17			May-17			Jun-17			Jul-17			Aug-17		
			Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2
Mollusca																													
<i>Biomphalaria sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Brotia hainanensis</i>	--	NP VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	
<i>Melanioides tuberculata</i>	縮螺	NP VC	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	+	
<i>Physella acuta</i>	小笠原螺	NP VC	+			+			+			+			+			+			+			+			+		
<i>Pomacea canaliculata</i>	福寿螺	NP VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>	田螺	NP VC	+			+			+			+			+			+			+			+			+		
<i>Sinotia quadrata</i>	田螺	NP VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	
Insects																													
<i>Anisocentropus sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Arctonora sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Aulocodes sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Baetis sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Chironomus sp.</i>	孳孳虫	NP VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Ephemera sp.</i>		NP VC	+			+			+			+			+			+			+			+			+		
<i>Indobaetis sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Mnais sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
Odonate Larvae	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Orithotum sp.</i>	--	NP VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	
<i>Petia sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Rhaiphium sp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
<i>Tinididae spp.</i>	--	NP VC	+			+			+			+			+			+			+			+			+		
Crustacea																													
<i>Cardina cantonensis</i>	廣東赤蟹	NP VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	
<i>Cryptopotamon anacoluthon</i>	網刺溪蟹	NP C	+			+			+			+			+			+			+			+			+		
<i>Eriocheir japonica</i>	日本绒螯蟹	NP C	+			+			+			+			+			+			+			+			+		
<i>Macrobrachium hainanense</i>	海南沼蟹	NP VC	+			+			+			+			+			+			+			+			+		
No of Species			17	6	3	18	6	3	18	6	3	18	6	3	18	6	3	18	6	3	18	6	3	18	6	3	18	6	3

Note:

- *NP* - Not protected in Hong Kong
- *F* - Listed in Wild Animals Protection Ordinance (Cap. 170) and listed as "Near Threatened" in IUCN Red List Status
- *VC* - Very Common; *UC* - Uncommon; *C* - Common
- *+* - Species exists in the study area
- *++* - Species common in the study area
- *+++* - Species abundance in the study area
- Reference point was the sampling location outside the works area used to compare the with the data within works area.

Table 4.5 Aquatic Macro invertebrates recorded at Upper Tai Po River (T1- Upper stream sampling site and T2- Lower stream sampling site)

Species	Chinese name	Post construction monitoring										
		Sampling point		Sep-17			Oct-17			Nov-17		
		Reference	T1	T2	Reference	T1	T2	Reference	T1	T2		
Mollusca												
<i>Biomphalaria sp.</i>	--	NP	VC	+			+			+		
<i>Brotia hainanensis</i>	--	NP	VC	+	+		+	+		+	+	
<i>Melanoides tuberculata</i>	縮螺	NP	VC	+		+	+		+	+	+	
<i>Physella acuta</i>	小笠螺	NP	VC	+								
<i>Pomacea canaliculata</i>	福寿螺	NP	VC	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>	蓮白螺	NP	VC	+			+		+	+		
<i>Sinotia quadrata</i>	田螺	NP	VC	+	+		+	+	+	+		
Insects												
<i>Anisocentropus sp.</i>	--	NP	VC	+			+			+		
<i>Arctonora sp.</i>	--	NP	VC	+			+			+		
<i>Aulocodes sp.</i>	--	NP	VC									
<i>Baetis sp.</i>	--	NP	VC									
<i>Chironomus sp.</i>	孳幼虫	NP	VC	+	+	+	+	+	+	+	+	
<i>Ephemera sp.</i>		NP	VC									
<i>Indobaetis sp.</i>	--	NP	VC	+			+			+		
<i>Mnais sp.</i>	--	NP	VC	+			+			+		
Odonate Larvae	--	NP	VC	+			+			+		
<i>Orithtrium sp.</i>	--	NP	VC	+	+		+	+		+		
<i>Petia sp.</i>	--	NP	VC	+			+			+		
<i>Rhaiphium sp.</i>	--	NP	VC									
<i>Tinulidae spp.</i>	--	NP	VC									
Crustacea												
<i>Cardina cantonensis</i>	廣東赤螺	NP	VC	+	+		+	+		+	+	
<i>Cryptopotamon anacoluton</i>	網刺溪蟹	NP	C	+			+			+		
<i>Eriocheir japonica</i>	日本绒蟹	NP	C	+			+			+		
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+			+			+		
No of Species				18	6	3	18	6	3	18	6	3

Note:

- *NP* – Not protected in Hong Kong
- *F* - Listed in Wild Animals Protection Ordinance (Cap. 170) and listed as "Near Threatened" in IUCN Red List Status
- *VC* – Very Common; *UC* – Uncommon; *C* - Common
- *+* – Species exists in the study area
- *++* – Species common in the study area
- *+++* – Species abundance in the study area
- Reference point was the sampling location outside the works area used to compare the with the data within works area.

Table 4.6 Fish species and Hong Kong Newt recorded at Upper Tai Po River (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Species	Status	Commonness	Post construction monitoring												Post construction monitoring						Post construction monitoring			Post construction monitoring			Post construction monitoring										
			Mar-16			Apr-16			May-16			Jun-16			Jul-16			Aug-16			Sep-16			Oct-16			Nov-16			Dec-16			Jan-17				
			T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference		
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C																																		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+			+				+				+																						
<i>Glyptothorax pallozonum</i>	白線紋胸鮭	NP	R																																		
<i>Liniptaromaloptera disparis</i>	擬平鰲	NP	C				+				+				+																						
<i>Misgurnus anguillicaudatus</i>	泥鰌	NP	C																																		
<i>Oreochromis niloticus</i>	尼羅白鰱非鯽	NP	C				+				+				+																						
<i>Parazacco spilurus</i>	黑鰱	V and NP	C	+			+		+		+		+		+		+																				
<i>Poecilia reticulata</i>	孔雀花魚鱒	NP	C																																		
<i>Pseudobagrus trilineatus</i>	三線海鯽	NP,GC	R																																		
<i>Pseudogastromyzon myersi</i>	麥氏海鯽吸鰈	NP	C				+				+				+																						
<i>Pterocryptis cochinchinensis</i>	越南隱鱚鯰	NP	C				+				+				+																						
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+			+		+		+		+		+		+		+		+		+		+		+		+		+		+		+		
<i>Rhinogobius spp.</i>	鰻虎魚	NP	C	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Schistura fasciolata</i>	縵紋密鰻	NP	C				+				+				+																						
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C				+				+				+																						
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C																																		
	2x2m fish						20				5				40																						
	No of Speices						4				1				11																						
Amphibian																																					
<i>Parameotriton hongkongensis</i>	香港蠟螈	P	UC																																		

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong

"VC" – Very Common; "UC" – Uncommon; "C" - Common

"+" – Species exists in the study area

"++" – Species common in the study area

"+++" – Species abundance in the study area

V – Listed as vulnerable in China Fish Red Data Book

GC - Global Concern - Fellowes *et al* (2002)

- Reference point was the sampling location outside the works area used to compare with the data within works area.

Table 4.6 Fish species and Hong Kong Newt recorded at Upper Tai Po River (T1 - Upper stream sampling site and T2 - Lower stream sampling site)

Species	Status	Commonness	Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring						
			Feb-17			Mar-17			Apr-17			May-17			Jun-17			Jul-17			Aug-17			Sep-17			Oct-17			Nov-17			
			Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	Reference	T1	T2	
<i>Cyprinus carpio var. viridiviolaceus</i>	錦鯉	NP	C																														
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+			+			+			+			+			+			+			+			+					
<i>Glyptothorax pallozonum</i>	白線紋胸鮡	NP	R	+			+			+			+			+			+			+			+			+					
<i>Liparohaloptera disparis</i>	擬平鰲	NP	C	+			+			+			+			+			+			+			+			+					
<i>Misgurnus anguillicaudatus</i>	泥鰌	NP	C																														
<i>Oreochromis niloticus</i>	尼羅白鱔非鯽	NP	C	+			+			+			+			+			+			+			+			+					
<i>Parazacco spilurus</i>	黑鰱	V and	C	+			+			+			+			+			+			+			+			+					
<i>Poecilia reticulata</i>	孔雀花魚	NP	C																														
<i>Pseudobagrus trilineatus</i>	三線海鯽	NP,GC	R	+			+			+			+			+			+			+			+			+					
<i>Pseudogastromyzon myersi</i>	麥氏海鯽	NP	C	+			+			+			+			+			+			+			+			+					
<i>Pterocryptis cochinchinensis</i>	越南隱鱚	NP	C	+			+			+			+			+			+			+			+			+					
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+			+			+			+			+			+			+			+			+					
<i>Rhinogobius spp.</i>	鰻虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Schistura fasciolata</i>	縵紋海鯽	NP	C	+			+			+			+			+			+			+			+			+					
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+			+			+			+			+			+			+			+			+					
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C																														
		2x2m fish		45	2	2	45	2	2	40	2	2	30	2	2	20	2	2	15	1	1	20	1	1	25	1	1	25	1	1	25	1	1
		No of Speices		12	1	1	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1	12	1	1
Amphibian																																	
<i>Parameotriton hongkongensis</i>	香港蠟螈	P	UC																			+			+			+			+		

Note: NP - Not protected in Hong Kong; P - Protected in Hong Kong

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Table 4.7 Abiotic data for Upper Tai Po River (T1- Upper stream sampling site and T2- Lower stream sampline site)

Parameters/ Date	Post construction monitoring						
	-17	Sep-17		Oct-17		Nov-17	
Replicate	T2	T1	T2	T1	T2	T1	T2
DO (mg/L)	8.0	7.9	8.0	7.9	7.9	8.0	7.9
pH	7.8	7.7	7.8	7.7	7.8	7.7	7.7
Nitrate (mg N/L)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Ammonia (mg/L)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Salinity (ppt)	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (mS/cm)	25	18	23	23	28	28	30
BOD (mg/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Water flow at pool (m/s)	0.3	0.01-0.3		0.01-0.3		0.01-0.3	
Water flow at riffle (m/s)	0.6	0.3-0.6		0.3-0.6		0.3-0.6	
Sand (%)	0	0	0	0	0	0	0
Stone (%)	20	40	20	40	20	40	20
Mud (%)	0	0	0	0	0	0	0
Concrete(%)	80	60	80	60	80	60	80