

Appendix 12-8 Methodology and Results of Herpetofauna Surveys

Methodology

ENSR (2009) conducted a detailed survey for herpetofauna (from April to November 2008 for reptiles and from March to September 2008 for amphibians) in LMC Loop and within a 500m boundary from the Loop. In addition, both daytime and night-time herpetofauna surveys were carried out around the Loop (i.e. from May to August 2008 at Ha Wan Tsuen, Lok Ma Chau San Tsuen and Hoo Hok Wai) for LUPCAFS. It was thus considered that herpetofauna data for some areas, (LMC Loop, the alignment of the Western Connection Road and certain parts of HHW), were sufficient. However, surveys were carried early in the wet season of both 2009 and 2010 to confirm site conditions remained similar.

A critically endangered species, Three-banded Box Terrapin *Cuora trifasciata*, was observed in the middle section of Ma Tso Lung Stream during the survey for the NENT NDA PES. As this stream was potentially affected by the eastern road connection focussed surveys were carried out in the potential habitats for this species and in areas not surveyed in previous work. Surveys for herpetofauna were conducted according to the schedule in **Table A12-17**. In addition, two extra night surveys for Three-banded Box Terrapin were carried out along Ma Tso Lung Stream in June 2010.

Table A12-17 Schedule of herpetofauna surveys

Site	2009					2010		
	Jun	Jul	Aug	Sep	Oct	Mar	Apr	May
LMC Loop, Ha Wan Tsuen, LMC Tsuen, Hoo Hok Wai areas close to the Loop (i.e. areas within the 500-m boundary from the Loop)	1d, 1n	1d, 1n				1d, 1n	1d, 1n	1d, 1n
Areas close to Lung Hau Road, Chau Tau, Pun Uk Tsuen, Hoo Hok Wai areas outside the 500-m boundary from the Loop	1d, 1n	1d, 1n	1d, 1n	1d	1d	1d, 1n	1d, 1n	1d, 1n
Ma Tso Lung Stream and riparian areas (middle and upper sections), and Tse Koo Hang Stream and riparian areas	1d, 2n	1d, 2n	1d, 2n	1d, 2n	1d, 2n	1d, 2n	1d, 2n	1d, 2n

d: daytime survey, n: nighttime survey.

Survey methods followed that documented in the EIAO Guidance Note No. 10/ 2004. Reptiles and amphibians seen or heard were recorded during general walk-through surveys along fixed transects. Microhabitats were actively searched. For Three-banded Box Terrapin, trapping was not considered to be an option as all stream sections are close to village houses, and it was feared that any trapped animal may be taken. Indeed, several traps placed by others were found along the Ma Tso Lung Stream and a villager claimed they had been set up by him.

Results

LMC Loop

A total of eight amphibian species were recorded, comprising Asian Common Toad *Bufo melanostictus*, Paddy Frog *Fejervarya limnocharis*, Spotted Narrow-mouthed Frog *Kalophrynus interlineatus*, Butler's Pigmy Frog *Microhyla butleri*, Ornate Pigmy Frog *Microhyla ornate*, Gunther's Frog *Rana guentheri*, Two-striped Grass Frog *Rana taipehensis* and Brown Tree Frog *Polypedates megacephalus*. They were mainly recorded in the reedbed and grassland after heavy rainfall; some were also found in abandoned ponds. Except for

Two-striped Grass Frog, all species are common and widespread in Hong Kong (Chan *et al.* 2005).

Two-striped Grass Frog was found inside LMC Loop in May 2010. Individuals were recorded in wet grassland after heavy rain and in abandoned ponds. This species is considered to be uncommon locally (Chan *et al.* 2005) and of local conservation concern (Fellowes *et al.* 2002).

One Long-tailed Skink *Mabuya longicaudata* and one Reeve's Smooth Skink *Scincella reevesii* were also recorded. These species are common and widespread in Hong Kong (Karsen *et al.* 1998) and of no conservation significance.

Area of Western Connection Road and Lok Ma Chau Tsuen

Ten amphibian species were recorded in this area, comprising Asian Common Toad, Paddy Frog, Chinese Bull Frog *Hoplobatrachus chinensis*, Asiatic Painted Frog *Kaloula pulchra*, Spotted Narrow-mouthed Frog, Butler's Pigmy Frog, Ornate Pigmy Frog, Marbled Pigmy Frog *Microhyla pulchra*, Gunther's Frog and Brown Tree Frog.

Although usually considered to be locally common and/ widespread (Chan *et al.* 2005), Chinese Bull Frog is regarded as of potential regional concern (Fellowes *et al.* 2002) and is also listed as a Class II Protected Species in Mainland China (CSIS 2010). The local population of this species is also considered to be diminishing (Chan *et al.* 2005). In this area, a small population of Chinese Bull Frog was found in the wet agricultural land at Lok Ma Chau Tsuen. Two individuals were also heard in abandoned ponds near the village. One individual was also heard in the dry agricultural land at Chau Tau.

Five reptile species were recorded, comprising Bowring's Gecko *Hemidactylus bowringii*, Long-tailed Skink, Chinese Cobra *Naja atra*, Common Rat Snake *Ptyas mucosus* and Chinese Striped Terrapin *Ocadia sinensis*.

Both Chinese Cobra and Common Rat Snake are considered to be of potential regional concern (Fellowes *et al.* 2002); they are also considered to be vulnerable in mainland China (CSIS 2010). One individual of the former species was observed on the hillside behind Pun Uk Tsuen, and one dead individual of the latter was observed on a fish pond bund at Ha Wan Tsuen.

Chinese Striped Terrapin is not considered to be native to Hong Kong (Karsen *et al.* 1998); the single one observed in the marsh at Chau Tau is very likely to have been a released individual.

Other reptile species recorded are common and widespread (Karsen *et al.* 1998).

Alignment of Eastern Connection Road, Border Road Area and Hoo Hok Wai

Ten amphibian species were recorded, comprising Asian Common Toad, Paddy Frog, Asiatic Painted Frog, Spotted Narrow-mouthed Frog, Butler's Pigmy Frog, Ornate Pigmy Frog, Marbled Pigmy Frog, Gunther's Frog, Two-striped Grass Frog and Brown Tree Frog. Excluding Two-striped Grass Frog, all species are common and widespread (Chan *et al.* 2005).

Two-striped Grass Frog was heard in a pond alongside the Border Road as well as in an abandoned pond and marsh at Hoo Hok Wai.

Reptile species recorded comprised Bowring's Gecko, Changeable Lizard *Calotes versicolor*, Indo-Chinese Rat Snake *Ptyas korros*, Common Rat Snake and Checkered Keelback *Xenochrophis piscator*. With the exception of Indo-Chinese and Common Rat Snakes, the other three species are not of conservation concern. One Common Rat Snake was observed in a marsh next to Ngau Kok Shan, while an Indo-Chinese Rat Snake was recorded at the edge of a fish pond in the same area (see **Figure 12-04**).

Tse Koo Hang and Ma Tso Lung

Ten amphibian species were recorded in this area, comprising Asian Common Toad, Paddy Frog, Chinese Bull Frog, Asiatic Painted Frog, Spotted Narrow-mouthed Frog, Butler's Pigmy Frog, Ornate Pigmy Frog, Marbled Pigmy Frog, Gunther's Frog and Brown Tree Frog. All these are considered to be locally common and/ widespread (Chan *et al.* 2005); but Chinese Bull Frog is considered to be of conservation concern. Chinese Bull Frog was mainly found in the agricultural lands at both Ma Tso Lung and Tse Koo Hang, as well as the Ma Tso Lung Stream.

Changeable Lizard, Long-tailed Skink, Chinese Cobra, Common Rat Snake and Checkered Keelback were recorded in this area. Chinese Cobra was observed in the shrubland at Ma Tso Lung, while Common Rat Snake was observed in Tse Koo Hang Stream and the shrubland at Ma Tso Lung.

Table A12-18 Maximum counts of herpetofauna in different areas. WCR = Western Connection Road, ECR = Eastern Connection Road.

Scientific Name	Common Name	Conservation Status	LMC Loop	Area of WCR	Area of ECR, Border Road and Hoo Hok Wai	Tse Koo Hang and Ma Tso Lung
<i>Bufo melanostictus</i>	Asian Common Toad 黑眶蟾蜍	-	10	6	10	15
<i>Fejervarya limnocharis</i>	Paddy Frog 澤蛙	-	20	37	12	24
<i>Hoplobatrachus chinensis</i>	Chinese Bull Frog 虎紋蛙	Class II Protected Animal in China ¹ , Potential Regional Concern ² .	0	7	0	14
<i>Kalophrynus interlineatus</i>	Spotted Narrow-mouthed Frog 條紋狹口蛙	-	10	100+	100+	100+
<i>Kaloula pulchra</i>	Asiatic Painted Frog 花狹口蛙	-	0	100+	50+	50
<i>Microhyla butleri</i>	Butler's Pigmy Frog 粗皮姬蛙	-	50+	50+	100+	100+
<i>Microhyla ornata</i>	Ornate Pigmy Frog 飾紋姬蛙	-	70	50+	100+	100+
<i>Microhyla pulchra</i>	Marbled Pigmy Frog 花姬蛙	-	0	30	40	100+
<i>Rana guentheri</i>	Gunther's Frog 沼蛙	-	100+	50+	100+	10
<i>Rana taipehensis</i>	Two-striped	Local Concern ²	40	0	30	0

Scientific Name	Common Name	Conservation Status	LMC Loop	Area of WCR	Area of ECR, Border Road and Hoo Hok Wai	Tse Koo Hang and Ma Tso Lung
	Grass Frog 台北蛙					
<i>Polypedates megacephalus</i>	Brown Tree Frog 斑腿泛樹蛙	-	100+	50+	50+	29
<i>Calotes versicolor</i>	Changeable Lizard 變色樹蜥	-	0	0	1	1
<i>Hemidactylus bowringii</i>	Bowring's Gecko 原尾蜥虎	-	0	1	1	0
<i>Mabuya longicaudata</i>	Long-tailed Skink 長尾南蜥	-	1	2	0	1
<i>Scincella reevesii</i>	Reeve's Smooth Skink 南滑蜥	-	1	0	0	0
<i>Naja atra</i>	Chinese Cobra 眼鏡蛇	Potential Regional Concern ² , Vulnerable ⁴ , Appendix II of CITES ⁵ .	0	1	0	1
<i>Ptyas korros</i>	Indo-Chinese Rat Snake 灰鼠蛇	Potential Regional Concern ² , Vulnerable ⁴ .	0	0	1	0
<i>Ptyas mucosus</i>	Common Rat Snake 滑鼠蛇	Potential Regional Concern ² , Vulnerable ⁴ , Appendix II of CITES ⁵ .	0	1	0	2
<i>Xenochrophis piscator</i>	Checkered Keelback 漁游蛇	-	0	0	1	1
<i>Ocadia sinensis</i>	Chinese Striped Terrapin 花龜	Considered to be an exotic species by Karsen <i>et al.</i> (1998).	0	1	0	0

Notes:

- [1] <http://www.sepa.gov.cn>
- [2] Fellowes et al. (2002)
- [3] IUCN (2010)
- [4] CSIS (2010)
- [5] UNEP-WCMC (2009).