

Issue No. : Issue 1
Issue Date : July 2018
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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. 48)**

Prepared By:

ALLIED ENVIRONMENTAL CONSULTANTS LTD.

For:

Drainage Services Department

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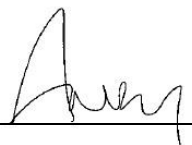
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**Agreement No. CE65/2013(EP)
Post-Construction Ecological Monitoring of River
Improvement Work in Upper Lam Tsuen River, She Shan
River and Upper Tai Po River – Investigation**

**Post-Construction Ecological Monitoring Report (No. 48)
Upper Lam Tsuen River**

December 2017



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9 January, 2018

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9 January, 2018

Ecology Team: China-Hong Kong Ecology Consultants

Post-Construction Ecological Monitoring Report (No. 48)

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 48 post-construction ecological monitoring report for the project conducted **on 27th of December 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 **27th of December 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 0.2m 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, 17 species of birds were recorded during the bird survey and 5 of the total were wetland dependent species including *Egretta garzetta* (Photo 4), *Ardeola bacchus*, *Alcedo atthis* (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, 2 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 keep 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 December 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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FIGURES

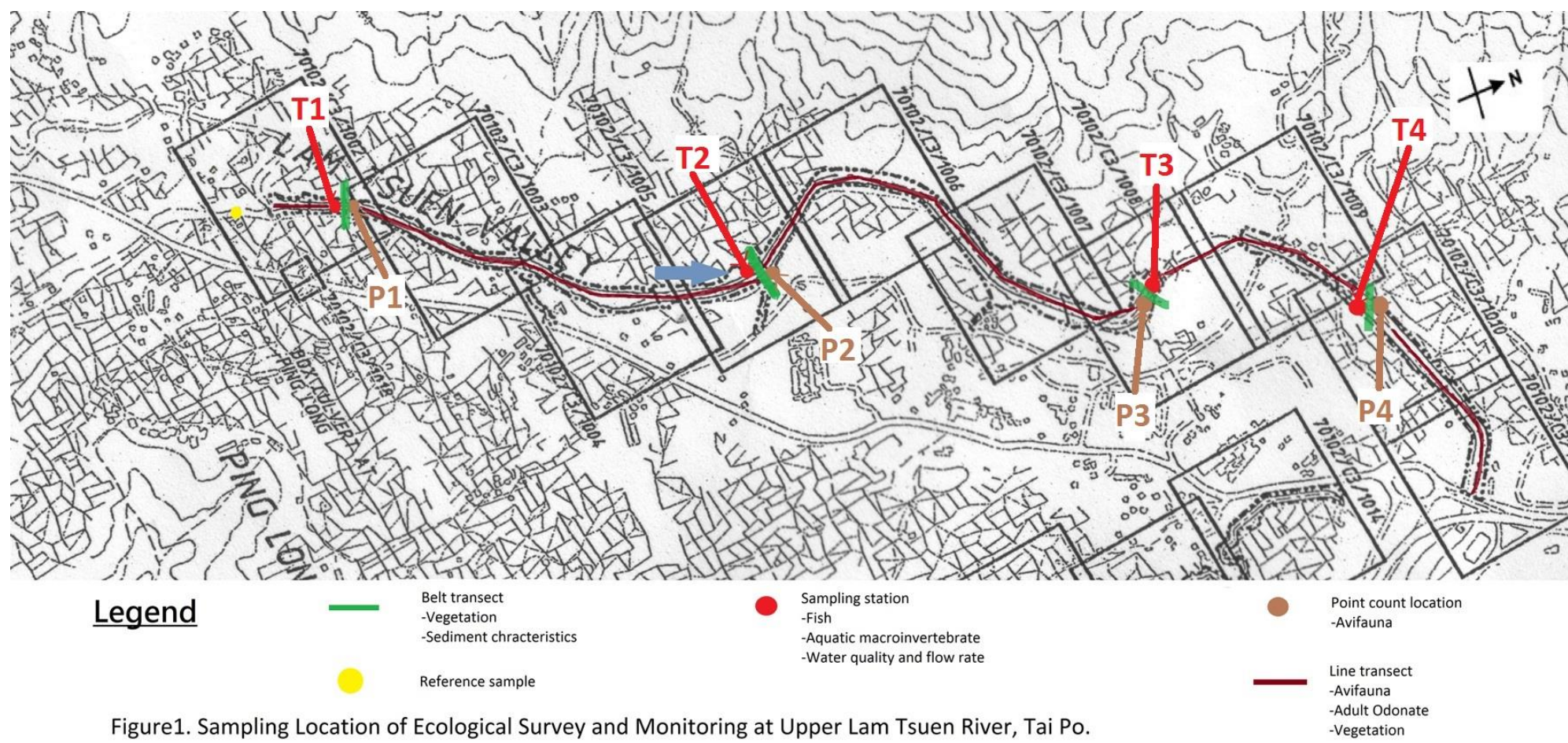


Figure1. Sampling Location of Ecological Survey and Monitoring at Upper Lam Tsuen River, Tai Po.

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 – *Alcedo atthis*



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	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
Riparian Plant																												
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																										
Sterculiaceae	<i>Sterculia lanceolata</i>	假蘋婆																										
Sterculiaceae	<i>Byttneria aspera</i>	刺果藤																										
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																										
Thelypteridaceae	<i>Macrothelypteris torresiana</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>	角花烏蘞莓	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
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	94	94	96	63	64

Note:

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

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

Family	Species name	Species name in Chinese	Baseline monitoring	Post Construction monitoring					Post Construction monitoring			Post Construction monitoring							
			Jul to Aug 08	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	May-16	Jun-16	Jul-16
Riparian Plant																			
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		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sterculiaceae	<i>Sterculia lanceolata</i>	假蘋婆														+	+	+	+
Sterculiaceae	<i>Byttneria aspera</i>	刺果藤																	
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thelypteridaceae	<i>Macrothelypteris torresiana</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	66	64	64	63	63	63	65	65	65	65	65	65	74	74	74	74

Note:

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

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

Family	Species name	Species name in Chinese	Baseline monitoring	Post Construction monitoring			Post Construction monitoring														Post Construction monitoring
			Jul to Aug 08	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	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
Riparian Plant																					
Ranunculaceae	<i>Ranunculus sceleratus</i>	石龍芮		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Rubiaceae	<i>Adina pilulifera</i>	水團花																			
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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		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sterculiaceae	<i>Sterculia lanceolata</i>	假蘋婆		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Sterculiaceae	<i>Byttneria aspera</i>	刺果藤																			
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Thelypteridaceae	<i>Macrothelypteris torresiana</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	74	75	75	75	75	75	75	75	75	75	75	75	75	75	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							
			Stream				Stream				Jan-09				Jan-09				Jul-09							
			Jul-08		Aug-08		Jan-09		Jan-09		T1		T2		T3		T4		T1		T2		T3		T4	
			P1	P4	P1	P4	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)	%	
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>	翅莢決明			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	1	40
Moraceae	<i>Ficus hispida</i>	對葉榕									1.5	5							1.5	5	4	5				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊									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							4	10							6	50
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												
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 Gound											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>	薇甘菊		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 Gound				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											
			Stream												Stream											
			Jul-11				Jul-11				Jul-11				Jan-12				Jan-12				Jan-12			
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	0.3	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>	翅莢決明																								
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>	薇甘菊	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	0.5	2
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 Gound				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							
			Stream				Stream				Stream				Stream				Stream							
			Aug-13				Dec-13				Jan-14															
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			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																								
Caesalpinaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.8	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	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 Gound				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								Post construction monitoring								Post construction monitoring							
			Stream		Feb-14				Mar-14				Apr-14				T1		T2		T3		T4			
			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)	%	Height(m)	%	Height(m)	%	Height(m)	%					
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																								
Fabaceae	<i>Pueraria lobata</i>	野葛							0.3	10																
Poaceae	<i>Pennisetum purpureum</i>	象草							1.5	5																
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>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							
			Stream																							
			May-14								Jun-14								Jul-14							
Transect	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	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>	翅莢決明																								
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>	苧麻																								
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							
			Stream				Aug-14				Sep-14				Oct-14				Nov-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	0.7	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									
Poaceae	<i>Pennisetum purpureum</i>	象草																																
Araceae	<i>Alocasia odora</i>	海芋																					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	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>	苧麻																																
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				
Bare Gound				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							
			Dec-14								Jan-15								Feb-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														0.6	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	
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
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
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		
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
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	
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
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Amaranthaceae	<i>Celosia argentea</i>	青葙					1.5	15																		
Bare Gound				25		20		15		40		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									
			Stream		Mar-15								Apr-15								May-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)	%	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						0.3	5					
Poaceae	<i>Pennisetum purpureum</i>	象草				3	15						3	15							2	15						
Araceae	<i>Alocasia odora</i>	海芋						1.8	1						1.8	1						0.8	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	20	1.2	20	1.4	20	1	10	1.1	20	1.2	20	1.4	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	0.4	10	0.4	15	0.3	5	0.3	20	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>	苧麻																										
Asteraceae	<i>Bidens alba</i>	白花鬼針草	1	10	0.7	15	1	15			1	10	0.7	15	1	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>	蟛蜞菊																										
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.5	10	0.4	20			0.3	20	0.5	10	0.4	20			0.3	20	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					0.3	10	0.2	15											
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香	2	30	2	10	2	5	2	5	2	30	2	10	2	5	2	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		20		20		30		19		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								Post construction monitoring									
			Stream		Jun-15								Jul-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)	%	Height(m)	%	Height(m)	%	Height(m)	%							
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹																										
Fabaceae	<i>Pueraria lobata</i>	野葛						0.3	5	0.5	10					0.4	5	0.5	10				0.4	5				
Poaceae	<i>Pennisetum purpureum</i>	象草				2	15																					
Araceae	<i>Alocasia odora</i>	海芋						0.8	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	0.9	15	1	18	0.8	20	1	10	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>	薇甘菊	0.3	5	0.4	10	0.3	5	0.3	10	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	0.8	5	0.7	10	0.8	15						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>	蟛蜞菊								0.3	20	0.2	10					0.4	20	0.2	10							
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.5	5	0.4	10			0.3	10	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	1.2	10	1.1	5	1.4	5	1.3	5																		
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 Gound				60		47		40		59		15		35		13		55		15		35		13	55			

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

(Continous) 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																							
			Sep-15								Oct-15								Nov-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	0.5	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>	翅英決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria 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>	苧麻																								
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 Gound				15		30		13		55		30		45		20		55		30		40		20	45	

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

(Continous) 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																							
			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>	翅英決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria 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>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	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

(Continous) 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)	%	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																																													
Caesalpiniaceae	<i>Cassia alata</i>	翅英決明																																													
Magnoliaceae	<i>Michelia alba</i>	白蘭																																													
Poaceae	<i>Brachiaria 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	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	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																																				
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																																			
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																															
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	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

(Continous) 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-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>	翅英決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria 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>	苧麻																								
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 Gound				54		60		60		65		54		70		65		70		51		65		60		65

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

(Continous) 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											
			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)	%	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	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>Brachiaria 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	25	0.5	25	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	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	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 Gound				43		50		45		60		43		50		45		65		43		50		45		65		43		50		45		65				

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

(Continous) 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												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
Caesalpiniaceae	<i>Cassia alata</i>	翅莢決明																								
Magnoliaceae	<i>Michelia alba</i>	白蘭																								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	0.5	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

(Continous) 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							
Stream	Transect	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	0.5	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>	翅荚决明																																				
Magnoliaceae	<i>Michelia alba</i>	白蘭																																				
Poaceae	<i>Brachiaria 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>	苧麻																																				
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>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		35		35		60		43		25		25		60		43		25		25		60												

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

(Continous) 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											
			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>	翅荚决明																																				
Magnoliaceae	<i>Michelia alba</i>	白蘭																																				
Poaceae	<i>Brachiaria 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 Gound				48		47		50		60		48		47		50		60		48		47		50		60												

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

(Continous) 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>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					0.5	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

(Contiuous) 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	Stream Transect Chinese name	Post construction monitoring							
			Dec-17							
			T1		T2		T3		T4	
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	
Poaceae	<i>Pennisetum purpureum</i>	象草								
Araceae	<i>Alocasia odora</i>	海芋	0.6	5	0.5	5		0.6	5	
Caesalpiniaceae	<i>Cassia alata</i>	翅英決明								
Magnoliaceae	<i>Michelia alba</i>	白蘭								
Poaceae	<i>Brachiaria mutica</i>	巴拉草	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	0.8	10	0.6	5
Musaceae	<i>Musa paradisiaca</i>	大蕉								
Ulmaceae	<i>Celtis sinensis</i>	朴樹								
Araceae	<i>Pistia stratiotes</i> L.	大漂								
Urticaceae	<i>Boehmeria nivea</i>	苧麻								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.6	8	0.7	5		
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	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						
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐								
Asteraceae	<i>Wedelia chinensis</i>	蟛蜞菊	0.4	5						
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.5	10	0.6	15	0.8	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		
Amaranthaceae	<i>Celosia argentea</i>	青葙					0.6	5		
Acanthaceae	<i>Dicliptera chinensis</i>	狗肝菜	0.3	5	0.3	5				
Bare Gound				48		42		50		55

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
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C	+		1																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																					
Rufous Turtle Dove	<i>Streptopelia orientalis</i>	山斑鳩	R	C										+		1									
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	+		1	1	+		1			+++		3	1	++	2		1	3	++	3	
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C															+		2			+	
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	+	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															+			1		+	
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C																					
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶇鶇	R	C	+			1	+													1		+	
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U										+		1	1							+	
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																					
Number of birds							19	12		20	13		6	5	14	12		9	14	13	17		50	14	
No. of species							18	12	8	19	9	5	24	3	4	8	5	23	5	7	9	11	23	9	6

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.hkbiobiodiversity.net)

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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					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	T1	T2	T3	T4
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																									
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C	+					+										+	1	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>	紅咀藍鵲	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		+					+					+									
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											+	1				+									
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	1	2	2	1	+3		2		1	+	1	2	1	1	+				12					
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	+1		1		2	+					+	1								
White-breasted Waterhen	<i>Anaouornis 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>	黃腹鶇鶇	R	C	+			1	1	+1		1		2	+			1		+									
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U						+																			
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																									
Number of birds						31	21	24	27		30	14	8	13		14	8	24	9		15	9	21	17					
No. of species					25	10	10	12	13	28	13	9	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

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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	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	
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																					
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C	+										++		3	2	3	++	2	1		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		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>	白喉紅野鶇	R	U	+			1																	
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	2	1	3		++	1	2	2		++	1	3	1	2	++	3	2	3	4	
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	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>	黃腹鶇鶇	R	C	+	1		1		+					+		1	1			+		1	2	1
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																					
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	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

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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					Jul-14				
					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
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																														
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鷄	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>	紅胸藍尾鶇	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			+					+			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 auratus</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	++	2	3	5	1
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	++					++					++		4			++					++									
Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	絨額鶇	R	C																														
White Wagtail	<i>Motacilla alba</i>	白鶇鶇	WV	C	++	1	2	3	2	++	1	2	2	1	++	1	2	1	2	+					+					++	1	2	3	1
White-breasted Waterhen	<i>Amaurornis phoeniceus</i>	白胸苦惡鳥	R	C	+					+			2		+			1	+			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>	黃腹鶇鶇	R	C	+			1	2	+		1	2	1	+	1	1	1		+		1	1	+	1	+	1	2	1	1				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																														
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	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		28	24	44	18
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

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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														
					Aug-14					Sep-14					Oct-14					Nov-14					Dec-14					Jan-15									
					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					
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		+			1		+	1		1		+		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					
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	++	1	2	4	2	++	3	2	4	3	++	4	2	3	2	++	3	3	5	3	+++	2	3	3	2	+++	2	3	5	2					
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	+			2		+			5		++	5		8		++		4	5		+++	5		7		++	5		8						
Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	絨額鶇	R	C																																			
White Wagtail	<i>Motacilla alba</i>	白鶇鶇	WV	C	++	2	1	2	2	++	3	2	3	4	++	2	1	2	1	++	1	2	1	2	++	1	1	2	1	++	1	2	3	2					
White-breasted Waterhen	<i>Amauromis phoenicurus</i>	白胸苦惡鳥	R	C	+		1	1		+		1	2	1	+			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>	黃腹鶇鶇	R	C	+	1	2	2	1	+	1	1	2	2	+	1		1		+		1	1	1	+	1		1											
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																																			
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																					+														
Number of birds						19	21	43	24		22	28	46	25		34	21	39	17		25	23	39	19		29	26	49	17		27	23	42	14					
No. of species						11	12	20	14		11	17	18	14		15	13	18	12		12	13	17	12		15	15	18	12		29	14	13	15					

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

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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					Post construction monitoring					
					Aug-15					Sep-15					Oct-15					Nov-15					Dec-15					Jan-16					
					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	C
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	++	3	2	4		++		3	2		++				5	++				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-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	++	4	3	3		++		3	3		++		2	3		++		2	3		++	5	3			++		4	4		
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		2	2	++	2	2	4	3	++			3	3	++			3	3	++			2	3	++	3	2	2		
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	+				1	+				1	+				2	+				2	+			1		+			1	1	
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C	+			1		+			1		+			2	+					2	+			1	+				1	1	
Common Koel	<i>Eudynamis scolopacea</i>	噪鶇	R	C																					+	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	2	2		++		1		1	++	2			2	++	2			2	++		2	1		++		2	2		
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	7	5	5	5	+++	3	6	5	20	+++	3	5	5	10	+++	3	5	5	10	+++	8	5	5	12	+++	6	4	6	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	++		2	4		++		2		3	++			3		++				3	++			2		++	2		1		
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC	U																															
Daurian redstart	<i>Phoenicurus auroreus</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	+	1	1			+			1		+					+					+					+					
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	3	2	2	3	++	4	4	2	2	++				7	++				7	++			3		++			2	4	
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	+				2																										
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶇	PM&WV	C																										+					
Grey Heron	<i>Ardea cinerea</i>	蒼鶇	WV,PRC	C																															
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶇鶇	WV	C	+	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	++	4	2	3	2	++	3	3	2	4	++			4		++			3		++			4	4	++			6	2	
Jungle Crow	<i>Corvus macrorhynchus</i>	大咀烏鴉	R	C																															
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鶇	SV	C																															
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鶇	R, VU	C																															
Little Egret	<i>Egretta garzetta</i>	小白鶇	R, RC	C	+		1		1	+		1		1	+	1		1		+				1	+			1	1	+		1		1	
Great Egret	<i>Ardea alba</i>	大白鶇	R,WV, RC	C																															
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R,SpM	C	+			4		+			3		++	5				++			5		++					++					
Magpie	<i>Pica pica</i>	喜鶇	R	C																															
Magpie Robin	<i>Copsychus saularis</i>	鶇鶇	R	C	++		2	2		++		2	2		++		2	2		++		2	2		++		2	1	+	++		1	1		
Mandarin Duck	<i>Aix galericulata</i>	鴛鴦	WV	U																															
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鶇	R	C	++			4	++				3							+								2							
Night Heron	<i>Nycticorax nycticorax</i>	夜鶇	R&WV, LC	C	+			1	+					1	+				2																

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					Post construction monitoring				
					Aug-15					Sep-15					Oct-15					Nov-15					Dec-15					Jan-16				
					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
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																														
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鵲	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>	紅咀藍鵲	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								+										+				
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭穗鵲	R	C																														
Scarlet Minivet	<i>Pericrocotus flammeus</i>	赤紅山椒鳥	R	C																														
Siberian Stonechat	<i>Saxicola maurus</i>	黑喉石鵲	WV	C											+		1			+		1	1		+		1	1		+		1		
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	U	+		1													+			3											
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	1	2	2	4	++	3	2	2		++	2	4	4	3	++	3	3	3	1	++	3	3		2	++	2		3	2
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																														
White Wagtail	<i>Motacilla alba</i>	白鶇鶇	WV	C	+++				8	+				2	+				2	+				2	++		1		2	++	1	1	1	2
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>	黃腹鶇鶇	R	C	+			1		+			1		+					+					+					+				
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																														
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																														
Number of birds						14	27	36	26		16	36	25	38		13	13	25	41		9	25	30	40		17	21	17	35		15	23	23	24
No. of species					23	10	14	14	11	21	6	13	11	10	23	5	5	7	13	27	4	9	10	13	24	4	10	8	11	24	6	10	10	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

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 over 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									
					Feb-16					Mar-16					Apr-16					May-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	C	T1	T2	T3	T4
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																									
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鵲	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>	紅咀藍鵲	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		
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																	
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	++	1	2	1	6	++	1	2	1	6	++	2	3	3	4	++	3	3	3	4					
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		+	1	1	1		+		1	1	2	+			1	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																									
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鷦鶯	R	C	+					+										+									
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																									
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶯	WV&PM	C																									
Number of birds						18	21	19	39		12	22	23	41		14	17	25	32		16	16	16	32		16	16	16	32
No. of species						22	10	11	9	12		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

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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				
					Jun-16					Jul-16					Aug-16					Sep-16					Oct-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
Northern Shoveler	<i>Anas clypeata</i>	琵嘴鴨	WV	C																									
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鵲	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>	紅臉藍尾鶇	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							+					+									
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	++	2	1	1	2	++	3	2	3	3	++	4	5	2	4	++	4	5	2	4	++	5		4	
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	+		1		1	+		1		1	+	2	1		
White-breasted Waterhen	<i>Anaouormis phoenicurus</i>	白胸苦惡鳥	R	C																									
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>	黃腹鶇鶇	R	C	+					+					+					+									
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	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		26	20	29	6
No. of species					22	4	10	10	7	19	4	7	11	10	19	5	12	10	10	20	6	14	9	7	19	9	9	11	3

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																								
					Nov-16					Dec-16					Jan-17					Feb-17					Mar-17				
					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																									
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-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	2	+	2	2	2	+		2	3	2	+		3		3	+		3		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	4	++	2	3	3	++		4	2	3	++		2	2	3	++		5	4	2		
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	+		1	1	+	1	1	1	+		1	1		+		3	1		+		2		2		
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																									
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	+++	7	8	2	2	+++	8	5	6	3	+++	5	8	6	5	+++	8	3	5	2	+++	8	7	6	1
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	3		+		5	3		+		2	5		+		2		2		
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC	U																									
Daurian redstart	<i>Phoenicurus auroreus</i>	北紅尾鶇	WV	C	+			1	+																				
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	3	3	3	++	5	3		2	++	4	3	2	2	++	5	4	2	5	++	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																				+					1
Grey Heron	<i>Ardea cinerea</i>	蒼鶇	WV,PRC	C										+															
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶇鶇	WV	C	+	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	+		3		+			2	3	+		3	3		+			2		+					
Jungle Crow	<i>Corvus macrorhynchus</i>	大咀烏鴉	R	C																									
Large Hawk Cuckoo	<i>Cuculus sparverioides</i>	鷹鶇	SV	C																				+					
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鶇	R, VU	C																									
Little Egret	<i>Egretta garzetta</i>	小白鶇	R, RC	C	+		1	1	+	1	1		+		5	2		+		6	3		+		3		1		
Great Egret	<i>Ardea alba</i>	大白鶇	R,WV, RC	C					+				+					+											
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>	鶇鶇	R	C	+	1	1	2	1	+		2	2	1	+	2	2		+	1	2	2	1	+	2	1	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									+		3			+		2									
Night Heron	<i>Nycticorax nycticorax</i>	夜鶇	R&WV, LC	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					
					Nov-16					Dec-16					Jan-17					Feb-17					Mar-17					
					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	
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					+										+											
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															+					1						
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C		++	3	3	3	2	++	5	4	3	2	++	2	4	3	5	++	5	2	3	2	++	6	2	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	2	1	+	1	1		1	+	1	1	1	+	2	1			+		1	1		
White-breasted Waterhen	<i>Amauromis 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>	黃腹鶇鶇	R	C					+																				+	
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																										
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																										
Number of birds							20	29	26	10		20	26	25	17		14	41	29	20		20	29	30	18		19	27	25	10
No. of species						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

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

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

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

PRC: Potential Regional over 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 Ri

(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				
					Apr-17					May-17					Jun-17					Jul-17					Aug-17				
					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
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鶇	R	C	+					+			3		+			2		+			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	+											+									+				
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	2	++	5	1	2	3	++	3	2	1	4	++	5	2	3	1	++	4	2	4	
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		1	+	1			1	+	1	1		1	+	1			
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+		2			+		1	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>	黃腹鶇鶇	R	C	+					+					+					+									
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																									
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																									
Number of birds						19	27	22	9		25	34	29	12		19	29	23	17		28	24	25	12		29	29	23	11
No. of species					22	6	12	9	5	20	6	14	10	8	18	6	9	11	9	19	11	11	11	9	20	8	11	9	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

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

(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				
					Sep-17					Oct-17					Nov-17					Dec-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
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C																				
Black Drongo	<i>Dicrurus macrocercus</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>	灰頭鵯	WV&PM	C																				
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		3	2		++		4	2		++	2		2		++		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	2	2		+	4	2	2	2	+	2	4		1	+		2	2	3
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R, RC	C	+	2	1	1		+	1	2	1		+		2	1	4	+		2	3	2
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	R	C						+		2			+		1			+				2
Common Koel	<i>Eudynamis 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	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	8	3	2	6	+++	8	5	4	3	+++	7	8	2	2	+++	5	6	8	3
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹	R, CR, Cap.5	U																				
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	++		2	3		++		3	3		++		4	2		++		2	2	1
Crested Serpent Eagle	<i>Spiormis cheela</i>	蛇鶇	R, VU, LC	U																				
Daurian redstart	<i>Phoenicurus auroreus</i>	北紅尾鶇	WV	C											+			1		+		1	1	
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	1	2	++	3	2	3	3	++	4	2	2	5	++	5	4	6	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																				
Grey Heron	<i>Ardea cinerea</i>	蒼鶇	WV, PRC	C																				
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶇鶇	WV	C	+		1	1		+		2	1		+		1	1		+			1	2
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+															+				
Jungle Crow	<i>Corvus macrorhynchus</i>	大咀烏鴉	R	C																				
Large Hawk Cuckoo	<i>Cuculus sparveroides</i>	鷹鶇	SV	C																				
Lesser Coucal	<i>Centropus bengalensis</i>	小鴉鶇	R, VU	C																				
Little Egret	<i>Egretta garzetta</i>	小白鶇	R, RC	C	+	2	1	2		+	1	2	1		+		1	1	2	+		1	1	3
Great Egret	<i>Ardea alba</i>	大白鶇	R, WV, RC	C																				
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C																				
Magpie	<i>Pica pica</i>	喜鶇	R	C																				
Magpie Robin	<i>Copsychus saularis</i>	鶇鶇	R	C	+		2	1		+		2	1		+	2	1	2	1	+	1	1		1
Mandarin Duck	<i>Aix galericulata</i>	鴛鴦	WV	U																				

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

(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					
					Sep-17					Oct-17					Nov-17					Dec-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	
Masked Laughing Thrush	<i>Garrulax perspicillatus</i>	黑臉噪鶇	R	C	+				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	+																				
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	++	3	2	5		++	5	2	3		++	2	4	3	1	++	5	4	2	2	
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			+		2	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 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>	黃腹鶇鶇	R	C																					
Yellow Wagtail	<i>Motacilla flava</i>	黃鶇鶇	WV&PM	U																					
Zitting cisticola	<i>Cisticola juncidis</i>	棕扇尾鶇	WV&PM	C																					
Number of birds						23	20	24	9		22	30	24	10		19	30	19	17		17	27	31	22	
No. of species					16	7	11	12	3	14	6	12	12	5	16	6	12	12	8	17	5	12	12	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

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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 Lam Tsuen River

Species name	Common name	Chinese name	Status	Commonness	Post construction monitoring								Post construction monitoring						
					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	
<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 Damselfly	黃紋長腹蟷	NP	VC															
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蟷	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	箭士渠春蟷	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>Paracercion calamorum duyeri</i>	Dusky Lilysquatter	蒼尾蟷	P, LC	C															
<i>Prodasinieura 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	三斑鼻蟷	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	彩紅蜻	P,PGC	VC															
No. of species					11	13	9	4	3	2	4	9	11	13	14	15	13	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											
					Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-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 auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蟷	NP	VC							+	+	+	+	+	+
<i>Coeliccia cyanomelas</i>	Blue Forest Damselfly	黃紋長腹蟷	NP	VC												
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蟷	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	箭士渠春蟷	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>Paracercion calamorum duyeri</i>	Dusky Lilysquatter	蕙尾蟷	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>Rhincocypha perforata perforata</i>	Common Blue Jewel	三斑島蟷	NP	VC									+	+	+	+
<i>Rhyothemis variegata arria</i>	Variegated Flutterer	斑羅翅蜻	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					7	2	3	1	3	7	11	14	14	13	13	10

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							
					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	Dec-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 Darter	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	赫尾蟌	P, LC	C														
<i>Prodasineura 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>Rhincocypha perforata perforata</i>	Common Blue Jewel	三斑島蟌	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					7	2	2	2	4	8	12	14	15	15	14	11	7	2

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

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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	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				Jul-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>Melanooides tuberculata</i>	瘤擬黑螺	NP	VC	+		+																															
<i>Pomacea canaliculata</i>	福果螺	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>	孿幼虫	NP	VC	+	+	+	+	+																													
<i>Electrogenes 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>Somamiathelphusa 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	16	4	1	1	2

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																				
				Nov-14				Dec-14				Jan-15				Feb-15				Mar-15				Apr-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>	福果螺	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>Electrogenes 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 anacoluton</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	14	15	14	12	13	12	12	13	11	13	11	11	13	12	11	12	12	11	11	11	13	13	12	12	11	9	12	15	12							

Note: NP – Not protected in Hong Kong; P - Protected in Hong Kong
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 +, 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									
				Nov-15				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	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>	福果螺	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>Electrogenes sp.</i>	--	NP	VC	+	+	+	+		+	+			+	+	+			+	+	+			+	+	+				
<i>Hydropsyche sp.</i>	--	NP	VC	+	+	+			+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Indobaetis sp.</i>	--	NP	VC	+	+	+		+				+				+					+						+		
<i>Mnais sp.</i>	--	NP	VC				+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Orhethrum 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>Somamiathelphusa zanklon</i>	束腰蟹	NP	VC																										
No. of species				11	9	11	13	13	12	10	11	13	13	12	10	11	13	13	12	10	11	13	13	12	10	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)

		Post construction monitoring					Post construction monitoring					Post construction monitoring						
		Apr-17					May-17					Jun-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 anacolutho</i>	鯉刺溪蟹	NP	VC				+	+				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+		+	+	+	+		+	+	+
<i>Somanniathelphusa zankloui</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 anacolutho</i>	鯉刺溪蟹	NP	VC				+	+				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+		+	+	+	+		+	+	+
<i>Somanniathelphusa zankloui</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				
				Oct-17					Nov-17					Dec-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 anacolutho</i>	鯉刺溪蟹	NP	VC				+	+				+	+				+	+
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+		+	+	+	+			+	+	+		+	+	+
<i>Somanniathelphusa zankloui</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 4.6 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	Commonnes	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						
Fish																																						
<i>Acrossocheilus parallens</i>	樹條光唇魚	P, PGC	R		+		+																															
<i>Channa maculate</i>	斑鱔	NP	C				+																															
<i>Cirrhina molitorella</i>	鯪魚	NP	C																																			
<i>Clarias fuscus</i>	胡子鯪	NP	C																																			
<i>Cyprinus carpio var. viridivittaceus</i>	錦鯉	NP	C																																			
<i>Gambusia affinis</i>	食蚊魚	NP	VC			+	+		+																													
<i>Limniphthaloptera disparis</i>	擬平鰈	NP	C																																			
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C		+		+																															
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C			+																																
<i>Parazacco spilurus</i>	異鱧	V and	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>	崩鯪	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>	寬鱧鰻	NP	C		+	++	+	++		+++	+++	+++	+++		++																							
2x2m fish counting	No. of fish			70	60	75	60	38	45	40	40	8	38	20	5	15	7	60	38	20	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	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	1	0	0	0	0	1	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 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 Treatedened in IUCN Red List Status

“PGC”-Potential Gola 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					Post construction monitoring										
				Jul-11					Jan-12					Jul-12					Aug-13					Dec-13					Jan-14										
				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	Reference	T1	T2	T3	T4						
Fish																																							
<i>Acrossocheilus parallens</i>	樹條光唇魚	P, PGC	R		+	+																																	
<i>Channa maculata</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. viridivittaceus</i>	錦鯉	NP	C																																				
<i>Gambusia affinis</i>	食蚊魚	NP	VC		+	+	+	+	+																														
<i>Limparhomaloptera disparis</i>	擬平鰾	NP	C																																				
<i>Misgurnus anguillicaudatus</i>	泥鰱	NP	C	+																																			
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C			+	+	+	+																														
<i>Parazacco spilurus</i>	異鱧	V and	C	+																																			
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC				+	+	+																														
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰾	NP	C	++		+																																	
<i>Pterocryptis cochinchinensis</i>	青鰱	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>	橫紋南鰾	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>	寬鱮鰱	NP	C	+	+	++	++	0	0																														
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	6	20	60	20	10						
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	14	10	13	11	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	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 arc
-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					Post construction monitoring									
				Feb-14					Mar-14					Apr-14					May-14					Jun-14									
				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 maculata</i>	斑鱔	NP	C																														
<i>Cirrhina molitorella</i>	鯪魚	NP	C																														
<i>Clarias fuscus</i>	胡子鯪	NP	C	+		+			+			+	+																				+
<i>Cyprinus carpio var. viridivittaceus</i>	錦鯉	NP	C			+						+																					
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Limparhomaloptera disparis</i>	擬平鰻	NP	C						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰻	NP	C	+		+			+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Parazacco spilurus</i>	異鰻	V and	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>	崩鯪	NP	C	+			+		+			+			+		+			+		+			+		+			+		+	
<i>Puntius semifasciolatus</i>	十星魚	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>	寬鱮鰻	NP	C	+	+	++	+++	++	+	+	++	+++	++	+	+	++	+++	++	+	+	++	+++	++	+	+	++	+++	++	+	+	++	+++	++
2x2m fish counting		No. of fish		16	40	70	40	30	60	70	80	90	80	40	50	60	60	50	20	30	30	20	20	6	12	10	6	8					
No. of species				14	10	15	11	7	15	11	16	14	11	11	12	16	14	12	13	13	13	12	11	10	12	13	11	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	1	1	1	1	1					

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

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

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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					Post construction monitoring				
				Jul-14					Aug-14					Sep-14					Oct-14					Nov-14				
				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																												
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R		+	++	++	+		++	++	++	+		++	++	++	+		++	++	++	+		++	++	++	+
<i>Channa maculata</i>	斑鱔	NP	C																									
<i>Cirrhina molitorella</i>	鯪魚	NP	C																									
<i>Clarias fuscus</i>	胡子鯪	NP	C					+																				
<i>Cyprinus carpio var. viridivittatus</i>	錦鯉	NP	C																									
<i>Gambusia affinis</i>	食蚊魚	NP	VC		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Limparhomaloptera disparis</i>	擬平鰻	NP	C		+	+	+			+	+	+			+	+	+	+			+	+	+			+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰻	NP	C		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Parazacco spilurus</i>	異鱧	V and	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>	崩鯪	NP	C		+			+		+	+	+			+	+	+	+			+	+	+			+	+	
<i>Puntius semifasciolatus</i>	十星魚	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>	寬鱧鰻	NP	C		+	+	+	+	+	+	++	++	+	+	+	++	++	+	+	+	+	+	+	+	+	+	+	
2x2m fish counting		No. of fish		8	16	15	5	10	10	12	18	10	12	20	30	30	20	20	30	40	40	30	30	50	70	70	60	60
No. of species				11	12	13	12	11	10	12	13	13	11	11	13	14	15	13	11	13	14	15	12	11	13	14	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	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 sampling site)

Species	Chinese name	Status	Sampling point	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									
				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>	樹條光唇魚	P, PGC	R		++	++	++	++		++	++	++	++		++	++	++	++		++	++	++	++		++	++	++	++		++	++	++	++
<i>Channa maculate</i>	斑鱔	NP	C																														
<i>Cirrhina molitorella</i>	鯪魚	NP	C																														
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+					+					+					+					+
<i>Cyprinus carpio var. viridivittatus</i>	錦鯉	NP	C																														
<i>Gambusia affinis</i>	金鯊魚	NP	VC		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Limparhomaloptera disparis</i>	擬平鰈	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰌	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Parazacco spilurus</i>	異鱔	V and	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	++	+	+		+	++	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰈	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Pterocryptis cochinchinensis</i>	背鰈	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Puntius semifasciolatus</i>	十星魚	NP	C		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++
<i>Rhinogobius spp.</i>	鰻虎魚	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>	寬鱮鰻	NP	C		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++
2x2m fish counting		No. of fish		60	60	60	50	50	50	60	60	60	60	50	60	60	60	40	50	60	60	60	40	40	50	55	50	40					
No. of species				11	13	14	14	11	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	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					Post construction monitoring									
				May-15					Jun-15					Jul-15					Aug-15					Sep-15									
				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>	斑鱔	NP	C				+					+					+					+					+					+	
<i>Cirrhina molitorella</i>	鯪魚	NP	C																														
<i>Clarias fuscus</i>	胡子鯪	NP	C				+					+					+					+					+					+	
<i>Cyprinus carpio var. viridivittaceus</i>	錦鯉	NP	C			+						+					+					+					+					+	
<i>Gambusia affinis</i>	食蚊魚	NP	VC		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Limparhomaloptera disparis</i>	擬平鰈	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+		+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C		+	+	+	+		+	++	+	+		+	++	++	++		+	++	++	++		+	++	++	++		+	++	++	++
<i>Parazacco spilurus</i>	異鱧	V and	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>	崩鯪	NP	C		+	+				+	+				+	+				+	+				+	+				+	+		
<i>Puntius semifasciolatus</i>	十星魚	NP	C		+	+	++	++		+	+	++	++		+	+	++	++		+	+	++	++		+	+	++	++		+	+	++	++
<i>Rhinogobius spp.</i>	鰻虎魚	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>	寬鱮鰻	NP	C		+	++	++	+		+	++	++	+		+	++	++	+		+	++	++	+		+	++	++	+		+	++	++	+
2x2m fish counting		No. of fish		20	30	30	20	20	20	30	30	20	20	12	15	18	8	7	15	12	16	10	10	18	15	20	15	15					
No. of species				13	12	14	12	13	12	13	13	13	12	12	12	13	13	12	12	12	13	13	12	12	10	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	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					Post construction monitoring					Post construction monitoring									
				Oct-15					Nov-15					Dec-15					Jan-16					Feb-16					Mar-16									
				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	Reference	T1	T2	T3	T4					
Fish			Commonnes																																			
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	+			+	+	+			+	+	++			+	+	++			+	+	++			+	+	++					
<i>Channa maculata</i>	斑鱔	NP	C					+					+					+					+					+					+					
<i>Cirrhina molitorella</i>	鯪魚	NP	C																																			
<i>Clarias fuscus</i>	胡子鯪	NP	C					+					+					+					+					+					+					
<i>Cyprinus carpio var. viridivittatus</i>	錦鯉	NP	C					+					+					+					+					+					+					
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					
<i>Limparhomaloptera disparis</i>	擬平鰼	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					
<i>Misgurnus anguillicaudatus</i>	泥鰍	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++	+	+	++	++	++					
<i>Parazacco spilurus</i>	異鱔	V and	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>	背鰍	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>	寬鱮鱮	NP	C	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+	+	+	++	++	+					
2x2m fish counting		No. of fish		25	20	22	18	20	40	35	40	35	40	55	40	45	45	40	60	50	50	50	40	65	55	55	55	40	60	60	60	55	40					
No. of species				12	10	13	13	12	12	10	13	13	12	12	10	13	12	12	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	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 arc

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

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

“NT” - Near Treatedened in IUCN Red List Status

“PGC”-Potential Gola 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					Post construction monitoring				
				Oct-16					Nov-16					Dec-16					Jan-17					Feb-17				
				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																												
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++				+	+	++														
<i>Channa maculata</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. viridivittaceus</i>	錦鯉	NP	C				+							+												+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC		+	+	+	+	+		+	+	+	+	+											+		
<i>Limparhomaloptera disparis</i>	擬平鰾	NP	C		+	+	+	+	+		+	+	+	+	+											+		
<i>Misgurnus anguillicaudatus</i>	泥鰾	NP	C		+	+	+	+	+		+	+	+	+	+											+		
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C		+	++	++	++	++		+	++	++	++	++											++		
<i>Parazacco spilurus</i>	異鰾	V and	C		+		+	+	+		+	+	+	+												+		
<i>Poecilia reticulata</i>	孔雀花魚將	NP	VC				+	+	+					+												+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰾	NP	C		+	+					+	+														+		
<i>Pterocryptis cochinchinensis</i>	青鰾	NP	C		+	+					+	+														+		
<i>Puntius semifasciolatus</i>	十星魚	NP	C		+	+	++	++	+		+	++	++	+												+		
<i>Rhinogobius spp.</i>	鰻虎魚	NP	C/UN/R		+	++	++	++	++		+	++	++	++	++											++		
<i>Schistura fasciolata</i>	橫紋南鰾	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>	寬鰾鰻	NP	C		+	+	++	++	++		+	++	++	++	++											++		
2x2m fish counting		No. of fish		25	25	25	20	20	30	30	30	30	25	45	40	40	35	35	50	45	45	35	35	55	50	50	40	40
No. of species				12	10	14	13	10	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	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
 -V – Listed as vulnerable in China Fish Red Data Book
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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)

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)

				Post construction monitoring				
				Mar-17				
			Sampling point	Reference	T1	T2	T3	T4
Species	Chinese name	Status	Commonnes					
Fish								
<i>Acrossocheilus parallens</i>	側條光唇魚	P, PGC	R			+	+	++
<i>Channa maculate</i>	斑鱔	NP	C					
<i>Cirrhina molitorella</i>	鯪魚	NP	C					
<i>Clarias fuscus</i>	胡子鯪	NP	C				+	
<i>Cyprinus carpio var. viridivittaceus</i>	錦鯉	NP	C			+		
<i>Gambusia affinis</i>	食蚊魚	NP	VC	+	+	+	+	+
<i>Limiparhomaloptera disparis</i>	擬平鰻	NP	C	+	+	+	+	
<i>Misgurnus anguillicaudatus</i>	泥鰻	NP	C	+	+	+	+	+
<i>Oreochromis niloticus</i>	尼羅口鯪非鯪	NP	C	+	+	++	++	++
<i>Parazacco spilurus</i>	異鱮	V and	C	+		+	+	+
<i>Poecilia reticulate</i>	孔雀花魚將	NP	VC			+	+	+
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰻	NP	C	+	+			
<i>Pterocryptis cochinchinensis</i>	青鰻	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>	寬鱮鱮	NP	C	+	+	++	++	++
2x2m fish counting		No. of fish		60	55	55	50	50
No. of species				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

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 arc

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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 Protection Ordinance (Cap.170)

“NT” - Near Treatedened in IUCN Red List Status

“PGC”-Potential Gopal 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 moliorella</i>	鯪魚	NP	C																
<i>Clarias fuscus</i>	胡子鯪	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>	異鰻	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>	黃鰻	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>	寬鰻鰻	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>	香港澤鯉	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				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>	胡子鯪	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>	異鰕	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>	黃鯪	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		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>	香港澤鯉	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

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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					Post construction monitoring						
				Oct-17					Nov-17					Dec-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 moliorella</i>	鯪魚	NP	C				+		++				+		++				+	++
<i>Clarias fuscus</i>	胡子鯪	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>	異鰻	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>	黃鰻	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>	寬鰻鱺	NP	C	+	+	++	++	++	++	+	+	++	++	++	++	++	++	++	++	++
2x2m fish counting		No. of fish		35	35	35	25	25	35	35	40	40	30	35	40	40	40	40	40	
No. of species				12	10	14	14	11	12	10	14	14	11	12	10	14	14	14	11	
Amphibian																				
<i>Paramesotriton hongkongensis</i>	香港澤鯉	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	1	

Note: NP – Not protected in Hong Kong

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

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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				Impact monitoring			
	8-Aug	Jan-09				Jul-09				Jan-10				Jul-10				Jan-11			
		T1	T2	T3	T4	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	9.6	9.5	9.5	9.1
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	7.1	7.2	7.2	7.1
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	0.1	0.2	0.4	0.5
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	0.05	0.07	0.07	0.1
Salinity (ppt)	<0.1	<0.1	0.1	0.1	0.1	0	0	0	0	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	90	87	93	120
BOD (mg/L)	<2	<2	<2	<2	3	<2	<2	<2	<2	<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				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				0.2-0.6			
Sand (%)	15	15	10	10	10	10	10	10	15	8	8	8	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	90	90	90	70
Mud (%)	5	5	2	2	2	2	2	2	5	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			
	Jul-11				Jan-12				Jul-12				Aug-13				Dec-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)	9.5	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	9.3	8.6	8.8	8.7
pH	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	6.2	6.9	7.1	7.1
Nitrate (mg N/L)	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	0.48	0.57	0.77	0.89
Ammonia (mg/L)	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	<0.01	<0.01	<0.01	<0.01
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)	93	90	90	100	92	84	96	110	41	38	73	86	67	77	74	75	62	64	90	110
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	10	15	10	10	10	10	10	10	10	10	10	10	5	5	5	5
Stone (%)	90	90	90	70	80	70	80	70	60	60	60	60	75	75	75	75	90	85	85	85
Mud (%)	2	2	2	5	10	15	10	20	30	30	30	30	15	15	15	15	5	10	10	10

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							
	Jan-14				Feb-14				Mar-14				Apr-14				May-14				Jun-14							
Replicate	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
DO (mg/L)	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	8.2	7.8	8.1	8.2	7.6	7.8	7.4	7.2	7.6	7.8	7.4	7.2
pH	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	7.7	7.8	7.9	8.2	7.6	7.8	7.8	8.1	7.6	7.8	7.8	8.1
Nitrate (mg N/L)	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	0.9	0.7	0.6	0.7	0.8	0.8	0.9	0.9	0.8	0.8	0.9	0.9
Ammonia (mg/L)	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	<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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.02	0.03	0.03	0.01	0.02	0.03	0.03	0.01	0.02	0.03	0.03
Conductivity (µS/cm)	72	78	88	108	78	87	118	119	120	123	125	123	96	114	120	122	82	80	72	66	39	58	69	70	39	58	69	70
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	<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				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				0.2-0.6							
Sand (%)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	10	5	5	5	10	5	5	5	10	5	5	5	10
Stone (%)	90	85	85	85	90	85	85	85	90	85	85	80	90	85	85	75	90	85	85	75	93	90	90	75	93	90	90	75
Mud (%)	5	10	10	10	5	10	10	10	5	10	10	15	5	10	10	15	5	10	10	15	2	5	5	15	2	5	5	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			
	Sep-16				Oct-16				Nov-16				Dec-16			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	8.0	8.1	8.1	8.0	7.9	7.9	8.0	8.0	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0
pH	7.7	7.6	7.6	7.7	7.7	7.7	7.6	7.7	7.6	7.7	7.6	7.7	7.6	7.7	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	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Conductivity (µS/cm)	33.0	34.0	39.0	43.0	29.0	32.0	34.0	45.0	28.0	31.0	31.0	32.0	32.0	32.0	34.0	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			
	Jan-17				Feb-17				Mar-17				Apr-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	7.6	7.6	7.6	7.6	7.6	7.7	7.6	7.7	7.6	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
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)	33.0	32.0	35.0	36.0	29.0	29.0	32.0	35.0	33.0	34.0	32.0	33.0	29.0	29.0	34.0	35.0
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			
	May-17				Jun-17				Jul-17				Aug-17			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	8.0	7.9	8.0	7.9	7.9	8.0	8.0	7.9	8.0	8.0	8.0	7.9	8.0	8.1	7.9	7.9
pH	7.8	7.7	7.6	7.7	7.6	7.7	7.6	7.7	7.8	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
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)	32.0	33.0	31.0	29.0	22.0	25.0	28.0	32.0	12.0	18.0	17.0	18.0	22.0	23.0	28.0	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				Post construction monitoring				Post construction monitoring			
	Sep-17				Oct-17				Nov-17				Dec-17			
Replicate	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
DO (mg/L)	8.0	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.8	7.8	7.9	7.8	7.9	7.9	7.9	7.8
pH	7.7	7.6	7.7	7.7	7.7	7.6	7.6	7.7	7.6	7.7	7.6	7.7	7.7	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)	23.0	23.0	25.0	32.0	22.0	23.0	25.0	28.0	23.0	25.0	28.0	32.0	23.0	25.0	27.0	30.0
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

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.48)
She Shan River

December 2017



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9 January, 2018

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9 January, 2018

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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.48) She Shan River

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FIGURES

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PHOTOS

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

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

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Photo 5 : Avifauna – *Motacilla alba*

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Photo 7 : Avifauna – *Egretta garzetta*

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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 48 post-construction ecological monitoring report for the project conducted **on 28th of December 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 28th of December 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 with slightly decrease ;
- 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, 18 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 *Ardeola bacchus* (Photo 4), *Motacilla alba* (Photo 5), *Motacilla cinerea* (Photo 6) and *Egretta garzetta* (Photo 7). An uncommon species, *Parus spilonotus*, was firstly recorded during surveys. 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 1 species was recorded in this month; this recorded species was common species in Hong Kong. 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 8). The river benthic fauna collected was mainly comprised of insects, mollusks and crustaceans (Photo 9). 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 8). 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. 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 with slightly decrease. 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

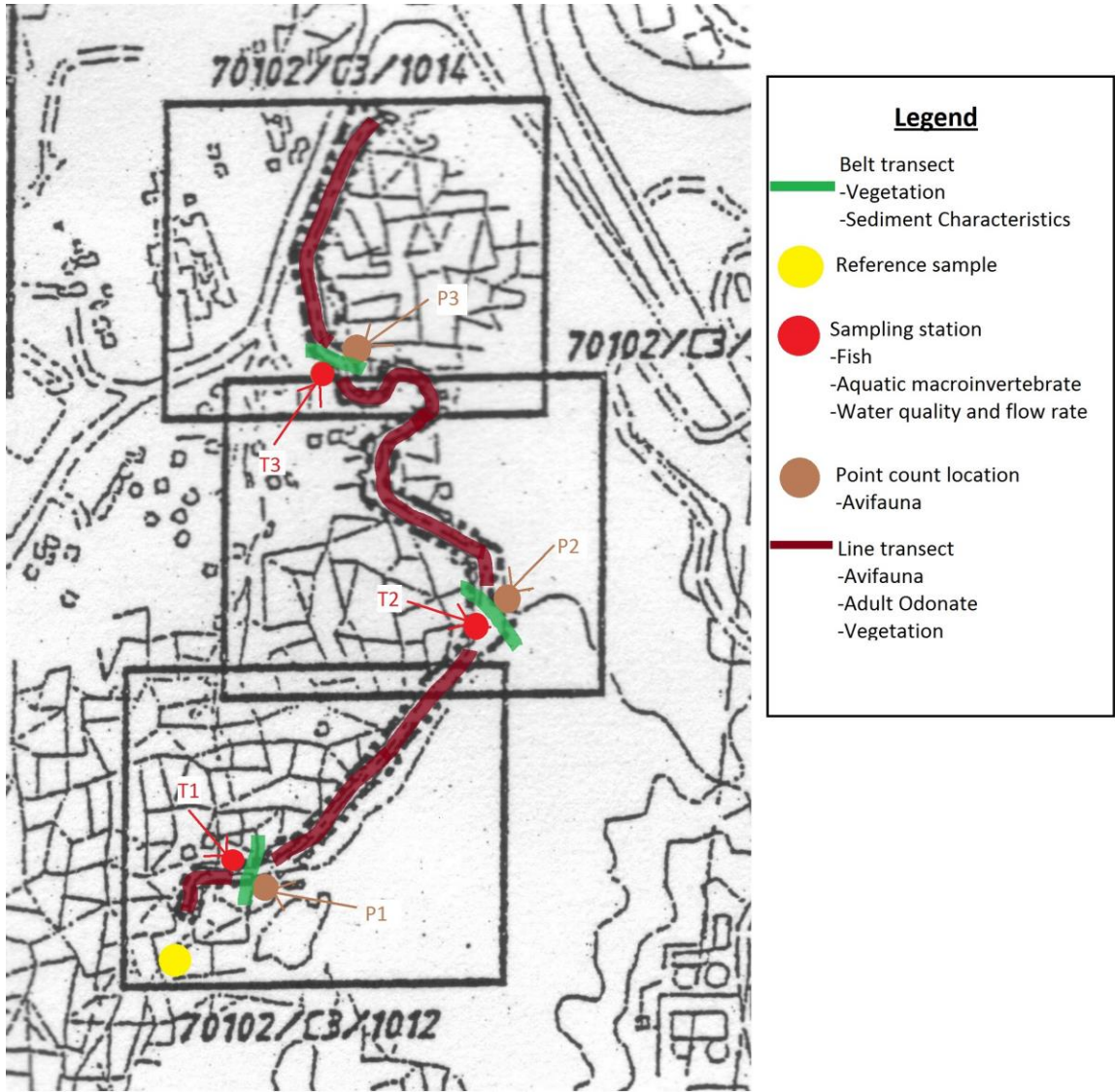


Figure 1. Sampling Location of Ecological Survey and Monitoring at She Shan River, Tai Po.

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 – *Ardeola bacchus*



Photo 5 : Avifauna – *Motacilla alba*



Photo 6: Avifauna – *Motacilla cinerea*



Photo 7: Avifauna – *Egretta garzetta*



Photo 8 : Kick Sampling



Photo 9 : 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					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	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14
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>Alocasia 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>	鴨腳木																						
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>Erechites hieracifolius</i>	梁子菜																	+	+	+	+	+	+
Asteraceae	<i>Youngia japonica</i>	黃鸝菜																	+	+	+	+	+	+
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>	三裂葉薊																						
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>	齊菜																	+	+	+	+	+	+
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	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	Jul-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	
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					48	54	54	54	57	46	23	36	36	36	40	41	51	54	67	69	69	73	74	74	74

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								
				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	
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					74	74	42	46	46	51	57	57	59	59	59	61	61	61	62	62	77

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							
				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	
Ulmaceae	<i>Trema orientalis</i>	異色山黃麻																	
Ulmaceae	<i>Trema tomentosum</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					77	77	77	77	77	80	80	80	80	80	78	78	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 4.1. Flora species recorded along the She Shan River including riparian habitat.

Family	Species name	Chinese name	Conservation Status	Post construction monitoring					
				Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
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>Alocasia 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>	鴨腳木		+	+	+	+	+	+
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>	黃鶉菜		+	+	+	+	+	+
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>	三裂葉絨蟻菊		++	++	++	++	++	++
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					
				Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
Caryophyllaceae	<i>Myosoton aquaticum</i>	鵝腸菜		+	+	+	+	+	+
Chenopodiaceae	<i>Chenopodium ficifolium</i>	小藜		+	+	+	+	+	+
Commelinaceae	<i>Commelina diffusa</i>	節節草		++	++	++	++	++	++
Convolvulaceae	<i>Pharbitis nil</i>	牽牛							
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍		+	+	+	+	+	+
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 sp.</i>								
Cyperaceae	<i>Cyperus involucratus</i>	風車草		+	+	+	+	+	+
Cyperaceae	<i>Mariscus cyperoides</i>	磚子苗		+	+	+	+	+	+
Cyperaceae	<i>Kyllinga polyphylla</i>	水蜈蚣		+	+	+	+	+	+
Dicksoniaceae	<i>Cibotium barometz</i>	金毛狗	Cap. 567, VU, CII	+	+	+	+	+	+
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐		+	+	+	+	+	+
Euphorbiaceae	<i>Aporosa dioica</i>	銀柴		+	+	+	+	+	+
Fabaceae	<i>Mucuna championii</i>	港油麻藤	EN	+	+	+	+	+	+
Fabaceae	<i>Pueraria lobata</i>	野葛		++	++	++	++	++	++
Fabaceae	<i>Sesbania cannabina</i>	田菁							
Lauraceae	<i>Cinnamomum burmannii</i>	陸香							
Lauraceae	<i>Litsea monopetala</i>	假柿樹		+	+	+	+	+	+
Lauraceae	<i>Machilus pauhoi</i>	刨花潤楠		+	+	+	+	+	+
Lygodiaceae	<i>Lygodium japonicum</i>	海金沙							
Magnoliaceae	<i>Michelia alba</i>	白蘭							
Malvaceae	<i>Urena lobata</i>	尚梵天花		+	+	+	+	+	+
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花		+	+	+	+	+	+
Mimosaceae	<i>Mimosa pudica</i>	含羞草							
Mimosaceae	<i>Leucaena leucocephala</i>	銀合歡		+	+	+	+	+	+
Mimosaceae	<i>Calliandra haematocephala</i>	紅絨球		+	+	+	+	+	+
Moraceae	<i>Broussonetia papyrifera</i>	構樹							
Moraceae	<i>Ficus hispida</i>	對葉榕		+	+	+	+	+	+
Moraceae	<i>Ficus pumila</i>	薜荔							
Moraceae	<i>Ficus variolosa</i>	變葉榕		+	+	+	+	+	+
Moraceae	<i>Ficus variegata</i>	青果榕		+	+	+	+	+	+
Musaceae	<i>Musa paradisiaca</i>	大蕉		+	+	+	+	+	+
Myrsinaceae	<i>Maesa perlaris</i>	鯽魚胆							
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁		+	+	+	+	+	+
Onagraceae	<i>Ludwigia hyssopifolia</i>	草龍		+	+	+	+	+	+

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

Family	Species name	Chinese name	Conservation Status	Post construction monitoring					
				Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
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 hedyotideae</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		+	+	+	+	+	+
Ulmaceae	<i>Celtis sinensis</i>	朴樹		+	+	+	+	+	+
Ulmaceae	<i>Celtis timorensis</i>	樟葉朴							

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

Family	Species name	Chinese name	Conservation Status	Post construction monitoring						
				Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	
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					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	Baseline monitoring						Impact monitoring																	
			Jul-08			Aug-08			Jan-09			Jul-09			Jan-10											
			P1	P3		P1	P3		T1	T2	T3	T1	T2	T3	T1	T2	T3									
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	0.3	60					
Poaceae	<i>Panicum repens</i>	結骨草	0.3	5									0.2	5			0.6	5							0.6	25
Asteraceae	<i>Mikania micrantha</i>	薇甘菊						0.2	7																0.2	5
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	1	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																			1.5	20				
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 involucreatus</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		15		70		##

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						Impact monitoring									
			Stream		Jul-10		Jan-11		Jul-11		Jan-12		T1		T2		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)	%	Height(m)	%	Height(m)	%	Height(m)	%	Height(m)	%	
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.5	50	0.5	50	0.2	45	0.2	10			0.2	5	0.8	40			0.3	25	0.3	40						
Poaceae	<i>Panicum repens</i>	結骨草						0.3	30					0.5	20															
Asteraceae	<i>Mikania micrantha</i>	薇甘菊				1	20	0.3	5					0.3	30						0.2	15								
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					1.5	15				1	45	0.8	5						
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	0.5	5								0.5	2					Channelised		1	5								Channelised	
Poaceae	<i>Pennisetum purpureum</i>	象草								1.5	20					1.5	15				2.5	5	2.5	25						
Poaceae	<i>Coix lacryma-jobi</i>	薏苡										1	1								2.5	2								
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	1	15															
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														1.5	20								1	15				
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			80		15		25	15		40		93	30		10		##			3		15						100		

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						Post construction monitoring					
			Jul-12		Jul-13		Jul-13		Dec-13		Dec-13		Dec-13		Jan-14		Jan-14		Jan-14							
			T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	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)	%	Height(m)	%						
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.3	2	0.3	30	0.3	20	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>	結骨草															0.2	1					0.2	1		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.2	2									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	30				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	10										0.3	1					0.3	1		
Poaceae	<i>Pennisetum purpureum</i>	象草	2.5	1	2.5	5			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				0.1	5																			
Poaceae	<i>Panicum maximum</i>	大黍																								
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															0.3	2					0.3	2		
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	15	1	10	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				93		20		50		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	Chinese name	Post construction monitoring									Post construction monitoring									Post construction monitoring									Post construction monitoring								
			Feb-14			Mar-14			Apr-14			May-14			Feb-14			Mar-14			Apr-14			May-14			Feb-14			Mar-14			Apr-14			May-14		
			T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3						
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							0.5	20												
Poaceae	<i>Panicum repens</i>	結骨草				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	0.3	10	0.3	10	0.3	10	0.3	1									
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜													0.3	20			0.3	5	0.3	5			0.3	5			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					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								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					1.5	40	1	40												
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																																				
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草												2	20								2	15														
Araceae	<i>Alocasia macrorrhizos</i>	海芋																0.8	1									0.8	1									
Lemnaceae	<i>Lemna minor</i>	浮萍																N.A	5								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							1	2										
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																																				
Bare Gound			5		5		91		5		5		90		0		5		84				30		25			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)

Family	Species	Chinese name	Post construction monitoring																					
			Jun-14				Jul-14				Aug-14				Sep-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		0.5	25				0.5	25				0.5	25			0.5	25					
Poaceae	<i>Panicum repens</i>	結骨草																						
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	10	0.3	10	0.3	1	0.3	10	0.3	2	0.3	12	0.3	12	0.3	5	0.3	12	0.3	5		
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜	0.3	5			0.3	5	0.3	2			0.3	2	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	1			0.3	5	0.8	2		0.3	5	0.8	5		0.5	5	0.8	5	
Poaceae	<i>Pennisetum purpureum</i>	象草																						
Poaceae	<i>Coix lacryma-jobi</i>	薏苡			0.8	1				0.8	1					1.2	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	45	1	45			1.5	45	1	45			1.5	50	1	50		1.5	50	1	50	
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨																						
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草	2	15				2	12					2	10					2	10			
Araceae	<i>Alocasia macrorrhizos</i>	海芋			0.8	1				0.8	1				0.8	1					0.8	1		
Lemnaceae	<i>Lemna minor</i>	浮萍			N.A	5				N.A	1				N.A	1					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	4				1	6					1	6		
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																						
Bare Gound			25		15		84		31		15		87		27		8		80		27		8	80

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						Post construction monitoring					
			Oct-14						Nov-14						Dec-14						Jan-15					
			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	1	10	1	50	0.1	2	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>	結骨草																								
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	1	15	0.3	2	0.3	5	1	15	0.3	2	0.3	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	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					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	65	1.8	20	1.5	5	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	15	3	5		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	3				1	1				1	1										
Cyperaceae	<i>Cyperus involucratus</i>	風車草			1.7	2				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	1.5	1			2	5					2	10
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍																								
Bare Gound				2		0		75		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									Post construction monitoring								
			Feb-15			Mar-15			Apr-15			May-15			Feb-15			Mar-15			Apr-15			May-15			Feb-15			Mar-15			Apr-15			May-15		
			T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3						
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	0.3	5	0.7	50	0.5	25												
Poaceae	<i>Panicum repens</i>	結骨草																																				
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			0.3	5	0.5	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																																				
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	1.5	40	1.2	5	1.2	15												
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		50		30										55					

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									Post construction monitoring								
			Jun-15			Jul-15			Aug-15			Sep-15			Jun-15			Jul-15			Aug-15			Sep-15			Jun-15			Jul-15			Aug-15			Sep-15		
			T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3						
Comelinaceae	<i>Commelina diffusa</i>	節節草	0.3	5	0.7	50	0.5	25			0.3	25			0.3	15			0.3	17																		
Poaceae	<i>Panicum repens</i>	結骨草																																				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.3	5	0.5	10			0.4	10	0.4	10			0.5	10	0.4	5			0.5	10	0.4	5														
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	0.9	15			0.5	2	0.9	15											0.5	2				
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	1.5	45	1.2	10	1.2	20	0.8	60	1	50	0.8	10	0.9	60	1	35	0.9	10	0.9	60	1	38	0.9	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					1.2	5			1.2	5					1.2	5																
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香					1.6	5					1.5	50			1.5	50																				
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍									0.3	5			0.3	5					0.3	5																
Bare Gound				45		25		50		13		10		38		13		40		38		13		35														

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									Post construction monitoring								
			Stream			Oct-15			Nov-15			Dec-15			Jan-16			Transect			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)	%				
Commelinaceae	<i>Commelina diffusa</i>	節節草				0.3	17		0.2	10					0.3	17		0.2	10					0.3	10		0.2	5					0.3	5		0.2	5	
Poaceae	<i>Panicum repens</i>	結骨草																																				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10		0.4	20					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								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					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	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 involucratus</i>	風車草				1.2	5		0.4	2					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										
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍				0.3	5																				0.3	5										
Bare Gound				28			43			72			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)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream		Feb-16		Mar-16		Apr-16		May-16		Jun-16		T1		T2		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)	%	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			0.3	5	0.2	8			0.3	5	0.2	8
Poaceae	<i>Panicum repens</i>	結骨草																														
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			0.5	10	0.5	8			0.5	10	0.5	8		
Brassicaceae	<i>Nasturtium officinale</i>	西洋菜			0.3	10					0.3	10					0.3	10					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	30					1	35				1	35					1	15					1	15					
Poaceae	<i>Pennisetum purpureum</i>	象草																														
Poaceae	<i>Coix lacryma-jobi</i>	薏苡	1	2					1	2				1	2					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	5	0.3	15	1	5	1	5	0.3	15	1	5	1	5	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	2			1.2	5	0.4	2			1.2	5	0.4	2			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					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					0.3	5				0.3	5			
Bare Gound				43		70		83		38		70		83		38		60		83		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	Chinese name	Post construction monitoring															
			Jul-16			Aug-16			Sep-16			Oct-16						
			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) %	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														1.4	15	
Amaranthaceae	<i>Aleranthera philoxeroides</i>	空心蓮子草	1	10				1	10							1.1	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	0.3	15	1	10	0.4	15
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 carnea</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		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	Chinese name	Post construction monitoring																	
			Nov-16			Dec-16			Jan-17			Feb-17								
			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)	%	Height(m)	%				
Poaceae	<i>Panicum repens</i>	枯骨草			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			0.6	10	0.5	15			0.1	10			0.2	10				
Fabaceae	<i>Pueraria lobata</i>	野葛													0.3	10				
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				
Poaceae	<i>Pennisetum purpureum</i>	象草	1.5	15																
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																		
Amaranthaceae	<i>Alternanthera philoxeroides</i>	空心蓮子草	1.1	10					0.1	10					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			0.6	15	0.6	20			0.1	15	0.1	20	0.2	15	0.2	20		
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.5	15	1	10	1	10	0.1	15	0.1	10	0.1	10	0.2	15	0.2	10		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																		
Araceae	<i>Alocasia macrorrhizos</i>	海芋													0.2	5	0.2	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 carnea</i>	五爪金龍			0.3	5	0.4	5			0.1	5	0.1	5	0.2	5	0.2	5		
Bare Gound					0.4	5					0.4	5			0.5	5				
					60		45		42			75		60		65		75	43	55

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	Chinese name	Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring														
			Mar-17			Apr-17			May-17			Jun-17														
			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)%	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	0.4	12			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		0.3	5			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>Aleranthera 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		0.6	25	0.6	25		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	0.3	15	0.3	15	0.4	15	0.3	15	0.3	15	0.4	10	0.3	10	0.3	15		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草																								
Araceae	<i>Alocasia macrorrhizos</i>	海芋		0.2	5	0.3	5		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		0.3	5	0.3	5				
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Convolvulaceae	<i>Ipomoea carnea</i>	五爪金龍		0.2	5	0.2	5		0.2	5	0.2	5		0.3	5	0.2	5		0.3	5	0.2	5				
Bare Gound				0.3	5				0.3	5				0.3	5				0.3	5						
				75		28		45		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	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream						Transect						Transect						Transect					
			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)	%	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			0.8	10	0.5	5			0.8	10	0.5	5			0.8	10	0.5	5		0.2	5	0.2	5	
Fabaceae	<i>Pueraria lobata</i>	野葛																								
Araceae	<i>Colocasia esculenta</i>	芋																								
Urticaceae	<i>Boehmeria nivea</i>	芋麻																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.7	5					0.8	5					0.8	5				0.2	5			
Poaceae	<i>Pennisetum purpureum</i>	象草																								
Poaceae	<i>Coix lacryma-jobi</i>	薏苡																								
Amaranthaceae	<i>Amaranthus philoxeroides</i>	空心蓮子草	0.6	5					0.6	5							0.6	5				0.2	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		0.2	5	0.2	5	
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	0.2	5	0.2	5	0.2	5
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				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				0.3	5	
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																								
Convolvulaceae	<i>Ipomoea carnea</i>	五爪金龍			0.4	5	0.3	5			0.4	5	0.3	5			0.5	5	0.4	5				0.4	5	
Bare Gound					0.3	5					0.3	5					0.3	5				0.2	5			
					85		30		40		85		30		40		85		30		40		90		80	70

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	Chinese name	Post construction monitoring						Post construction monitoring							
			Stream			Transect			Stream			Transect				
			Nov-17			Dec-17			Nov-17			Dec-17				
			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)	%
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								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			0.3	10	0.4	5		0.4	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			0.3	10				0.5	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	0.3	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			0.4	10	0.3	10		0.5	10	0.4	10			
Blechnaceae	<i>Blechnum orientale</i>	烏毛蕨	0.4	10	0.4	10	0.5	10	0.5	10	0.5	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 carnea</i>	五爪金龍					0.4	5						0.4	5	
Bare Gound					0.2	5				0.3	5					
					80		60		60		80		55		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	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				Jul-11				Jan-12				
					Abundance			Abundance			Abundance				Abundance				Abundance				Abundance				Abundance				Abundance								
C	P1	P3	C	P1	P3	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						+			1																										
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C																																			
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		1	1					
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	+	1		+	1	+		1	1	+	1	1	2	+		1	1	+		1	+	2	1	1	+	1		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																																			
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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																																			
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	3	4	+	1		2	+		1	+		1		+	2	2	3	+	1		1	+		1			
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	+		3	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												
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																																			
Number of birds						5	8		15	10		5	4	10	0	8	4	17	0	9	8	5	0	11	14	12	0	9	12	13	0	10	9	6	0	7	9	3	
No. of species						11	4	4	16	10	6	18	3	4	6	0	5	3	10	17	3	5	3	17	4	7	7	21	6	7	8	18	8	5	7	18	5	6	4

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	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>	池鶯	R,RC	C	+	1			+	1	2	1	+	1	2	2	+	1	3	2	+	1	2	3	+	1	3	2	+	1	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								+		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>	大白鶯	R,RC	C										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	C
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	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	++			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	2	+		1		+												
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																													
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	+	1			+				+				+				+				+								
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭德鵒	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>	黃腹鶺鴒	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

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

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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				Post construction monitoring			
					May-14				Jun-14				Jul-14				Aug-14				Sep-14				Oct-14			
					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	++	3	4	4	+	2		1																
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		1	+	2	1	2	+	2		2	+	1	2	2	+	2		1
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	+				+				1	+				2	+	2			3	+			2	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶯	R,RC	C	+	1	1		+	1	2		+	2	2	1	++	1	2	2	++	2	1	1	++	2	2	
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	2	1	+		1		+	1	1	1	+	1	1	+	1	2	1	+		1	1	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	++	2		4	++	3	2	3	++	2	4	5	++	3	2	4	++	2	4	3	++	3	1	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	+		3	2	+	2	2	3	+		3	2	+		2	4
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		
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	+	2			+		2	1	+	2		1	+		3	2	+	3	2	+		2	3	
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C																								
Great Coucal	<i>Centropus sinensis</i>	褐翅鷓鴣	R,VU	C	+				+					+				1		+	1			+		1		
Great Egret	<i>Ardea alba</i>	大白鷺	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							
					May-14				Jun-14				Jul-14				Aug-14				Sep-14				Oct-14			
					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	2	1	+				+		1	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	+	1	2	1
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	+	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																								
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	+			+				1	+		1		+		1		+		1		+		1	
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭德鵒	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	++	4	2	3
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	++		8						+		2		+		3		+		6		+		7	
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	+	2	2	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	+	1	1	1	+		1	1	+	1	1	1	+	1	1		+	1	2	1	+	1	1	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		19	24	23
No. of species					27	9	10	10	23	8	11	10	20	12	14	14	20	13	17	15	23	17	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

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 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			
					Nov-14				Dec-14				Jan-15				Feb-15				Mar-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																	+	1	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-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	+		2		+	2			+		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	+	1		3	+		2	2	+	1		3	+	1		2	++	2		3
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	++	1			+	R,RC	1		++	1	2	2	++	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	+																+		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		++	2	1	1	+	1	1		+	1	1	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	++	2	1	3	+++	2	3	2	+++	3	2	4	+++	2	2	4	+++	3	1	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	+	3	2		+	1			+		3		+		2		++		2	3
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	2	1	++		1		+		1	
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	+		2		+++		5	3	+++	2	4	3	+++		3	2	++	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	+				+				+		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				
					Nov-14				Dec-14				Jan-15				Feb-15				Mar-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	2	+	1	2	1	+		1	1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+				+			3	+			4	+			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	+	1	2	2	+	2	1	1	+	1	2	1	+	2	1	1	+	1	1	2	
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	1	1	1	+		1		+	1	1	2	+	1		1	++	1	2	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																					
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	+	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	3	4	+	1	2	2	+	2	3	4	++	2	3	3	++	3	3	1	
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	+	6	5		+	5			+		5		+								
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	2	2	++	1	2	2	++	1	2	2	++	1	2	2	+		1	2	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+								+				+		1		+		1		
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶺鴒	R	C	+		1	1													+	1	1		
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																					
Number of birds						21	20	20		15	19	15		15	16	17		12	19	21		12	19	21	
No. of species						23	19	17	16	21	9	11	7	24	10	13	14	25	9	12	10	26	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

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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			
					Apr-15				May-15				Jun-15				Jul-15				Aug-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	++		2	2	++	2		2	++	2		2	++		2	2	++	4		
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																	
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	2	++	2	2	2	++	1		2	++	2		2	++		3	
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C	+		1		+		2		+		2							+		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																				
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	++	1		2	++	2		2	++	3	1	2	++	2	2	2	++		2	2
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	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	+		1		+		1		+		1	1								
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶇	WV&PM	C													+			1	+			1
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+	1		1	+	1		1	+	1	1	1	+	2	2		++	2	2	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	3	2	3	+++	4	3	3	+++	5	4	4	+++	5	5	7	+++	3	3	8
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	++		1	3	++		2	3	++	3	2	3	++	2	2	1	++			3
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U																	+			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	
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	2	2	2	++	3	2	2	++	2	3	3	++	3	3	3	++		2	4
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C	+			2													+			2
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C	+		1		+		1										+			1
Great Egret	<i>Ardea alba</i>	大白鷺	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																				

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					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
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+			3	+		2	3	+		3	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	+	1		1	+	1		1	+			1	+			1
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	1	2	1	+	2	2	1	+	1	2	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	
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	+			1	+			1	+		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									+			1								
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	3	1	2	++	2	2	2	++	2	2	2	++	3	3	4	++	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	+		1	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									
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	黃腹鶺鴒	R	C	+		1		+		1		+		1	1	+		1	1	+		1	
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																				
Number of birds						12	21	29		20	24	25		24	24	34		21	24	33		17	31	23
No. of species					28	8	18	18	24	11	15	14	25	11	13	18	19	10	12	15	25	8	19	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.hkbiodiversity.net)

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

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

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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 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			
					Sep-15				Oct-15				Nov-15				Dec-15				Jan-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
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U													+		1					
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	++			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																	+			2
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	2	++		3		+			1	+				+			
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇	R	C	+		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																	++			6
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																				
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	+		3		++	3	3		++		3	2	++		3	2	++	2	2	4
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶺	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		+		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	2		++				++		1	1	+				+	1	2	
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	5	9	5	+++	5	5	7	+++	7	3	4	+++	7	6	7	+++	3	12	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		+		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	++		3	3	+++		6	3	++		3	4	++		6	5	++	3	4	6
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	叉尾太陽鳥	R	C	+		1														+			
Great Coucal	<i>Centropus sinensis</i>	褐翅鴉鶇	R,VU	C																	+		1	
Great Egret	<i>Ardea alba</i>	大白鶺	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				
					Sep-15				Oct-15				Nov-15				Dec-15				Jan-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									+			1									
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+			1	+	1			+	1			+	1		1	+			1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+	3	3										++		5	3	++		7	6	
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			
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		2	2	+	1	2		+	1	2	1	+		2		+		2	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	+		3																		
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	+			1	+	1		1	+			1	+				+			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	++	3	3	4	++	3	5	5	++		2	5	++		3	4	++	3	1	4	
Spotted Munia	<i>Lonchura punctulata</i>	斑文鳥	R	C	+			3	+		4		++		5										
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	+			3	+		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>	黃腹鶺鴒	R	C	+		1		+				+				+				+				
Yellow Bittern	<i>Ixobrychus sinensis</i>	黃葦鶺鴒	WV, PM, LC	U																					
Number of birds						14	37	29		15	35	21		10	25	24		10	27	34		14	42	32	
No. of species						24	6	16	11	21	7	12	7	20	4	11	13	21	4	8	12	27	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

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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				Post construction monitoring			
					Feb-16				Mar-16				Apr-16				May-16				Jun-16				Jul-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	+		1																					
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	+	3			+	2	2	2	+			2	+			++		2	2	++			3	
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		++		5		++		7		++		6		++		5					
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																								
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	3	3	4	++	2	7		++	2	3	3	++	3	2	3	++	2	2	4	++	3	3	3
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	+		2	1	+		1	1	+		1	1	+		1	1	+		1	1	+		1	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	2	15	3	+++	5	20	2	+++	7	15	3	+++	7	15	7	+++	5	10	8	+++	7	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	+				+	3			+		3	+		2		+			2	+		3	3	
Crested Serpent Eagle	<i>Spilornis cheela</i>	蛇鶇	R, VU, LC, Cap 586	U					+		1																	
Domestic pigeon	<i>Columba sp.</i>	鴿	R	C																								
Dusky Warbler	<i>Phylloscopus fuscatus</i>	褐柳鶇	WV	C	+		3		+				+						+					+				
Eurasian tree sparrow	<i>Passer montanus</i>	麻雀	R	C	++	4		5	++				++	3		++	3	4	2	++	3	3	3	++	5	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	+		3		+																			
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	

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				Post construction monitoring				
					Feb-16				Mar-16				Apr-16				May-16				Jun-16				Jul-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	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		1	+	1		1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++	3		4	++		4	2	++	3	3		++	2		2	++			2	++		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	
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+		2	2	+		1	1	+		2		+	1	1	1	+		2	1	+	2	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																									
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	+		1																						
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	+				+											+					+				
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	5	++	3	3	4	++	4	4	2	++	4		4	++	3	2	3	++	4	2	5	
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		
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C									+	1															
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						22	34	28		19	44	12		22	36	18		21	31	24		14	28	31		26	26	25	
No. of species						27	9	9	9	25	9	9	6	22	8	8	10	19	7	7	11	21	5	9	14	21	6	10	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

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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				Post construction monitoring			
					Aug-16				Sep-16				Oct-16				Nov-16				Dec-16				Jan-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
Ashy Drongo	<i>Dicrurus leucophaeus</i>	灰卷尾	SWV, LC	U																								
Barn Swallow	<i>Hirundo rustica</i>	家燕	PM	C	++	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					+																			
Black-necked Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	++		2	1	++	2			++	3			++	2	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																								
Chinese Blackbird	<i>Turdus mandarinus</i>	烏鶇	WV	C																					+			
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	2	1	4	++	3	4		++	2	3	2	++	3		2	++	2	3	2	++	3	1	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶺鴒	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	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	9	8	6	+++	9	8	6	+++	7	6	2	+++	8	5	2	+++	12	8	5	+++	3	10	6
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	++		2	2	++			4	++	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	3	2	++	4	4	3	++	3	3	4	++	3	3	4	++	5	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>	大白鶺鴒	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									

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				Post construction monitoring				
					Aug-16				Sep-16				Oct-16				Nov-16				Dec-16				Jan-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	C
Grey Heron	<i>Ardea cinerea</i>	蒼鷺	WV,PRC	C																									
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒	WV	C	+	2	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	++		4		++		3	3	++			2	++		2	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	1	+		1	1	+	1	1	1	+		2	2	+		2	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									+																
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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	3	4	++	4	2	4	++	3	3	4	++	4	2	2	++	5	3	3	++	2	2	3	
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		+	2	1		+	2	1		
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>	黃葦鶺鴒	WV, PM, LC	U																						+			
Number of birds						26	26	21		26	27	19		21	23	19		21	21	21		25	28	23		15	28	18	
No. of species						23	9	10	9	21	8	10	8	21	7	9	10	21	7	11	12	19	6	10	9	23	6	12	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.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

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				Post construction monitoring			
					Feb-17				Mar-17				Apr-17				May-17				Jun-17				Jul-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		+							
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	++		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	+	1	1	1	+	2		2	+	1	1	2	+		1	1	+		2	1	+	1	2	1
Night Heron	<i>Nycticorax nycticorax</i>	夜鷺	R,LC	C															+		2	1						
Olive Backed Pipit	<i>Anthus hodgsoni</i>	樹鶺鴒	WV	C																								
Oriental Dollarbird	<i>Eurystomus orientalis</i>	三寶鳥	PM	U																								
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	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>	紅頭德鵒	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	++		5	4	++		4	2	++	2	3	2	++	5	2	1	++	6	2	3
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
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C					+				+		4		+		2									
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						20	29	20		17	32	23		9	34	21		10	26	11		21	31	16		17	39	16
No. of species					22	8	11	8	22	5	12	7	23	3	12	8	22	4	13	8	21	4	13	10	21	7	10	9

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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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-17				Sep-17				Oct-17				Nov-17				Dec-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																				
Black Drongo	<i>Dicrurus macrocerus</i>	黑卷尾	Sv	C																	+		4	
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	3	++		2	2	++		3	++		2	2	++		3	2	
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	3	1	++	3	3	2	++	4	2	3	++	3	2	1
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鶇	R,RC	C	+	1	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	+		2	1	+		1	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	5	8	5	+++	8	7	5	+++	5	8	2	+++	8	5	5	+++	7	8	3
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	1	+		2		++		5	2	++	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	5	4	++	4	2	5	++	3	3	4	++	4	2	3	++	3		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>	大白鶇	R,RC	C																				
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					+				+											

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-17				Sep-17				Oct-17				Nov-17				Dec-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			+			1		1	
Japanese White Eye	<i>Zosterops japonica(simplex)</i>	暗綠繡眼鳥	R	C	+		3		+		2	3	+		3			+		4			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		+	1	1		+	1	1			+	1	1		+	1	1	
Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	R	C	+	2		1	+	1	1	1	+	2		2		+	2	1	1	+	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									+		1										
Parus spilonotus	<i>Yellow-cheeked Tit</i>	黃頰山雀	R	U																		+		1	
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		+		1		+		1			+		1		+		1	
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	+		2											+				+			
Rufous-capped Babbler	<i>Stachyridopsis ruficeps</i>	紅頭德鵒	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	++	2	5	3	++	4	2	3	++	3	5	2	2	++	4	2	2	++	3	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	+	2	2		+	2	2			+	1	1	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						18	34	23		22	26	27		20	33	14		24	29	22		21	34	18	
No. of species						19	8	12	10	16	7	12	11	17	8	12	7	15	7	13	11	18	8	15	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 4.4. Odonate species recorded at the She Shan River

Species name	Common name	Chinese name	Status	Common-ness	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	聯紋蠅春蜓	P, LC	C																
<i>Ceriatrigon 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 servilia servilia</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	華麗色蠅	NP	VC	+	+				+	+		+	+	+	+		+	+	
<i>Neurothemis fulvia</i>	Russet Percher	網脈蜻	NP	VC						+	+		+	+	+	+				
<i>Orithetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC											+	+	+	+		+
<i>Orithetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC																
<i>Orithetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC										+	+					
<i>Orithetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC	+						+		+	+						
<i>Orithetrum 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>	Variegated 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 Cascaeder	彩虹蜻	P,PG	VC																
No of Species					11	7	2	2	1	5	10	12	13	13	13	12	9	7	2	3

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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 4.4. 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	聯紋蠊春蜓	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>Crocothemis servilia servilia</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>Orithetrum chrysis</i>	Red-faced Skimmer	華麗灰蜻	NP	VC			+	+	+	+	+	+	+	+					+	+	+	+
<i>Orithetrum glaucum</i>	Common blue skimmer	黑尾灰蜻	NP	VC																		
<i>Orithetrum luzonicum</i>	Marsh Skimmer	呂宋灰蜻	NP	VC			+	+	+	+	+	+	+	+						+	+	+
<i>Orithetrum pruinosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC																		
<i>Orithetrum 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 Sprit	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>	Variegated Flutterer	斑麗翅蜻	NP	C					+	+	+	+									+	+
<i>Trithemis aurora</i>	Crimson Dropwing	曉褐蜻	NP	VC		+	+	+	+	+	+	+	+	+					+	+	+	+
<i>Trithemis festiva</i>	Indigo Dropwing	靛褐蜻	NP	VC		+	+	+	+	+	+	+	+	+	+				+	+	+	+
<i>Zygonyx iris insignis</i>	Emerald Cascaeder	彩虹蜻	P,PG	VC																		
No of Species					1	3	10	12	15	14	14	13	11	8	2	2	3	6	9	11	13	14

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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 4.4. 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	Dec-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>Crocothemis servilia servilia</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	彩虹蜻	P,PG	VC					
No of Species					15	13	12	7	1

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“++” – Species common in the study area

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

Commonness and status were decided according to AFCD biodiversity website

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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	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				Jul-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	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>Caridina 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	10	10	9	7	

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“+” – 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				Post construction monitoring				Post construction monitoring				
				Jan-12				Jul-12				Jul-13				Dec-13				Jan-14				Feb-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
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					11	7	6	5	9	8	7	5	11	8	7	6	11	8	8	7	11	8	8	7	13	10	9	8

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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							
				Mar-14				Apr-14				May-14				Jun-14				Jul-14				Aug-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>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>Caridina cantanensis</i>	廣東米蝦	NP	VC																												
<i>Cryptopotamon anacoluton</i>	鯉刺溪蟹	NP	VC																												
No of Species				14	12	12	9	14	12	13	9	11	11	13	8	10	12	13	8	10	11	14	7	10	12	15	6				

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“+” – 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	Status	Common -ness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring					
					Sep-14				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	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					12	12	14	8	12	12	13	7	12	11	13	7	10	8	13	6	10	11	14	6	7	10	12	6		

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“+” – 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		Post construction monitoring				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				Aug-15					
				Status	Common -ness	Referen	T1	T2	T3	Referenc	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>	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>Cardina cantanensis</i>	廣東米蝦	NP	VC																								+		
<i>Cryptopotamon anacoluton</i>	鯉刺溪蟹	NP	VC																										
No of Species					9	12	13	6	9	12	13	6	9	12	13	6	9	12	13	6	9	12	14	6	9	12	15	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
 - 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	Status	Common -ness	Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring				Post construction monitoring							
					Sep-15				Oct-15				Nov-15				Dec-15				Jan-16				Feb-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>Caridina cantanensis</i>	廣東米蝦	NP	VC			+				+				+					+	+								+	+			
<i>Cryptopotamon anacoluthon</i>	鯉刺溪蟹	NP	VC			+				+				+					+										+			
No of Species					9	13	15	6	9	13	15	6	9	13	15	6	9	14	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		Post construction monitoring				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			
				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
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 anacoluton</i>	鯉刺溪蟹	NP	VC			+					+				+						+				+		
No of Species				9	14	15	6	9	14	15	6	9	14	15	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			
				Sep-16				Oct-16				Nov-16				Dec-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>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	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			
				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
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 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				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

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

- 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			
				Sep-17				Oct-17				Nov-17				Dec-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 anacoluthon</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

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

- 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 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				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	
<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>	異鱸	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>	寬鱮鱖	NP	C	+		+		+	+			+	+	+		+	+	+		+	+	+		+	+	++	+
2x2m fish number				6	4	2	3	8	2	4	0	4	2	2	0	5	3	4	2	5	3	4	2	12	16	30	40
No of Species				8	0	2	1	8	6	1	0	9	7	7	3	9	8	8	3	8	8	7	6	8	8	7	7
Amphibian																											
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P, Cap 170, NT, PGCC	R																					+			

Note: NP – Not 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

- 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)

"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	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	T1	T2	T3	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>	寬鱮鱖	NP	C	+	+	++	++	+	+	++	++	+	+	++	++	+	+	+	+	+	+	+	+	+	+	+	+
2x2m fish number				30	40	50	60	60	60	70	70	40	40	50	40	20	10	20	10	12	5	8	6	16	8	10	10
No of Species				12	8	7	7	12	11	11	8	12	11	12	9	10	10	13	9	10	9	11	9	9	8	11	10
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

“+” – 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.

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

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"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	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	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	Reference	T1	T2	T3	
<i>Channa maculata</i>	斑鱧	NP	C	+	+	+		+	+	+			+	+			+	+						+			
<i>Clarias gariepinus</i>	革胡子鯪	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>	越南隱鱗鯪	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				12	10	16	12	20	20	30	16	40	30	40	30	50	50	60	50	60	50	50	40	50	40	50	
No of Species				9	9	12	10	9	9	12	10	8	9	11	10	8	9	12	8	7	6	11	9	7	8	11	8
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
“+” – 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.
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"V" - Vulnerable - in Red China Data Book
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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			
				Feb-15				Mar-15				Apr-15				May-15				Jun-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>	異鱸	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	30	40	40	40	40	50	50	30	35	55	45	20	10	20	10	20	10	20	10
			No of Species	7	9	12	8	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			+				+				+			+				+		

Note: NP – Not 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

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

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"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	Post construction monitoring				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				Dec-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							
<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>	寬鱮	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	55	50	40	35
			No of Species	8	8	13	10			8	8	13	7		8	8	13	6			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				
			Jan-16				Feb-16				Mar-16				Apr-16				May-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				55	45	35	25	60	45	40	30	60	50	35	25	40	40	30	20	30	20	20	10
No of Species				8	8	12	7	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				
			Jun-16				Jul-16				Aug-16				Sep-16				Oct-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	25	8	20	15	20	3	20	10	15	5	20	12	15	8	25	20	20	10
			No of Species	8	8	12	7	8	8	12	8	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				Post construction monitoring			
				Nov-16				Dec-16				Jan-17				Feb-17				Mar-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	35	35	30	20	45	40	40	20	45	45	45	20	50	50	50	30	55	55	50	20
			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				Post construction monitoring				
			Apr-17				May-17				Jun-17				Jul-17				Aug-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	35	30	40	15	20	20	15	10	15	10	10	5	15	8	8	5	20	10	10	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				
			Sep-17				Oct-17				Nov-17				Dec-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	30	25	20	8	30	25	25	10	35	30	30	20	30	25	25	15
			No of Species	8	8	14	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 Abotic data for the Upper She Shan River

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

Parameter / date	Baseline monitoring	Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring		
	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

Table 4.7 Abotic data for the Upper She Shan River

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

Parameter / date	Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring		
	Jan-12			Jul-12			Jul-13			Dec-13			Jan-14			Feb-14			Mar-14		
Replicate	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
DO (mg/L)	8.6	8.2	8.8	7.7	7.7	6.3	7.8	7.8	7.7	8.7	8.6	9.2	8.3	8.2	8.6	7.2	7.6	7.8	7.1	7.2	7.2
pH	6.9	6.6	7.1	6.7	6.6	6.6	6.8	7.2	7.6	6.6	6.9	7.1	6.8	7.3	7.4	7.8	6.7	7.6	7.2	6.8	7.5
Nitrate (mg N/L)	0.2	0.2	0.4	0.84	0.86	1.14	0.6	0.61	0.7	0.78	0.63	0.53	1.2	1.12	1.02	1.5	1.2	1.6	1.2	1.1	0.77
Ammonia (mg N/L)	0.2	0.2	0.3	0.05	0.02	1.08	0.14	0.06	0.05	0.08	<0.01	0.42	1.9	1.8	1.73	0.8	1.2	1.4	0.4	0.6	0.01
Salinity (ppt)	0	0	0	0.03	0.04	0.07	0.03	0.03	0.04	0	0	0	0	0	0	0	0	0	0	0	0
Conductivity (µS/cm)	122	118	126	121	120	160	94	97	97	116	116	134	124	118	132	128	113	132	123	136	140
BOD (mg/L)	<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)	0.2	0.05	0.1	0.2	0.05	0.1	0.2	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Water flow at riffle (m/s)	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sand (%)	10	25	5	10	25	5	15	25	5	15	10	5	15	10	5	15	10	5	15	10	5
Stone (%)	45	65	5	45	65	5	65	65	15	65	80	20	65	80	20	65	80	20	65	80	20
Mud (%)	5	10	10	5	10	10	10	10	10	10	10	5	10	10	5	10	10	5	10	10	5
Concrete (%)	40	0	80	40	0	80	10	0	70	10	0	70	10	0	70	10	0	70	10	0	70

Table 4.7 Abotic data for the Upper She Shan River

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

Parameter / date	Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring			Post construction monitoring		
	May-17			Jun-17			Jul-17			Aug-17			Sep-17		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
Replicate	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
DO (mg/L)	7.8	7.8	7.8	7.8	7.9	7.8	8.1	8.0	7.9	8.0	8.0	7.9	7.9	8.0	7.9
pH	7.6	7.6	7.6	7.7	7.7	7.6	7.7	7.7	7.6	7.7	7.7	7.7	7.7	7.6	7.7
Nitrate (mg N/L)	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.5	0.5
Ammonia (mg N/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
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
Conductivity (µS/cm)	22	23	27	19	22	25	15	18	19	20	22	25	18	23	28
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2
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	0.2-0.5	0.2-0.5	0.2-0.5	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	5	5	5	5	5	5	5	5	5	5	5	5	5
Stone (%)	80	80	30	80	80	30	80	80	30	80	80	30	80	80	30
Mud (%)	5	5	2	5	5	2	5	5	2	5	5	2	5	5	2
Concrete (%)	10	10	63	10	10	63	10	10	63	10	10	63	10	10	63

Table 4.7 Abotic data for the Upper She Shan River

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

Parameter / date	Post construction monitoring			Post construction monitoring			Post construction monitoring		
	Oct-17			Nov-17			Dec-17		
	T1	T2	T3	T1	T2	T3	T1	T2	T3
Replicate	T1	T2	T3	T1	T2	T3	T1	T2	T3
DO (mg/L)	8.0	8.0	7.9	8.1	8.0	8.0	8.0	8.0	7.9
pH	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.7	7.7
Nitrate (mg N/L)	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.5	0.5
Ammonia (mg N/L)	< 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
Conductivity (µS/cm)	23	25	25	22	25	28	23	25	26
BOD (mg/L)	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water flow at pool (m/s)	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2
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	0.2-0.5	0.2-0.5	0.2-0.5
Sand (%)	5	5	5	5	5	5	5	5	5
Stone (%)	80	80	30	80	80	30	80	80	30
Mud (%)	5	5	2	5	5	2	5	5	2
Concrete (%)	10	10	63	10	10	63	10	10	63

**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. 48)
Upper Tai Po River**

December 2017



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9 January, 2018

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9 January, 2018

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.48)
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 48 post-construction ecological monitoring report for the project conducted **on 29th December 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;
- 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 AFCDC website (www.hkbiobiodiversity.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 AFCDC website (www.hkbiobiodiversity.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 1-2). Vegetation has sparsely covered the gabion wall along the upper Tai Po River and the river bed with some common plants (Photo 3-4) 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 0.5m to 1.6m as observed along survey transect. Abundant flora species were shown in **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, 14 species of birds were recorded during bird survey (Photos 5-6). Among them, 4 species were wetland dependant birds observed feeding and roosting in the river channel including *Ardeola bacchus*, *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, 2 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 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 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

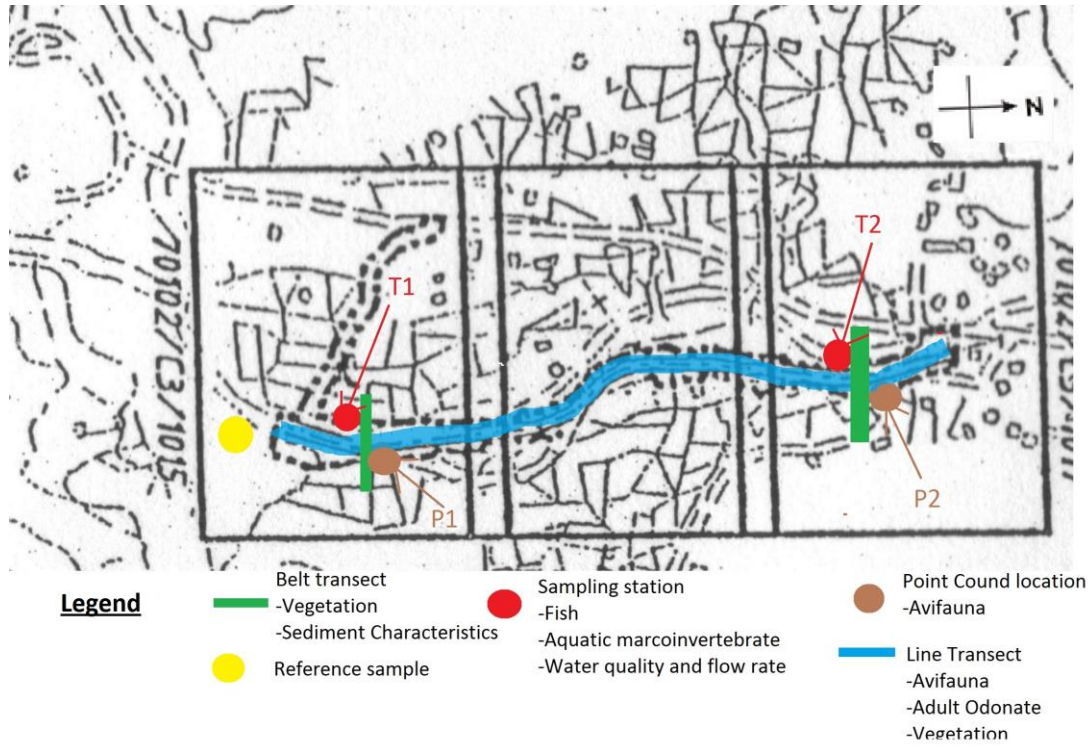


Figure 1. Sampling Location of Ecological Survey and Monitoring at Upper Tai Po River, Tai Po.

PHOTOS

<p>Photo 1: General view of the river channel (Reference site)</p>	<p>Photo 2: General view of the river channel (Upper section)</p>
<p>Photo 3: General view of the river channel (Middle section)</p>	<p>Photo 4: Vegetation sparsely growing on gabion (Middle section)</p>
<p>Photo 5 : Avifauna – <i>Centropus sinensis</i></p>	<p>Photo 6 : Avifauna – <i>Egretta garzetta</i></p>



Photo 7: Aquatic sample

TABLE

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

Family	Species name	Species name in Chinese	Baseline	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	
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>	苧麻	+	+	+	+	+	+	+						+	+	+	+	+	+	+	
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛													+	+	+	+	+	+	+	
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+							+	+	+	+	+	+	+	
Poaceae	<i>Eleusine indica</i>	牛筋草																				
Brassicaceae	<i>Rorippa indica</i>	塘葛菜																				
Poaceae	<i>Isachne globosa</i>	柳葉箬																				
Poaceae	<i>Paspalum distichum</i>	雙穗雀稗																				
Cyperaceae	<i>Cyperus involucratus</i>	風車草																				
Dioscoreaceae	<i>Dioscorea alata</i>	參薯																				
Menispermaceae	<i>Stephania longa</i>	囊箕篤																				
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼																				
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙																				
Rubiaceae	<i>Paederia scandens</i>	雞矢藤																				
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			38	38	38	39	39	34	11	12	4	17	23	27	36	39	59	60	61	61	61	

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.

Family	Species name	Species name in Chinese	Post Construction Monitoring															
			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
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>	苧麻	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Eleusine indica</i>	牛筋草					+	+	+	+	+	+	+	+	+	+	+	+
Brassicaceae	<i>Rorippa indica</i>	塘葛菜					+	+	+	+	+	+	+	+	+	+	+	+
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>	囊箕篤					+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼					+	+	+	+	+	+	+	+	+	+	+	+
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙					+	+	+	+	+	+	+	+	+	+	+	+
Rubiaceae	<i>Paederia scandens</i>	雞矢藤					+	+	+	+	+	+	+	+	+	+	+	+
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			62	63	63	63	61	63	63	66	67	67	67	67	67	67	67	67

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.

Family	Species name	Species name in Chinese	Post Construction Monitoring												
			Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17
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>	苧麻	+	+	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛	+	+	+	+									
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Eleusine indica</i>	牛筋草	+	+	+	+									
Brassicaceae	<i>Rorippa indica</i>	塘葛菜	+	+	+	+									
Poaceae	<i>Isachne globosa</i>	柳葉箬	+	+	+	+									
Poaceae	<i>Paspalum distichum</i>	雙穗雀稗	+	+	+	+									
Cyperaceae	<i>Cyperus involucratus</i>	風車草	+	+	+	+					+	+	+	+	+
Dioscoreaceae	<i>Dioscorea alata</i>	參薯	+	+	+	+	+	+	+	+	+	+	+	+	+
Menispermaceae	<i>Stephania longa</i>	囊箕篤	+	+	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼	+	+	+	+									
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙	+	+	+	+									
Rubiaceae	<i>Paederia scandens</i>	雞矢藤	+	+	+	+	+	+	+	+	+	+	+	+	+
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			65	65	66	66	52	52	52	52	52	52	52	52	52

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	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
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>	苧麻	+	+	+	+	+	+	+	+	+	+	+
Urticaceae	<i>Pouzolzia zeylanica</i>	霧水葛											
Verbenaceae	<i>Lantana camara</i>	馬纓丹	+	+	+	+	+	+	+	+	+	+	+
Poaceae	<i>Eleusine indica</i>	牛筋草											
Brassicaceae	<i>Rorippa indica</i>	塘葛菜											
Poaceae	<i>Isachne globosa</i>	柳葉箬											
Poaceae	<i>Paspalum distichum</i>	雙穗雀稗											
Cyperaceae	<i>Cyperus involucratus</i>	風車草	+	+	+	+	+	+	+	+	+	+	+
Dioscoreaceae	<i>Dioscorea alata</i>	參薯	+	+	+	+	+	+	+	+	+	+	+
Menispermaceae	<i>Stephania longa</i>	囊箕篤	+	+	+	+	+	+	+	+	+	+	+
Polygonaceae	<i>Polygonum hydropiper</i>	水蓼											
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙											
Rubiaceae	<i>Paederia scandens</i>	雞矢藤	+	+	+	+	+	+	+	+	+	+	+
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			55	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										
			Oct-07		Jan-09		Jul-09		Jan-10		Jul-10		Jan-10		Jul-10		Jan-10		Jul-10										
			P1		P2		T1		T2		T1		T2		T1		T2		T1		T2								
			Height (m)	%	Height (m)	%	Reference (m)	%	Height (m)	%	Reference (m)	%	Height (m)	%	Reference (m)	%	Height (m)	%	Reference (m)	%	Height (m)	%							
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.4	15	1	40	0.5	5	0.5	5			0.5	5			0.5	3	0.2	5	0.2	2	0.5	20	0.5	60			
Moraceae	<i>Ficus hispida</i>	對葉榕	1	2			5	5			2	10	5	5			2	10	5	5			5	5					
Ulmaceae	<i>Celtis sinensis</i>	朴樹	5	2							6	15					6	15									4m	5	
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.2	45	1.2	30			0.8	10	0.5	12					0.7	30					1	35	1	5	0.5	10	
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			5	5					
Araceae	<i>Alocasia odora</i>	海芋	1.5	23							1.5	25					2	30									2	10	
Araceae	<i>Colocasia esculenta</i>	芋	0.3	<1	0.4	<1	0.3	2					0.3	2	0.8	5			0.3	1									
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁					0.4	10	7	5			0.4	10	7	5			0.4	10	7	5			0.4	10			
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨			0.6	1	0.8	10			0.4	10	0.8	10			0.4	2	0.8	6			0.8	6					
Poaceae	<i>Phragmites karka</i>	卡開蘆					1.5	51					1.5	51					1.5	53			1.5	10					
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨	0.4	10							0.4	10					0.4	2											
Equisetaceae	<i>Equisetum debile</i>	筆管草			0.6	<1	0.3	2					0.3	2					0.3	2									
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊							0.4	2				0.4	2					0.2	2								
Commelinaceae	<i>Commelina diffusa</i>	節節草																	0.2	5	0.2	5	0.2	5		0.4	5	0.5	20
Solanaceae	<i>Solanum nigrum</i>	龍葵																											
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																	0.3	5									
Poaceae	<i>Elyusine indica</i>	牛筋草											0.5	5															
Poaceae	<i>Pennisetum purpureum</i>	象草									3	4																	
Asteraceae	<i>Wedelia chinensis</i>	鯉魚菊																											
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 Gound								10		73			10		10		78		6		10		73		88		9	15	65

- 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	Impact monitoring								Impact monitoring								Impact monitoring								Impact monitoring								Impact monitoring							
			Jan-11				Jul-11				Jan-12				Jul-12				Mar-13																							
			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)	%																	
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10					0.5	10					0.4	20					0.4	10					0.4	60														
Moraceae	<i>Ficus hispida</i>	對葉榕																																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																								
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1	15	1	5	0.5	2	1	2											1	55																				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐			4m	5																																				
Araceae	<i>Alocasia odora</i>	海芋					0.4	3																																		
Araceae	<i>Colocasia esculenta</i>	芋																																								
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁	0.4	5	5m	5																																				
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																								
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.5	2					1.5	2																																
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																								
Equisetaceae	<i>Equisetum debile</i>	筆管草																																								
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊					0.3	2	1.2	10					0.4	20																										
Commelinaceae	<i>Commelina diffusa</i>	節節草					0.2	4							0.4	10																										
Solanaceae	<i>Solanum nigrum</i>	龍葵																																								
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																																								
Poaceae	<i>Elyusine indica</i>	牛筋草													0.3	5																										
Poaceae	<i>Pennisetum purpureum</i>	象草																																								
Asteraceae	<i>Wedelia chinensis</i>	鯉魚菊																																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草			0.5	5		3																																		
Poaceae	<i>Panicum repens</i>	枯骨草							1.5	5																																
Poaceae	<i>Coix lacryma-jobi</i>	薏苡													1.5	5																										
Convolvulaceae	<i>Ipomoea cairica</i>	五爪金龍													0.2	5																										
Cucurbitaceae	<i>Benincasa hispida</i>	冬瓜					0.2	5																																		
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 Gound																																										
			68		80		89		71		100		89		35		100		100		20		100		100		10															

- 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								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		Reference		T1		T2		Reference		T1		T2		Reference		T1		T2																	
Family	Species	Chinese name	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>	薇甘菊	0.3	5	0.3	25	(concret section)	0.3	5	0.3	25	(concret section)	0.4	8	0.4	25	(concret section)	0.4	10	0.4	28	(concret section)	0.4	10	0.4	28	(concret section)														
Moraceae	<i>Ficus hispida</i>	對葉榕																																							
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																							
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	0.4	5				0.4	5						0.6	5																									
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐			0.5	1				0.5	1							0.6	1																						
Araceae	<i>Alocasia odora</i>	海芋																																							
Araceae	<i>Colocasia esculenta</i>	芋																																							
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																																							
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																							
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.5	5				1.5	5						1.5	5																									
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																							
Equisetaceae	<i>Equisetum debile</i>	筆管草																																							
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊																																							
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.1	3				0.1	3							0.2	4						0.3	5				0.3	5										
Solanaceae	<i>Solanum nigrum</i>	龍葵																																							
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																																							
Poaceae	<i>Eletusine indica</i>	牛筋草																																							
Poaceae	<i>Pennisetum purpureum</i>	象草																																							
Asteraceae	<i>Wedelia chinensis</i>	鯉魚菊																																							
Asteraceae	<i>Bidens alba</i>	白花鬼針草																																							
Poaceae	<i>Panicum repens</i>	枯骨草	0.3	3			0.3	3					0.4	3						0.6	3				0.6	4															
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	0.4	15			0.4	15					0.4	15						0.4	15				0.4	18															
Convolvulaceae	<i>Merremia hederacea</i>	魚黃草																																							
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草			1.5	5			1.5	5					1.5	5									1.5	5															
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 Gound					67	66			67	66			64	65			62	61			58	61																			

- 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								Post construction monitoring								Post construction monitoring								Post construction monitoring								Post construction monitoring							
		Stream		Oct-14				Nov-14				Dec-14				Jan-15				Feb-14																					
		Transect		Reference		T1		T2		Reference		T1		T2		Reference		T1		T2		Reference		T1		T2															
Family	Species	Chinese name	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>	薇甘菊	0.4	10	0.4	30			0.4	12	0.4	30			0.4	12	0.4	30			0.8	15			0.3	10	0.8	15			0.3	10									
Moraceae	<i>Ficus hispida</i>	對葉榕																																							
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																							
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	0.6	10					0.6	15					0.6	15					1.3	5			1	5	1.3	5			1	5									
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐			0.6	1					0.6	1					0.6	1											0.6	1											
Araceae	<i>Alocasia odora</i>	海芋																																							
Araceae	<i>Colocasia esculenta</i>	芋	0.5	5					0.5	5					0.5	5					0.8	5					0.8	5													
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																																							
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																							
Poaceae	<i>Phragmites karka</i>	卡開蘆	2	5					2	5					2	5					1.7	10					1.7	10													
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																							
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.3	5					0.3	5					0.3	5					0.3	5					0.3	5													
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊																																							
Commelinaceae	<i>Commelina diffusa</i>	節節草			0.3	10					0.3	10					0.3	10			0.2	10			0.4	60	0.3	10			0.5	60									
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>	鯉魚菊																																							
Asteraceae	<i>Bidens alba</i>	白花鬼針草			1	10					1	10					1	10			1	5			0.8	2	1	5			0.8	2									
Poaceae	<i>Panicum repens</i>	枯骨草	0.6	4					0.6	4					0.6	4					0.6	5					0.6	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	0.4	18					0.4	20					0.4	20																									
Convolvulaceae	<i>Merremia hederacea</i>	魚黃草																																							
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草			2	20					2	20					2	20							4	10				4	10										
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.5	25					1.5	25					1.5	25																							
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香																							0.2	4				0.3	4										
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花																																							
Cyperaceae	<i>Cyperus sp.</i>	莎草																							0.2	6				0.2	6										
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙																							1	5				1	5										
Amaranthaceae	<i>Celosia argentea</i>	青葙																			1.7	5					1.7	5													
Bare Gound				43		4				34		4				34		4				35		88		7		35		88		7									

- 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									
			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)	%				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	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								
Moraceae	<i>Ficus hispida</i>	對葉榕																																		
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.3	5			1	5	1.3	5			1	5	1	5			1	3	1	5			1	3	1	5	1	5	1	1				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					0.6	1					0.6	1					0.5	1					0.5	1					1.5	5				
Araceae	<i>Alocasia odora</i>	海芋																																		
Araceae	<i>Colocasia esculenta</i>	芋	0.8	5					0.8	5					0.5	5					0.5	5					0.5	5	1.2	10						
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																																		
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																		
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.7	10					1.7	10					1.5	10					1.5	10					1.5	10								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																		
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.3	5					0.3	5					0.3	5					0.3	5					0.3	5								
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊			0.3	2					0.3	2			0.3	2					0.3	5					0.3	5								
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				
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>	鯉魚菊																																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	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				
Poaceae	<i>Panicum repens</i>	枯骨草	0.6	5					0.6	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>	魚黃草																																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草				4	10					4	10			2	7							2	7					2.5	20	2	30			
Poaceae	<i>Brachiaria mutica</i>	巴拉草																												1.2	50	0.5	15			
Onagraceae	<i>Ludwigia erecta</i>	美洲水丁香			0.3	4					0.3	4			0.3	2					0.3	5														
Malvaceae	<i>Hibiscus rosa-sinensis</i>	大紅花																																		
Cyperaceae	<i>Cyperus sp.</i>	莎草			0.2	6					0.2	6			0.2	3					0.2	5							0.2	5						
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙					1	5					1	5											1	3										
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.7	5					1.7	5					1.7	5					1.7	5					1.7	5								
Bare Gound				35		88		7		35		88		7		40		93		46		40		85		46		40		14		5				

- 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							
			Aug-15								Sep-15								Oct-15								Nov-15								Dec-15							
			Reference		T1		T2		T2		Reference		T1		T2		T2		Reference		T1		T2		T2		Reference		T1		T2		T2		Reference		T1		T2		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)	%	Height (m)	%	Height (m)	%							
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10						0.5	10									0.5	10																					
Moraceae	<i>Ficus hispida</i>	對葉榕																																								
Ulmaceae	<i>Celtis sinensis</i>	朴樹																																								
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1	5	1	1			1	5	1	1			1	5	1	3			1	5	1	3																		
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐																																								
Araceae	<i>Alocasia odora</i>	海芋																																								
Araceae	<i>Colocasia esculenta</i>	芋	0.5	5	1.2	5			0.5	5	1.2	2			0.5	5	1.2	5			0.5	5	1.2	5																		
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																																								
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																																								
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.5	10					1.5	10					1.5	10					1.5	10																				
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																																								
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.3	5					0.3	5					0.3	5					0.3	5																				
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊																																								
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.4	10	0.2	20	0.4	30	0.4	10	0.2	5	0.4	30	0.4	10	0.2	15	0.4	30	0.4	10	0.2	20	0.4	30	0.4	7	0.2	20	0.4	30										
Solanaceae	<i>Solanum nigrum</i>	龍葵																																								
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸																																								
Poaceae	<i>Elyusine indica</i>	牛筋草																																								
Poaceae	<i>Pennisetum purpureum</i>	象草																																								
Asteraceae	<i>Wedelia chinensis</i>	鯉魚菊																																								
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.7	5			0.5	5	0.7	5			0.5	5	0.7	5			0.5	5	0.7	5			0.5	5	0.7	5			0.5	5										
Poaceae	<i>Panicum repens</i>	枯骨草	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>	魚黃草																																								
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草			2.5	5	2	20			2.5	5	2	20			2	7	2	20			2	10	2	20			2	10	2	20										
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.2	30	0.5	15			1.2	2	0.5	15			1.2	2	0.5	15			1.2	2	0.5	15			1.2	2	0.5	15										
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			0.2	5					0.2	2					0.2	2					0.2	2					0.2	2												
Balsaminaceae	<i>Impatiens walleriana</i>	非洲鳳仙																																								
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.7	5					1.7	5					1.7	5					1.7	5					1.7	5														
Bare Gound			40		34		25		40		83		25		40		66		25		40		58		25		40		51		58		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	Stream Transect Chinese name	Post construction monitoring Jun-16						Post construction monitoring Jul-16					
			Reference		T1		T2		Reference		T1		T2	
			Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.6	5					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	1.2	5					1.2	5				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					1.5	5					1.5	10
Araceae	<i>Allocasia odora</i>	海芋												
Araceae	<i>Colocasia esculenta</i>	芋	0.5	5					0.5	5				
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁												
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨												
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.5	5					1.5	5				
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨												
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.3	5					0.3	5				
Asteraceae	<i>Ageratum conyzoides</i>	勝紅菊												
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.4	5	0.3	5	0.4	2	0.4	5	0.3	5	0.4	5
Solanaceae	<i>Solanum nigrum</i>	龍葵												
Euphorbiaceae	<i>Mallotus paniculatus</i>	白楸												
Poaceae	<i>Eletusine indica</i>	牛筋草												
Poaceae	<i>Pennisetum purpureum</i>	象草												
Asteraceae	<i>Wedelia chinensis</i>	鯉魚菊												
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.7	5			0.5	5	0.7	5			0.5	8
Poaceae	<i>Panicum repens</i>	枯骨草	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>	魚黃草												
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					2	3					2	5
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.2	2					1.2	2		
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	1.7	5					1.7	5				
Bare Gound				55		93		85		55		93		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							Post construction monitoring							Post construction monitoring						
		Stream	Aug-16						Sep-16						Oct-16							
		Transect	Reference		T1		T2		Reference		T1		T2		Reference		T1		T2			
Family	Species	Chinese name	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.6	5					0.5	10					0.5	10						
Moraceae	<i>Ficus hispida</i>	對葉榕																				
Ulmaceae	<i>Celtis sinensis</i>	朴樹																				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.2	5					1.5	10					1.5	10						
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					1.5	10					1.5	10					1.6	10		
Araceae	<i>Alocasia odora</i>	海芋							0.4	5					0.4	5						
Araceae	<i>Colocasia esculenta</i>	芋	0.5	5					0.5	5					0.5	5						
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																				
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																				
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.5	5					1.6	5					1.6	5						
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																				
Equisetaceae	<i>Equisetum debile</i>	箬管草	0.3	5					0.5	5					0.5	5						
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊																				
Commelinaceae	<i>Commelina diffusa</i>	節節草	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		
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>	蟛蜞菊																				
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		
Poaceae	<i>Panicum repens</i>	枯骨草	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>	魚黃草																				
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					2	5					1.6	5					1.6	5		
Poaceae	<i>Brachiaria mutica</i>	巴拉草			1.2	2					1.2	5	1.3	5			1.2	5	1.3	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 walleriana</i>	非洲鳳仙																				
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.7	5					1.5	5					1.5	5						
Bare Gound				55		93		72		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)

		Post construction monitoring							Post construction monitoring							Post construction monitoring						
		Stream	Nov-16						Dec-16						Jan-17							
		Transect	Reference		T1		T2		Reference		T1		T2		Reference		T1		T2			
Family	Species	Chinese name	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%		
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	10					0.5	10					0.5	10						
Moraceae	<i>Ficus hispida</i>	對葉榕																				
Ulmaceae	<i>Celtis sinensis</i>	朴樹																				
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.5	10					1.5	10					1.5	10						
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					0.1	10					0.2	10					0.3	10		
Araceae	<i>Alocasia odora</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						
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																				
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																				
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.6	5					1.6	5					1.6	5						
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																				
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.5	5					0.5	5					0.5	5						
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊																				
Commelinaceae	<i>Commelina diffusa</i>	節節草	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>	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>	蟛蜞菊																				
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.8	5			0.1	8	0.8	5			0.3	8	0.8	5			0.3	8		
Poaceae	<i>Panicum repens</i>	枯骨草	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>	魚黃草																				
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					0.1	5					0.3	5					0.3	5		
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.1	5	0.1	5			0.3	5	0.3	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 walleriana</i>	非洲鳳仙																				
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.5	5					1.5	5					1.5	5						
Bare Gound				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)

		Post construction monitoring							Post construction monitoring							Post construction monitoring								
		Stream		Feb-17							Mar-17							Apr-17						
		Transect		Reference		T1		T2			Reference		T1		T2			Reference		T1		T2		
Family	Species	Chinese name	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>	薇甘菊	0.5	10					0.5	10					0.5	10								
Moraceae	<i>Ficus hispida</i>	對葉榕																						
Ulmaceae	<i>Celtis sinensis</i>	朴樹																						
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.5	10					1.6	10					1.6	10								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					0.3	10					0.3	10						0.3	10			
Araceae	<i>Alocasia odora</i>	海芋	0.4	5					0.5	5					0.5	5								
Araceae	<i>Colocasia esculenta</i>	芋	0.5	5					0.5	5					0.5	5								
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																						
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																						
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.6	5					1.6	5					1.6	5								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																						
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.5	5					0.5	5					0.5	5								
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊																						
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.6	10	0.4	10	0.3	10	0.6	10	0.5	10	0.3	10	0.6	10	0.5	10	0.3	10	0.3	10		
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>	蟛蜞菊																						
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.8	5			0.4	8	0.8	5			0.4	8	0.8	5				0.4	8	0.8		
Poaceae	<i>Panicum repens</i>	枯骨草	0.4	5					0.5	5					0.5	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>	魚黃草																						
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					0.3	5					0.3	10						0.3	10			
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.3	5	0.3	5			0.5	10	0.3	5			0.5	10	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 walleriana</i>	非洲鳳仙																						
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.5	5					1.5	5					1.5	5								
Bare Gound				35		85		62		35		80		57		35		80		57				

- 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							Post construction monitoring							Post construction monitoring								
		Stream		May-17							Jun-17							Jul-17						
		Transect		Reference		T1		T2			Reference		T1		T2			Reference		T1		T2		
Family	Species	Chinese name	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>	薇甘菊	0.5	10							0.5	5					0.5	5						
Moraceae	<i>Ficus hispida</i>	對葉榕																						
Ulmaceae	<i>Celtis sinensis</i>	朴樹																						
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.7	10					1.7	5					1.7	5								
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					0.3	10					0.3	5							0.4	5		
Araceae	<i>Alocasia odora</i>	海芋	0.6	5					0.6	5					0.6	5								
Araceae	<i>Colocasia esculenta</i>	芋	0.6	5					0.6	5					0.6	5								
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																						
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																						
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.7	5					1.7	5					1.7	5								
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																						
Equisetaceae	<i>Equisetum debile</i>	箬管草	0.5	5					0.5	5					0.5	5								
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊																						
Commelinaceae	<i>Commelina diffusa</i>	節節草	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	0.3	5		
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>	蟛蜞菊																						
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.8	5			0.4	8	0.8	5			0.4	3	0.8	5					0.4	3		
Poaceae	<i>Panicum repens</i>	枯骨草	0.5	5					0.5	5					0.6	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>	魚黃草																						
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					0.3	10					0.3	10							0.4	10		
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.5	10	0.3	5			0.5	10	0.3	5			0.5	10	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 walleriana</i>	非洲鳳仙																						
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.5	5					1.5	5					1.5	5								
Bare Gound				35		80		57		50		80		72		50		80		72		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)

Family	Species	Chinese name	Post construction monitoring						Post construction monitoring						Post construction monitoring					
			Stream		Aug-17				Sep-17				Oct-17							
			Transect	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)	%				
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.5	5					0.5	5					0.5	5				
Moraceae	<i>Ficus hispida</i>	對葉榕																		
Ulmaceae	<i>Celtis sinensis</i>	朴樹																		
Poaceae	<i>Microstegium ciliatum</i>	剛秀竹	1.7	5					1.7	5					1.7	5				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐				0.5	5					0.5	5				0.6	5		
Araceae	<i>Alocasia odora</i>	海芋	0.6	5					0.7	5					0.7	5				
Araceae	<i>Colocasia esculenta</i>	芋	0.6	5					0.7	5					0.7	5				
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁																		
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨																		
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.7	5					1.7	5					1.7	5				
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨																		
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.5	5					0.6	5					0.6	5				
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊																		
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.6	5	0.5	10	0.3	5	0.6	5	0.5	10	0.3	5	0.6	5	0.5	10	0.5	5
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>	蟛蜞菊																		
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.8	5			0.4	3	0.8	5			0.4	3	0.8	5		0.4	3	
Poaceae	<i>Panicum repens</i>	枯骨草	0.6	5					0.6	5					0.6	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>	魚黃草																		
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草				0.4	10					0.4	10					0.5	10	
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.5	10	0.3	5			0.5	10	0.3	5			0.5	10	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 walleriana</i>	非洲鳳仙																		
Amaranthaceae	<i>Celosia argentea</i>	青葙	1.5	5					1.5	5					1.5	5				
Bare Gound				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)

Family	Species	Stream Transect Chinese name	Post construction monitoring						Post construction monitoring					
			Reference		Nov-17 T1		T2		Reference		Dec-17 T1		T2	
			Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%	Height (m)	%
Asteraceae	<i>Mikania micrantha</i>	薇甘菊	0.6	5					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					1.6	5				
Euphorbiaceae	<i>Macaranga tanarius</i>	血桐					0.7	5					0.7	5
Araceae	<i>Alocasia odora</i>	海芋	0.8	5					0.8	5				
Araceae	<i>Colocasia esculenta</i>	芋	0.8	5					0.8	5				
Myrtaceae	<i>Cleistocalyx operculatus</i>	水翁												
Athyriaceae	<i>Callipteris esculenta</i>	菜蕨												
Poaceae	<i>Phragmites karka</i>	卡開蘆	1.6	5					1.6	5				
Thelypteridaceae	<i>Cyclosorus parasiticus</i>	華南毛蕨												
Equisetaceae	<i>Equisetum debile</i>	筆管草	0.7	5					0.7	5				
Asteraceae	<i>Ageratum conyzoides</i>	勝紅薊												
Commelinaceae	<i>Commelina diffusa</i>	節節草	0.7	5	0.6	10	0.6	5	0.7	5	0.6	10	0.7	5
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>	蟛蜞菊												
Asteraceae	<i>Bidens alba</i>	白花鬼針草	0.8	5			0.5	3	0.9	5			0.5	3
Poaceae	<i>Panicum repens</i>	枯骨草	0.6	5					0.7	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>	魚黃草												
Poaceae	<i>Pennisetum alopecuroides</i>	狼尾草					0.5	10					0.5	10
Poaceae	<i>Brachiaria mutica</i>	巴拉草			0.5	10	0.4	5			0.5	10	0.5	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>C. elosia argentea</i>	青箱	1.5	5					1.5	5				
Bare Gound				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 4.3 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	Baseline survey									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			
					Abundance	P1	P2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2	Abundance	T1	T2							
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+			+	1		+		1	+	1	1	1	1	+								+			+		1	+		2	+		1									
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C																							+			++			++	3	5	+	2	1									
Magpie	<i>Pica pica</i>	喜鵲	R	C		1																																									
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	+	1	1				+	1	3	+	2	1	+	2	2	+	1	1	+	1	+	+	2	+	1	1	+	1	+	1	+	1	1										
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C	+			+	1	3									+																		+										
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																																											
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鵲	R	C										+	2																																
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C										+	1		+	1								+												+									
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>	黑喉石鵲	WV	C																																											
Silver-eared Mesia	<i>Leiothrix argentea</i>	銀耳相思鳥	R	C															+																												
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C																																											
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	+		2	+	1		+	1	3	+	1	2	+	1	1	+	1	1	+	1	+	1	++	4	3	++	1	2	++	1	++	1	1	++	2	1	++	2	3	++	1	4	
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鶇	R	C	+																																										
White Wagtail	<i>Motacilla alba</i>	白鶇鶇	WV, R	C	+		1							++	2	3	+	1	1	+	2	2	+		++	2	1	+	1	1	+		1	+			+		1	2	+	2	1				
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+									+		1	+	1									+																				
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>	黃鶇鶇	WV&PM	C		1																																									
Number of birds						19	10		22	23		10	25	24	39	26	17		21	13		5	7		10	9		15	10		12	8		0	9	7		15	12		26	24		15	28		
No. of species						19	11	7	8	8	6	8	6	8	18	9	13	19	13	11	23	10	10	20	5	5	16	5	5	14	7	6	15	5	6	21	5	5	25	7	8	26	12	9	27	10	13

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)

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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									Post construction monitoring									Post construction monitoring									Post construction monitoring									
					Apr-14			May-14			Jun-14			Jul-14			Aug-14			Sep-14			Oct-14			Oct-14			Dec-14			Jan-15			Feb-15			Mar-15			
					Abundance	C	T1	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C	T1	T2	Abundance	C
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+			+							+			+		1	+	1	2	+	1	1	+			+	1	1	+	1	2	+		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	+	1		+	1	1	+	1	2	+	1	1	+	1	1	+	1	1	+	1	1	+	1	1	+	1	2	1	++	1	1	+	1	1			
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C																																					
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																																					
Red-billed blud magpie	<i>Urocyssa erythrorhyncha</i>	紅咀藍鵲	R	C																																					
Rufous-backed Shrike	<i>Lanius schach</i>	棕背伯勞	R	C									+			+					+		1	+																	
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>	黑喉石鵲	WV	C																																					
Silver-eared Mesia	<i>Leiothrix argentea</i>	銀耳相思鳥	R	C																																					
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C																																					
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	2	3	++	3	5	++	2	3	++	1	2	++	2	4	++	1	3	++	2	3	++	3	4	+	2	3	++	2	3	+++	2	2	++	2	3	
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鵲	R	C																																					
White Wagtail	<i>Motacilla alba</i>	白鵲鴝	WV, R	C	+		1				+		1	+	1	2	+	1	1	+	3	4	+	2	2	+	2	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 Prinia	<i>Prinia flaviventris</i>	灰頭鵲鴝	R	C	+			+			+							+																							
Yellow Wagtail	<i>Motacilla flava</i>	黃鵲鴝	WV&PM	C																																					
Number of birds						13	16		14	22		10	14		9	18		11	22		14	29		14	23		17	22		8	17		8	17		14	20		12	31	
No. of species						24	7	9	24	7	7	17	5	8	17	7	8	18	6	10	19	8	12	21	9	13	23	10	13	19	4	9	22	4	9	20	9	12	17	6	14

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;

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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)

		Post construction monitoring																																						
		Apr-15			May-15			Jun-15			Jul-15			Aug-15			Sep-15			Oct-15			Nov-15			Dec-15			Jan-16			Feb-16			Mar-16					
Common Name	Species name	Chinese name	Status	Rarity	Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance								
					C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2						
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1		+	1							
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C	+									+		2	+		5	+		6	+		5	++	6	++	7	++	7									
Magpie	<i>Pica pica</i>	喜鵲	R	C																																				
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	+	1	1	++	2	2	++	2	2	++	2	2	++	2	++	2	+	1	1	+	1	+	1	1	+	1	+	1	+	1	1					
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C																														+						
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																																				
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鵲	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						++	3		+++	7	+++	5	++	3	++	3	++	3	++	3																
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>	黑喉石鵲	WV	C																																				
Silver-eared Mesia	<i>Leiothrix argentea</i>	銀耳相思鳥	R	C																																				
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C																																				
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	2	3	++	2	3	++	2	3	++	3	3	++	3	1	++	1	3	++	3	3	++	4	2	++	1	3	++	2	3	++	1	3	++	3	3
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鵲	R	C																																				
White Wagtail	<i>Motacilla alba</i>	白鵲鴝	WV, R	C	++		3	++		2	++		3	++		3	++	1	2	++		2	+	1	1	+	1	1	+	2	+	1	2	+	1	1	+	1	2	
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	R	C	+	1		+	1		+	1					+	1																						
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥	R	C													+	1																						
Yellow Bellid Prinia	<i>Prinia flaviventris</i>	灰頭鵲鶯	R	C																																				
Yellow Wagtail	<i>Motacilla flava</i>	黃鵲鴝	WV&PM	C																																				
Number of birds						18	32		24	34		31	33		42	38		31	38		29	36		37	33		27	34		19	32		26	33		21	30		29	28
No. of species					19	11	14	18	15	14	18	14	13	17	14	13	21	13	17	22	11	14	17	14	13	16	11	12	15	8	12	15	9	12	16	9	11	17	9	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;

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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)

Post construction monitoring																												
		Apr-16			May-16			Jun-16			Jul-16			Aug-16			Sep-16			Oct-16			Nov-16			Dec-16		
Common Name	Species name	Chinese name	Status	Rarity	Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance					
					C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+			+	1		+	1		+	1		+	1		+	1		+	1		+	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	1	+	1	1	+	2	2	+	2	1	+	2	2	+	1	2	+	1	1	+	2	2
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C																								
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U				+			+																	
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鵲	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>	黑喉石鵲	WV	C																								
Silver-eared Mesia	<i>Leiothrix argentauris</i>	銀耳相思鳥	R	C																								
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C																								
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	5	3	++	2	3	++	4	5	++	3	4	++	4	5	++	3	4	++	4	5	++	4	2
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鵲	R	C																								
White Wagtail	<i>Motacilla alba</i>	白鵲鴝	WV, R	C	+	2	1	+	1	1	+		1	+		1	+		1	+	1	1	+	1	1	+	2	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 Prinia	<i>Prinia flaviventris</i>	灰頭鵲鴝	R	C																								
Yellow Wagtail	<i>Motacilla flava</i>	黃鵲鴝	WV&PM	C																								
Number of birds						27	32		21	31		22	34		12	29		19	37		19	34		22	37		28	26
No. of species					18	9	9	18	9	10	19	8	10	16	5	10	16	8	11	15	8	10	15	9	12	16	13	11

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;

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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)

Post construction monitoring																												
					Jan-17			Feb-17			Mar-17			Apr-17			May-17			Jun-17			Jul-17			May-17		
					Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance			Abundance		
Common Name	Species name	Chinese name	Status	Rarity	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	1		+	1	1	+		1	+		1	+	1		+	1		+	2		+	1	
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C	+			+			+			++			++			++		5	++			++		
Magpie	<i>Pica pica</i>	喜鵲	R	C																								
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	+	1	1	+	2		+	2	2	+	1	1	+	1	1	+	2	1	+	2	2	+	1	1
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C																								
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U																								
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鵲	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>	黑喉石鵲	WV	C																								
Silver-eared Mesia	<i>Leiothrix argentea</i>	銀耳相思鳥	R	C																								
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C																								
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	5	2	++	3	3	++	3	2	++	5	4	++	5	5	++	2	4	++	3	5	++	5	5
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鵲	R	C																								
White Wagtail	<i>Motacilla alba</i>	白鵲鴝	WV, R	C	+	1	1	+	2	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 Prinia	<i>Prinia flaviventris</i>	灰頭鵲鴝	R	C																								
Yellow Wagtail	<i>Motacilla flava</i>	黃鵲鴝	WV&PM	C																								
Number of birds						30	21		27	29		28	28		20	30		24	30		23	24		24	30		24	30
No. of species					16	11	12	18	10	11	19	9	12	18	6	10	17	10	11	15	8	12	15	9	9	17	10	11

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)

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VU: Vulnerable in China Red Data Book Status

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)

Post construction monitoring																			
					Jun-17			Jul-17			Aug-17			Sep-17			Oct-17		
					Abundance			Abundance			Abundance			Abundance			Abundance		
Common Name	Species name	Chinese name	Status	Rarity	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2	C	T1	T2
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	1		+	2		+	1		+	1		+	1	
Little Swift	<i>Apus affinis</i>	小白腰雨燕	R, SpM	C	++		5	++											
Magpie	<i>Pica pica</i>	喜鵲	R	C															
Magpie Robin	<i>Copsychus saularis</i>	鵲鴝	R	C	+	2	1	+	2	2	+	1	2	+	2	2	+	1	3
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C															
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U															
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鵲	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>	黑喉石鵲	WV	C															
Silver-eared Mesia	<i>Leiothrix argentauris</i>	銀耳相思鳥	R	C															
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C															
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	2	4	++	3	5	++	5	2	++	3	3	++	4	2
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鵲	R	C															
White Wagtail	<i>Motacilla alba</i>	白鵲鴝	WV, R	C	+	1	1	+	1	1	+	1	1	+	2		+	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 Prinia	<i>Prinia flaviventris</i>	灰頭鵲鴝	R	C															
Yellow Wagtail	<i>Motacilla flava</i>	黃鵲鴝	WV&PM	C															
Number of birds						23	24		24	30		26	12		26	16		26	16
No. of species					15	8	12	15	9	9	11	9	7	13	9	9	13	10	9

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;

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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)

Post construction monitoring										
					Nov-17			Dec-17		
					Abundance			Abundance		
Common Name	Species name	Chinese name	Status	Rarity	C	T1	T2	C	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, PC	C						
Black Kite	<i>Milvus lineatus</i>	麻鷹	R, RC, Cap.586	C						
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	R	C	+	2	1	+	2	2
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	R	C	++	3	2	++	2	2
Chinese Hwamei	<i>Garrulax canorus</i>	畫眉	R	C						
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	R,RC	C	+	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 M	C				+		
Common Snipe	<i>Gallinago gallinago</i>	扇尾沙錐	WV&P M	C						
Common Tailorbird	<i>Orthotomus sutorius</i>	長尾縫葉鶇	R	C	+		1	+	1	1
Crested bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	R	C	+++	8	5	+++	5	7
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	R	C	+	2	2	+	3	
Daurian redstart	<i>Phoenicurus aureoreus</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	++	6	4
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>	灰鶇鴉	WV	C	+		1	+	1	1
Japanese White Eye	<i>Zosterops japonica</i>	暗綠繡眼鳥	R	C						
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	大鷹鴉	PM, SV	C						
Large-billed Crow	<i>Corvus macrorhynchos</i>	大嘴烏鴉	R	C						

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)

Post construction monitoring										
					Nov-17			Dec-17		
					Abundance			Abundance		
Common Name	Species name	Chinese name	Status	Rarity	C	T1	T2	C	T1	T2
Little Egret	<i>Egretta garzetta</i>	小白鷺	R, RC	C	+	1		+	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	1	+	1	2
Olive Backed pipit	<i>Anthus hodgsoni</i>	樹鵲	WV	C						
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	八聲杜鵑	SV	U						
Red-billed blud magpie	<i>Urocissa erythrorhyncha</i>	紅咀藍鵲	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>	黑喉石鵲	WV	C						
Silver-eared Mesia	<i>Leiothrix argentea</i>	銀耳相思鳥	R	C						
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鵲	R	C						
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	R	C	++	5	3	++	4	2
Violet Whistling Thrush	<i>Myiophonus caeruleus</i>	紫嘯鵲	R	C						
White Wagtail	<i>Motacilla alba</i>	白鵲鴝	WV, R	C	+	2	2	+	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 Prinia	<i>Prinia flaviventris</i>	灰頭鵲鴝	R	C						
Yellow Wagtail	<i>Motacilla flava</i>	黃鵲鴝	WV&PM	C						
Number of birds						32	20		28	22
No. of species					15	11	10	14	12	9

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)

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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	
<i>Aethriamanta brevipennis brevipennis</i>	Elusive Adjutant	短腹異蜻	NP	U																			
<i>Macrodiplex cora</i>	Coastal Glider	高翔濤蜻	NP	C																			
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蝶	NP	VC															+	+			
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蝶	NP	VC																			+
<i>Crocothemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC	+		+		+													+	
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蝶	NP	VC								+											+
<i>Neurobasis chinensis</i>	Chinese Greenwing	華帶色蝶	NP	C					+											+	+	+	+
<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>Palpopleura sexmaculata sexmaculata</i>	Asian Widow	六斑曲緣蜻	NP	C									+										
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+		+	+	+	+	++	+	+	+	+								
<i>Paracercion calamorum dyeri</i>	Dusky Lilyquatter	蒼尾蝶	P, LC	C																		+	
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蝶	NP	VC																			
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蝶	NP	C									+										+
<i>Rhinocypha perforata</i>	Common Blue Jewel	三斑鼻蝶	NP	VC					+														
<i>Trithemis Aurora</i>	Crimson dropwing	曉褐蜻	NP	VC	+				+											+			+
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC									+		+	+	+	+	+	+	+	+	+
<i>Urothemis signata signata</i>	Scarlet Basket	赤斑曲鈞脈蜻	NP	C									+										
<i>Zgonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P	P,PGC																			
No of Species					4	2	4	1	6	1	5	1	5	1	4	2	1	3	4	4	2	5	

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.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 Tai Po River

Species	Common name	Chinese name	Status	Commonness	Post construction monitoring													
					Aug-14	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
<i>Aethriamanta brevipennis brevipennis</i>	Elusive Adjutant	短腹異蜻	NP	U														
<i>Macrodiplox cora</i>	Coastal Glider	高翔濤蜻	NP	C												+	+	
<i>Ceriatrigon auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蝶	NP	VC					+					+	+	+	+	+
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蝶	NP	VC	+	+	+							+	+	+	+	+
<i>Crocothemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC													+	+
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蝶	NP	VC	+													
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蝶	NP	C	+	+	+	+					+	+			+	+
<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 prunosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC											+	+	+	
<i>Palpopleura sexmaculata sexmaculata</i>	Asian Widow	六斑曲緣蜻	NP	C												+	+	
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC				+	+									
<i>Paracercion calamorum dyeri</i>	Dusky Lilyquatter	蒼尾蝶	P, LC	C														
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蝶	NP	VC														+
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蝶	NP	C												+	+	+
<i>Rhinocypha perforata</i>	Common Blue Jewel	三斑鼻蝶	NP	VC			+							+	+	+	+	+
<i>Trithemis Aurora</i>	Crimson dropwing	曉褐蜻	NP	VC	+	+	+	+	+	+								
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Urothemis signata signata</i>	Scarlet Basket	赤斑曲鈞脈蜻	NP	C														
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P	P,PGC	+	+	+	+										
No of Species					7	8	9	6	2	2	1	3	6	7	9	11	10	8

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“+” – Species exists in the study area

“++” – Species common in the study area

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

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Table 4.4. Odonate species recorded at the Upper Tai Po River

Species	Common name	Chinese name	Status	Commonness	Post construction monitoring												
					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
<i>Aethriamanta brevipennis brevipennis</i>	Elusive Adjutant	短腹異蜻	NP	U									+	+	+		
<i>Macrodiplox cora</i>	Coastal Glider	高翔濛濛	NP	C													
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蝶	NP	VC									+	+	+	+	
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蝶	NP	VC													
<i>Crocothemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC	+	+								+	+	+	+
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蝶	NP	VC													
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蝶	NP	C	+							+	+	+	+	+	+
<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>Palpopleura sexmaculata sexmaculata</i>	Asian Widow	六斑曲緣蜻	NP	C													
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Paracercion calamorum dyeri</i>	Dusky Lilyquatter	蒼尾蝶	P, LC	C													
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蝶	NP	VC													
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蝶	NP	C													
<i>Rhinocypha perforata</i>	Common Blue Jewel	三斑鼻蝶	NP	VC	+								+	+	+	+	+
<i>Trithemis aurora</i>	Crimson dropwing	曉褐蜻	NP	VC	+	+						+	+	+	+	+	+
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC	+			+				+	+	+	+	+	+
<i>Urothemis signata signata</i>	Scarlet Basket	赤斑曲鈞脈蜻	NP	C													
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P	P, PGC													
No of Species					8	5	1	2	1	2	7	10	11	11	10	8	7

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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

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 Tai Po River

Species	Common name	Chinese name	Status	Commonness	Post construction monitoring											Post construction monitoring			
					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	Dec-17	
<i>Aethriamanta brevipennis brevipennis</i>	Elusive Adjutant	短腹異蜻	NP	U															
<i>Macrodiplax cora</i>	Coastal Glider	高翔濤蜻	NP	C															
<i>Ceragrion auranticum ryukyuanum</i>	Orange-tailed Sprite	琉球橘黃蝶	NP	VC															
<i>Copera marginipes</i>	Yellow Featherlegs	黃狹扇蝶	NP	VC							+	+	+	+	+				
<i>Crocothemis servilia servilia</i>	Crimson Darter	紅蜻	NP	VC									+	+	+	+	+		
<i>Euphaea decorata</i>	Black-banded Gossamerwing	方帶幽蝶	NP	VC											+				
<i>Neurobasis chinensis</i>	Chinese Greenwing	華麗色蝶	NP	C							+	+	+	+	+	+	+		
<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 prunosum neglectum</i>	Common Red Skimmer	赤褐灰蜻	NP	VC															
<i>Palpopleura sexmaculata sexmaculata</i>	Asian Widow	六斑曲緣蜻	NP	C															
<i>Pantala flavescens</i>	Wandering Glider	黃蜻	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Paracercion calamorum dyeri</i>	Dusky Lilyquatter	蒼尾蝶	P, LC	C															
<i>Prodasineura autumnalis</i>	Black Threadtail	烏齒原蝶	NP	VC							+	+	+	+	+	+	+		
<i>Pseudagrion rubriceps rubriceps</i>	Orange-faced Sprite	丹頂斑蝶	NP	C															
<i>Rhinocypha perforata</i>	Common Blue Jewel	三斑鼻蝶	NP	VC								+	+	+	+	+	+		
<i>Trithemis aurora</i>	Crimson dropwing	曉褐蜻	NP	VC	+							+	+	+	+	+	+	+	
<i>Trithemis festiva</i>	Indigo Dropwing	慶褐蜻	NP	VC	+					+	+	+	+	+	+	+	+		
<i>Urothemis signata signata</i>	Scarlet Basket	赤斑曲鈞脈蜻	NP	C															
<i>Zygonyx iris insignis</i>	Emerald Cascader	彩虹蜻	P	P,PGC															
No of Species					5	1	1	2	3	6	9	10	10	11	9	7	5	2	

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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 (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 Upper Tai Po River (T1- Upper stream sampling site and T2- Lower stream sampling site)

Species	Chinese name	Sampling point	Baseline survey		Impact monitoring			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			Jan-12			Jul-12				
			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>Melanoides tuberculata</i>	縮螺黑螺	NP	VC							+	+	+	+	+							+		+	+	+	+			
<i>Physella acuta</i>	尖唇肺螺	NP	VC																		+			+	+	+			
<i>Pomacea canaliculata</i>	福里螺	NP	VC							+	+		++	+	+						+		+	+	+	+			
<i>Radix plicatulus</i>	鐘白螺	NP	VC			++				+	+		+	+							+		+	+	+	+			
<i>Sinotata quadrata</i>	田螺	NP	VC							++			++								+			+	+	+			
Insects																													
<i>Anisocentropus sp.</i>	--	NP	VC																										
<i>Arctopora sp.</i>	--	NP	VC																										
<i>Aulocodes sp.</i>	--	NP	VC																										
<i>Baetis sp.</i>	--	NP	VC	+		+				+		+	+		+											+			
<i>Chironomus sp.</i>	蠓幼虫	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>Orthetrum sp.</i>	--	NP	VC	+	+	+				+		+	+		+		+	+	+	+	+	+	+	+	+	+			
<i>Perla sp.</i>	--	NP	VC																										
<i>Rhaphium sp.</i>	--	NP	VC																							+			
<i>Tipulidae spp.</i>	--	NP	VC																										
Crustacea																													
<i>Caridina cantonensis</i>	廣東米蝦	NP	VC			+				+		++		+	++	+	+	+	+	+	+	+	+	+	+	+			
<i>Cryptopotamon anacoluton</i>	鯁刺溪蟹	NP	C			+				+				+	+						+					+			
<i>Eriocheir japonica</i>	日本絨螯蟹	NP	C																										
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC			+				+		+		+	+	+	+	+	+	+	+	+	+	+	+	+			
No of Species				5	6	9	0	5	11	2	5	11	12	6	11	16	8	10	6	5	12	4	4	10	6	4	14	7	1

Note:
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 "R" - 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	Sampling point	Impact monitoring			Impact monitoring			Post construction monitoring																		
			Mar-13			Jul-13			Jan-14			Feb-14			Mar-14			Apr-14			May-14			Jun-14			
			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>Melanooides tuberculata</i>	縮螺黑螺	NP	VC	+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Physella acuta</i>	尖唇肺螺	NP	VC	+																							
<i>Pomacea canaliculata</i>	福果螺	NP	VC	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>	罐白螺	NP	VC	+			+			+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Sinotata quadrata</i>	田螺	NP	VC	+			+			+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	
Insects																											
<i>Anisocentropus sp.</i>	--	NP	VC												+						+					+	
<i>Arctopora sp.</i>	--	NP	VC																								
<i>Ailocodes sp.</i>	--	NP	VC																								
<i>Baetis sp.</i>	--	NP	VC	+			+			+			+			+			+	+						+	
<i>Chironomus sp.</i>	螺幼虫	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>Orthetrum sp.</i>	--	NP	VC	+			+			+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Perla sp.</i>	--	NP	VC																								
<i>Rhaphium sp.</i>	--	NP	VC	+																							
<i>Tipulidae spp.</i>	--	NP	VC																								
Crustacea																											
<i>Caridina cantonensis</i>	廣東米蝦	NP	VC	+			+	+		+	+	+	+	+	+	+	++	++	+	+	+	+	+	+	+	+	
<i>Cryptopotamon anacoluton</i>	鯽刺溪蟹	NP	C	+			+			+			+				+								+		
<i>Eriocheir japonica</i>	日本絨螯蟹	NP	C																								
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+			+			+		+	+		+	+		+	+		+	+	+	+	+	+	
No of Species				14	2	0	13	4	1	13	7	4	14	10	8	17	11	9	18	13	9	15	9	7	15	9	5

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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																							
			Jul-14			Aug-14			Sep-14			Oct-14			Nov-14			Dec-14			Jan-15					
			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>Melanooides tuberculata</i>		NP VC	+	+		+			+			+			+			+			+					
<i>Physella acuta</i>		NP VC																								
<i>Pomacea canaliculata</i>		NP VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
<i>Radix plicatulus</i>		NP VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
<i>Sinotata quadrata</i>		NP VC	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
Insects																										
<i>Anisocentropus sp.</i>	--	NP VC	+			+			+			+			+			+			+					
<i>Arctopora sp.</i>	--	NP VC				+			+			+			+			+			+					
<i>Aulocodes sp.</i>	--	NP VC													+			+			+					
<i>Baetis sp.</i>	--	NP VC	+			+			+	+		+	+		+	+		+	+		+	+				
<i>Chironomus sp.</i>		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>Orthetrum sp.</i>	--	NP VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
<i>Perla sp.</i>	--	NP VC	+												+							+				
<i>Rhaphium sp.</i>	--	NP VC	+			+			+			+			+			+			+					
<i>Tipulidae spp.</i>	--	NP VC																								
Crustacea																										
<i>Caridina cantonensis</i>		NP VC	+	+	+	+	+	+	+	+	+	+	++	+	+	++	+	+	++	+	+	++	+			
<i>Cryptopotamon anacoluton</i>		NP C	+			+			+			+			+			+			+					
<i>Eriocheir japonica</i>		NP C																								
<i>Macrobrachium hainanense</i>		NP VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+				
No of Species			18	10	6	18	9	8	19	12	8	19	13	7	19	11	6	16	10	5	19	10	5			

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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																							
			Feb-15			Mar-15			Apr-15			May-15			Jun-15			Jul-15			Aug-15			Sep-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
Mollusca																										
<i>Biomphalaria sp.</i>	--	NP VC	+			+	+	+	+			+			+			+			+			+		
<i>Brotia hainanensis</i>	--	NP VC	+	+		+			+	+		+	+		+	+		+	+		+	+		+	+	
<i>Melanoides tuberculata</i>		NP VC	+			+			+			+			+			+			+			+		
<i>Physella acuta</i>		NP VC	+			+			+			+			+			+			+			+		
<i>Pomacea canaliculata</i>		NP VC	+	+	+	+			+	+	+	+	+	+	+	++	+	++	++	+	++	+	+	++	+	+
<i>Radix plicatulus</i>		NP VC	+			+	+		+			+			+			+			+			+		
<i>Sinotata quadrata</i>		NP VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Insects																										
<i>Anisocentropus sp.</i>	--	NP VC	+			+			+			+			+			+			+			+		
<i>Arctopora sp.</i>	--	NP VC	+			+			+			+			+			+			+			+		
<i>Aulocodes sp.</i>	--	NP VC	+			+			+			+			+			+			+			+		
<i>Baetis sp.</i>	--	NP VC	+			+	+	+	+			+			+			+			+			+		
<i>Chironomus sp.</i>		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>Orthetrum sp.</i>	--	NP VC	+	+					+	+		+	+		+	+		+	+		+	+		+	+	
<i>Perla sp.</i>	--	NP VC				+			+			+			+			+			+			+		
<i>Rhaphium sp.</i>	--	NP VC				+			+			+			+			+			+			+		
<i>Tipulidae spp.</i>	--	NP VC																								
Crustacea																										
<i>Caridina cantonensis</i>		NP VC	+	++	+	+	+		++	++		++	++	+	++	++	+	++	++	+	++	+	+	++	+	+
<i>Cryptopotamon anacoluton</i>		NP C	+			++	++	+	+			+			+			+			+			+		
<i>Eriocheir japonica</i>		NP C																								
<i>Macrobrachium hainanense</i>		NP VC	+	+		+			+	+		+			+			+			+			+		
No of Species			18	7	4	19	7	5	20	7	4	15	7	4	15	7	4	15	7	4	16	6	4	16	6	3

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 "+" – Species exists in the study area
 "++" – Species common in the study area
 "+++" – Species abundance in the study area
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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																								
			Oct-15			Nov-15			Dec-15			Jan-16			Feb-16			Mar-16			Apr-16			May-16			
			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>Melanoides tuberculata</i>		NP	VC	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+		
<i>Physella acuta</i>		NP	VC																								
<i>Pomacea canaliculata</i>		NP	VC	++	+	+	++	+	+	++	+	+	++	+	+	++	+	+	++	+	+	++	+	+	++	+	
<i>Radix plicatulus</i>		NP	VC	+			+			+			+			+			+			+			+		
<i>Sinotata quadrata</i>		NP	VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	
Insects																											
<i>Anisocentropus sp.</i>	--	NP	VC	+			+			+			+			+			+			+			+		
<i>Arctopora sp.</i>	--	NP	VC	+			+			+			+			+			+			+			+		
<i>Aulocodes sp.</i>	--	NP	VC																								
<i>Baetis sp.</i>	--	NP	VC																								
<i>Chironomus sp.</i>		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>Orthetrum sp.</i>	--	NP	VC	+	+		+	+		+	+		+	+		+	+		+	+		+	+		+	+	
<i>Perla sp.</i>	--	NP	VC	+			+			+			+			+			+			+			+		
<i>Rhaphium sp.</i>	--	NP	VC																								
<i>Tipulidae spp.</i>	--	NP	VC																								
Crustacea																											
<i>Caridina cantonensis</i>		NP	VC	++	+		++	+		++	+		++	+		++	+		++	+		++	+		++	+	
<i>Cryptopotamon anacoluton</i>		NP	C																								
<i>Eriocheir japonica</i>		NP	C																								
<i>Macrobrachium hainanense</i>		NP	VC	+			+			+			+			+			+			+			+		
No of Species				16	6	3	16	6	3	16	6	3	16	6	3	16	6	3	16	6	3	16	6	3	15	6	3

Note:
 "NP" – Not protected in Hong Kong
 "R" - 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	Sampling point	Post construction monitoring																		
			Jun-16			Jul-16			Aug-16			Sep-16			Oct-16			Nov-16			
			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>Melanoides tuberculata</i>		NP	VC	+		+	+		+		+		+		+		+		+	+	
<i>Physella acuta</i>		NP	VC																		
<i>Pomacea canaliculata</i>		NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>		NP	VC	+			+			+			+			+			+		
<i>Sinotata quadrata</i>		NP	VC	+	+		+	+		+	+		+	+		+	+		+	+	
Insects																					
<i>Anisocentropus sp.</i>	--	NP	VC	+			+			+			+			+			+		
<i>Arctopora sp.</i>	--	NP	VC	+			+			+			+			+			+		
<i>Aulocodes sp.</i>	--	NP	VC																		
<i>Baetis sp.</i>	--	NP	VC																		
<i>Chironomus sp.</i>		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>Orthetrum sp.</i>	--	NP	VC	+	+		+	+		+	+		+	+		+	+		+	+	
<i>Perla sp.</i>	--	NP	VC	+			+			+			+			+			+		
<i>Rhaphium sp.</i>	--	NP	VC																		
<i>Tipulidae spp.</i>	--	NP	VC																		
Crustacea																					
<i>Caridina cantonensis</i>		NP	VC	+	+		+	+		+	+		+	+		+	+		+	+	
<i>Cryptopotamon anacoluton</i>		NP	C										+			+			+		
<i>Eriocheir japonica</i>		NP	C																		
<i>Macrobrachium hainanense</i>		NP	VC										+			+			+		
No of Species				15	6	3	15	6	3	15	6	3	17	6	3	17	6	3	17	6	3

Note:
 "NP" – Not protected in Hong Kong
 R - 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	Sampling point	Post construction monitoring												
			Dec-16			Jan-17			Feb-17			Mar-17			
			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>Melanooides tuberculata</i>	縮螺黑螺	NP	VC	+		+	+	+	+		+	+		+	
<i>Physella acuta</i>	尖唇肺螺	NP	VC												
<i>Pomacea canaliculata</i>	福果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>	鐘白螺	NP	VC	+			+		+			+			
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+		+	+	+	+		+	+		
Insects															
<i>Anisocentropus sp.</i>	--	NP	VC	+			+		+			+			
<i>Arctopora sp.</i>	--	NP	VC	+			+		+			+			
<i>Aulocodes sp.</i>	--	NP	VC												
<i>Baetis sp.</i>	--	NP	VC												
<i>Chironomus sp.</i>	螺幼虫	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>Orthetrum sp.</i>	--	NP	VC	+	+		+	+	+	+		+	+		
<i>Perla sp.</i>	--	NP	VC	+			+		+			+			
<i>Rhaphium sp.</i>	--	NP	VC												
<i>Tipulidae spp.</i>	--	NP	VC												
Crustacea															
<i>Caridina cantonensis</i>	廣東米蝦	NP	VC	+	+		+	+	+	+		+	+		
<i>Cryptopotamon anacoluton</i>	鯁刺溪蟹	NP	C	+			+		+			+			
<i>Eriocheir japonica</i>	日本絨螯蟹	NP	C				+		+			+			
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+			+		+			+			
No of Species				17	6	3	18	6	3	18	6	3	18	6	3

Note:
 "NP" – Not protected in Hong Kong
 R - 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	Sampling point	Post construction monitoring															
			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	
Mollusca																		
<i>Biomphalaria sp.</i>	--	NP	VC	+			+			+			+			+		
<i>Brotia hainanensis</i>	--	NP	VC	+	+		+	+		+	+		+	+		+	+	
<i>Melanooides tuberculata</i>	縮螺黑螺	NP	VC	+		+	+		+		+		+		+		+	+
<i>Physella acuta</i>	尖唇肺螺	NP	VC															
<i>Pomacea canaliculata</i>	福果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Radix plicatulus</i>	鐘白螺	NP	VC	+			+			+			+			+		
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+		+	+		+	+		+	+		+	+	
Insects																		
<i>Anisocentropus sp.</i>	--	NP	VC	+			+			+			+			+		
<i>Arctopora sp.</i>	--	NP	VC	+			+			+			+			+		
<i>Aulocodes sp.</i>	--	NP	VC															
<i>Baetis sp.</i>	--	NP	VC															
<i>Chironomus sp.</i>	螺幼虫	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>Orthetrum sp.</i>	--	NP	VC	+	+		+	+		+	+		+	+		+	+	
<i>Perla sp.</i>	--	NP	VC	+			+			+			+			+		
<i>Rhaphium sp.</i>	--	NP	VC															
<i>Tipulidae spp.</i>	--	NP	VC															
Crustacea																		
<i>Caridina cantonensis</i>	廣東米蝦	NP	VC	+	+		+	+		+	+		+	+		+	+	
<i>Cryptopotamon anacoluton</i>	鯁刺溪蟹	NP	C	+			+			+			+			+		
<i>Eriocheir japonica</i>	日本絨螯蟹	NP	C	+			+			+			+			+		
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+			+			+			+			+		
No of Species				18	6	3	18	6	3	18	6	3	18	6	3	18	6	3

Note:
 "NP" – Not protected in Hong Kong
 "R" - 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	Sampling point	Post construction monitoring												
			Sep-17			Oct-17			Nov-17			Dec-17			
			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>Melanooides tuberculata</i>	縮螺黑螺	NP	VC	+		+	+	+		+	+	+	+	+	
<i>Physella acuta</i>	尖唇肺螺	NP	VC												
<i>Pomacea canaliculata</i>	福果螺	NP	VC	+	+	+	+	+	+	+	+	+	+	+	
<i>Radix plicatulus</i>	鐘白螺	NP	VC	+			+			+		+			
<i>Sinotata quadrata</i>	田螺	NP	VC	+	+		+	+		+	+	+	+		
Insects															
<i>Anisocentropus sp.</i>	--	NP	VC	+			+			+		+			
<i>Arctopora sp.</i>	--	NP	VC	+			+			+		+			
<i>Aulocodes sp.</i>	--	NP	VC												
<i>Baetis sp.</i>	--	NP	VC												
<i>Chironomus sp.</i>	螺幼虫	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>Orthetrum sp.</i>	--	NP	VC	+	+		+	+		+	+	+	+		
<i>Perla sp.</i>	--	NP	VC	+			+			+		+			
<i>Rhaphium sp.</i>	--	NP	VC												
<i>Tipulidae spp.</i>	--	NP	VC												
Crustacea															
<i>Caridina cantonensis</i>	廣東米蝦	NP	VC	+	+		+	+		+	+	+	+		
<i>Cryptopotamon anacolutum</i>	鯁刺溪蟹	NP	C	+			+			+		+			
<i>Eriocheir japonica</i>	日本絨螯蟹	NP	C	+			+			+		+			
<i>Macrobrachium hainanense</i>	海南沼蝦	NP	VC	+			+			+		+			
No of Species				18	6	3	18	6	3	18	6	3	18	6	3

Note:

"NP" – Not protected in Hong Kong
 R - 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	Common name	Status	Commonness	Baseline survey		Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			
				Oct-07	T2	Jan-09			Jul-09			Jan-10			Jul-10			Jan-11			Jul-11			
				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>	白線紋胸鮡	NP	R																					
<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>	異鱺	V and	C	++		+	+		+			+			+	+		+	+		+			+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C	++	+			++		+		+	+++		+	++			+	+			+	+
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R																					
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰈	NP	C	+		+			+			+			+	+		++	++		+	+		+
<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>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	+												++					+			+
		2x2m fish		70	60	15	8	25	10	20	100	10	2	8	10	7	100	10	5	20	6	2	4	
		No of Speices		10	2	7	3	2	7	4	4	7	5	5	7	9	7	8	5	3	11	2	7	
Amphibian																								
<i>Paramesotriton hongkongensis</i>	香港瘰螈	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	Impact monitoring			Impact monitoring			Impact monitoring			Impact monitoring			Post construction monitoring							
			Jan-12			Jul-12			Mar-13			Jul-13			Jan-14			Feb-14				
			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>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>	異鱺	V and	C	+	+		+			+			+	+		+	+		+	+	+	+
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C	+		+										+						
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R							+			+									
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+			+			+			+			+				+	+	
<i>Pterocryptis cochinchinensis</i>	越南隱鱮	NP	C																			
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+			+			+			+		+	+	+		+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+		+	+		+			+	+		+	+	+	+	+	+	+
<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	+		++																
		2x2m fish		6	2	5	5	2	2	5	2	1	5	2	1	12	8	6	10	12	10	
		No of Speices		10	3	5	8	2	2	9	2	1	9	4	1	9	4	3	8	5	4	
Amphibian																						
<i>Paramesotriton hongkongensis</i>	香港瘰螈	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																			
				Oct-14			Nov-14			Dec-14			Jan-15			Feb-15			Mar-15				
				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>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>	異鱺	V and	C	+	+		+	+		+	+		+	+		+	+		+	+			
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C																				
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+			+			+			+				
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+			+			+			+			+			+				
<i>Pterocryptis cochinchinensis</i>	越南隱鱮鯰	NP	C	+			+			+			+			+			+				
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
<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																				
		2x2m fish		40	15	20	50	20	30	60	30	30	50	20	20	40	20	20	50	20	20		
		No of Speices		12	3	4	12	3	4	12	3	4	12	4	4	12	4	4	12	4	4		
Amphibian																							
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC	+			+			+			+			+			+				

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

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“+” – Species exists in the study area

“++” – Species common in the study area

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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																	
				Apr-15			May-15			Jun-15			Jul-15			Aug-15			Sep-15		
				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>Liniparhomaloptera disparis</i>	擬平鰈	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>	異鱾	V and	C	+	+		+	+		+	+		+	+		+	+		+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C																		
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+			+			+			+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰈	NP	C	+			+			+			+			+			+		
<i>Pterocryptis cochinchinensis</i>	越南隱鱮鯨	NP	C	+			+			+			+			+			+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<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																		
		2x2m fish		40	15	20	12	4	2	10	4	2	8	4	2	10	5	2	15	7	6
		No of Speices		12	4	4	11	4	4	11	4	4	11	4	4	11	4	3	11	4	3
Amphibian																					
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC	+			+			+			+			+			+		

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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														
				Oct-15			Nov-15			Dec-15			Jan-16			Feb-16		
				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>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>	異鱺	V and	C	+	+		+	+		+	+		+	+		+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C															
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+								
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰕	NP	C	+			+			+			+			+		
<i>Pterocryptis cochinchinensis</i>	越南隱鱮鯨	NP	C	+			+			+			+			+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+		+	+		+	+		+	+		+	+	
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<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															
		2x2m fish		20	10	5	35	15	10	45	20	5	50	15	5	45	20	5
		No of Speices		12	4	1	12	4	1	12	4	1	11	4	1	11	4	1
Amphibian																		
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC	+			+			+			+			+		

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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)

				Post construction monitoring											
				Mar-16			Apr-16			May-16			Jun-16		
Species		Status	Commonness	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>Liniparhomaloptera disparis</i>	擬平鰾	NP	C	+			+			+			+		
<i>Misgurnus anguillicaudatus</i>	泥鰾	NP	C												
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+			+			+			+		
<i>Parazacco spilurus</i>	異鱾	V and	C	+	+		+	+		+	+		+	+	
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C												
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R							+			+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰾	NP	C	+			+			+			+		
<i>Pterocryptis cochinchinensis</i>	越南隱鱮鯨	NP	C	+			+			+			+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+	+		+	+		+			+		
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+
<i>Schistura fasciolata</i>	橫紋南鰾	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	20	5	40	15	5	25	10	5	25	10	5
		No of Speices		11	4	1	11	4	1	12	2	1	11	2	1
Amphibian															
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC	+			+			+					

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

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

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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			
				Jul-16			Aug-16			Sep-16			Oct-16			
				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>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>	異鱺	V and	C	+	+		+	+		+			+			
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C													
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+			+			
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰕	NP	C	+			+			+			+			
<i>Pterocryptis cochinchinensis</i>	越南隱鱮	NP	C	+			+			+			+			
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+			+			+			+			
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+	+
<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													
		2x2m fish		20	7	2	22	5	2	22	2	2	25	2	2	
		No of Speices		12	2	1	12	2	1	12	1	1	12	1	1	
Amphibian																
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC							+			+			

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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		
				Nov-16			Dec-16			Jan-17			Feb-17		
				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>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>	異鱺	V and	C	+			+			+			+		
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C												
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+			+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+			+			+			+		
<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>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												
		2x2m fish		30	2	2	35	2	2	40	2	2	45	2	2
		No of Speices		12	1	1	12	1	1	12	1	1	12	1	1
Amphibian															
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC												

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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		
				Mar-17			Apr-17			May-17			Jun-17		
				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>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>	異鱺	V and	C	+			+			+			+		
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C												
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+			+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰍	NP	C	+			+			+			+		
<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>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												
		2x2m fish		45	2	2	40	2	2	30	2	2	20	2	2
		No of Speices		12	1	1	12	1	1	12	1	1	12	1	1
Amphibian															
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC												

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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		
				Jul-17			Aug-17			Sep-17			Oct-17		
				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>Liniparhomaloptera disparis</i>	擬平鰾	NP	C	+			+			+			+		
<i>Misgurnus anguillicaudatus</i>	泥鰾	NP	C												
<i>Oreochromis niloticus</i>	尼羅口孵非鯽	NP	C	+			+			+			+		
<i>Parazacco spilurus</i>	異鱺	V and	C	+			+			+			+		
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C												
<i>Pseudobagrus trilineatus</i>	三線擬鱮	NP,GC	R	+			+			+			+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰾	NP	C	+			+			+			+		
<i>Pterocryptis cochinchinensis</i>	越南隱鱮鯨	NP	C	+			+			+			+		
<i>Puntius semifasciolatus</i>	七星魚	NP	C	+			+			+			+		
<i>Rhinogobius spp.</i>	鰕虎魚	NP	C	+	+	+	+	+	+	+	+	+	+	+	+
<i>Schistura fasciolata</i>	橫紋南鰾	NP	C	+			+			+			+		
<i>Xiphophorus hellerii</i>	劍尾魚	NP	C	+			+			+			+		
<i>Xiphophorus variatus</i>	雜色劍尾魚	NP	C												
		2x2m fish		15	1	1	20	1	1	25	1	1	25	1	1
		No of Speices		12	1	1	12	1	1	12	1	1	12	1	1
Amphibian															
<i>Paramesotriton hongkongensis</i>	香港瘰螈	P	UC					+			+			+	

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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		
				Nov-17			Dec-17		
				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>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>	異鱾	V and	C	+			+		
<i>Poecilia reticulata</i>	孔雀花魚將	NP	C						
<i>Pseudobagrus trilineatus</i>	三線擬鱧	NP,GC	R	+			+		
<i>Pseudogastromyzon myersi</i>	麥氏擬腹吸鰈	NP	C	+			+		
<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>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						
		2x2m fish		25	1	1	25	1	1
		No of Speices		12	1	1	12	1	1
Amphibian									
<i>Paramesotriton hongkongensis</i>	香港瘰螈	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 4.7 Abotic data for Upper Tai Po River (T1- Upper stream sampling site and T2- Lower stream sampling site)

Parameters/ Date	Baseline survey		Impact monitoring												Impact monitoring						
	Oct-07	Jan-09		Jul-09		Jan-10		Jul-10		Jan-11		Jul-11		Jan-12		Jul-12		Mar-13		Jul-13	
Replicate	T1	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
DO (mg/L)	8.2	9	4	6.3	6	9.4	8.8	9	6.5	10.5	9.8	9	8.2	8.8	8.4	7.6	7.8	7.9	8.1	8	7.8
pH	6.9	7.18	6.86	7.28	6.96	8.2	8.5	7.3	7.2	6.9	7.1	7.1	7.3	6.8	7.6	6.9	7.8	6.8	7.5	7.2	7.6
Nitrate (mg N/L)	0.39	0.1	1.3	0.07	1.32	0.12	0.71	0.1	0.5	0.1	0.5	0.1	0.5	<0.1	0.5	0.29	0.26	0.15	0.22	0.21	0.29
Ammonia (mg/L)	<0.01	PO4-P (µg P/L): <100		0.01	0.22	<0.01	0.2	0.1	0.2	0.01	0.3	0.01	0.2	<0.01	0.3	<0.01	0.03	<0.01	0.02	<0.01	0.04
Salinity (ppt)	<0.1	<0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.01	0.01	0.02	0.01	0.01
Conductivity (mS/cm)	40	40	190	34	118	42	72	49	43	50	60	50	60	65	74	52	54	54	58	44	42
BOD (mg/L)	<2	<2	12	<2	<2	<2	2	<2	2	2	<2	<2	2	<2	3	<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		0.01-0.2		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)	0.2-0.5	0.2-0.5		0.2-0.5		0.2-0.5		0.2-0.5		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 (%)	15	15		15	25	15	25	15	25	15	25	15	25	15	15	15	15	0	0	0	0
Stone (%)	80	80		80	70	80	70	80	70	80	70	80	70	80	70	80	70	40	20	40	20
Mud (%)	5	5		5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0
Concrete(%)	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	60	80	60	80

