

**Bird Survey Manual for
“Studying Landbirds in Important Bird Habitats of Hong Kong,
especially in the IBAs”**

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Introduction

Bird is often adopted as a key indicator of the state of the environment and biodiversity (Furness, Greenwood & Jarvis 1993¹). This is understandable because bird feed on all level of the food chain. Monitoring birds through continuous and systematic survey is important to collect this information for understanding the trends of birds and the change of the environment. Long-term monitoring of birds provides sufficient data to the conservation of bird species especially those under great threats.

Part I Purpose

Hong Kong Bird Watching Society (HKBWS) recognizes the importance of collecting accurate data on the bird population and species diversity of Hong Kong continuously, not only to monitor the health of the birds in the best sites in Hong Kong, not only to provide data for management consideration, but also provide data that could give some hints or partial answer to the effect of weather to birds.

The data that are collected in this project can allow us to monitor or gauge:

- a. The general health of the habitat for birds,
- b. The relative abundance of the birds in each section of the sites,
- c. The seasonal changes of the bird population,
- d. The annual variation or fluctuation of the bird population,

¹ Furness, R.W., Greenwood, J.J.D & Jarvis P.J. 1993. Can birds be used to monitor the environment. In *Birds as monitors of environmental change* (eds Furness, R.W. & Greenwood, J.J.D.). Chapman & Hall. pp.1-41.

e. The effect of occasional severe weather such as the very cold winter in Jan-Feb 2008,

Once we have over 10 years of data, then it may be possible to see some effect of:

f. Long term habitat changes in relation to birds,

g. Possible effect of long-term climate change.

Part II Methodology

2.1 Line transect technique is used to survey the species (diversity) and number of birds (total population) and to include the best sites in terms of bird density and species diversity.

2.2 Is limited by accessibility: road and footpath are the only choices in this project. Whole transect is sub-divided into about 10 sections, so that data from each section are recorded independently.

2.3 All species were recorded visually or aurally on the two sides of transect.

2.4 Bird survey will be conducted between 0800h to 1200h or 1400h to 1900h once per week that is around 3 - 4 hours would be spent in each bird survey throughout the study period.

2.5 Survey time is based on the peak activity of birds during the pilot survey.

2.6 Arrival time at the beginning and ending of each survey sub-section is recorded, so as the weather of the whole survey period.

2.7 In summer, bird survey frequency might be reduced to biweekly in case of bad weather, such as heavy raining or typhoon.

2.8 The survey frequency is typically once a week, the survey data is not sufficient to monitor day to day variation.

2.9 Week to week variation could not be clearly seen either, although some particular case studies might be done. Realistically, month to month variation what we can safely expect. That would be sufficient to study the changes in abnormal summer or winter months.

Part III Survey sites and details

Sites for survey	Category	Protection status	Main habitat(s)	Threatened and conservation species recorded at each site
1. Kam Tin	Farmland birds	Important site for farmland specialists	Farmland	Greater Painted Snipe (local conservation concern), Grey-headed Lapwing (local conservation concern) and all farmland species
2. Mai Po and surrounding area including Lut Chau and Tam Kon Chau		IBA / Ramsar site / SSSI / Important site for endangered species	Farmland & fish pond	Brown-chested Jungle Flycatcher (vulnerable), Manchurian Reed Warbler (vulnerable), Styan's Grasshopper Warbler (vulnerable), Japanese Marsh Warbler (vulnerable), Japanese Yellow Bunting (vulnerable), Japanese Paradise Flycatcher (near threatened), Japanese Reed Bunting (near threatened)
3. Shing Mun Country Park	Forest birds	IBA / SSSI	Well-established 'fung shui' woodland	Fairy Pitta (vulnerable), Japanese Paradise Flycatcher (near threatened) and all forest species
4. Tai Po Kau Nature Reserve		IBA / Special area	Mature secondary forest	Fairy Pitta (vulnerable), Brown-chested Jungle Flycatcher (vulnerable), Japanese Paradise Flycatcher (near threatened), Large Grass Warbler (near threatened) and all forest species
5. Ng Tung Chai		IBA / SSSI	Large ravine with mature woodland	Large Grass Warbler (near threatened), Japanese Paradise Flycatcher (near threatened) and all forest species
6. Tai Mo Shan	Montane Grassland birds	IBA / Important site for Large Grass Warbler and montane grassland specialists	Grassland & scrubland	Large Grass Warbler (near threatened) and montane grassland species

Part IV Recording the change of habitat

4.1 Conducting surveys by recording the type of habitats and vegetation along the survey transects. Under this project, regular surveys will be conducted in six sites. Due to the difference in terms of habitats among these six sites, frequencies of surveys are dissimilar.

4.1.1 For the sites of Tai Po Kau Nature Reserve, Shing Mun Country Park, Ng Tung Chai, Tai Mo Shan, Mai Po (south-eastern part only) and its surrounding areas (Tam Kon Chau Road and Lut Chau), annual survey is suggested to be conducted due to the single habitat of these areas, especially these areas are all within the boundary of

country park, Ramsar Site or nature reserve under control by government.

4.1.2 For Kam Tin, half-yearly survey is suggested to be conducted due to the considerable human activities occur within this area, such as dumping of construction waste, seasonal agricultural usage and the construction of private houses and public facilities.

4.2 However, for sudden changes of habitats or special incidence happened around these sites which may affect the environment, we will also record and report to AFCD as soon as we can. This is a more flexible measure to monitor the sites and collecting most updated information.

4.3 Hence, at least twenty surveys will be conducted during the project period (Table 1).

Table1: Schedule of surveys

Site	2008	2009		2010	
	Nov	May	Nov	May	Nov
Tai Po Kau Nature Reserve	✓		✓		✓
Shing Mun Country Park	✓		✓		✓
Ng Tung Chai	✓		✓		✓
Tai Mo Shan	✓		✓		✓
Mai Po and its surrounding areas	✓		✓		✓
Kam Tin	✓	✓	✓	✓	✓

4.4 Apart from the above measures, we will also collect information about the relationship between plants and birds by:

4.4.1 marking the location of fruiting and flowering plants which are considered to be attractive to birds along the transect of the survey sites; and

4.4.2 recording the location of ‘bird flocks’ (Table2) which are considered to be important to indicate the relationship to the flowering or/and fruiting plants during the bird surveys. For the definition of ‘bird flock’, we will consider the birds as a ‘bird flock’ when they move together across one to three tree canopies, no matter they are the same or different species¹. A flock of birds in-flight in open area will not be recorded. Therefore, only when there is a significant number of birds will be considered as “bird flock” during the surveys.

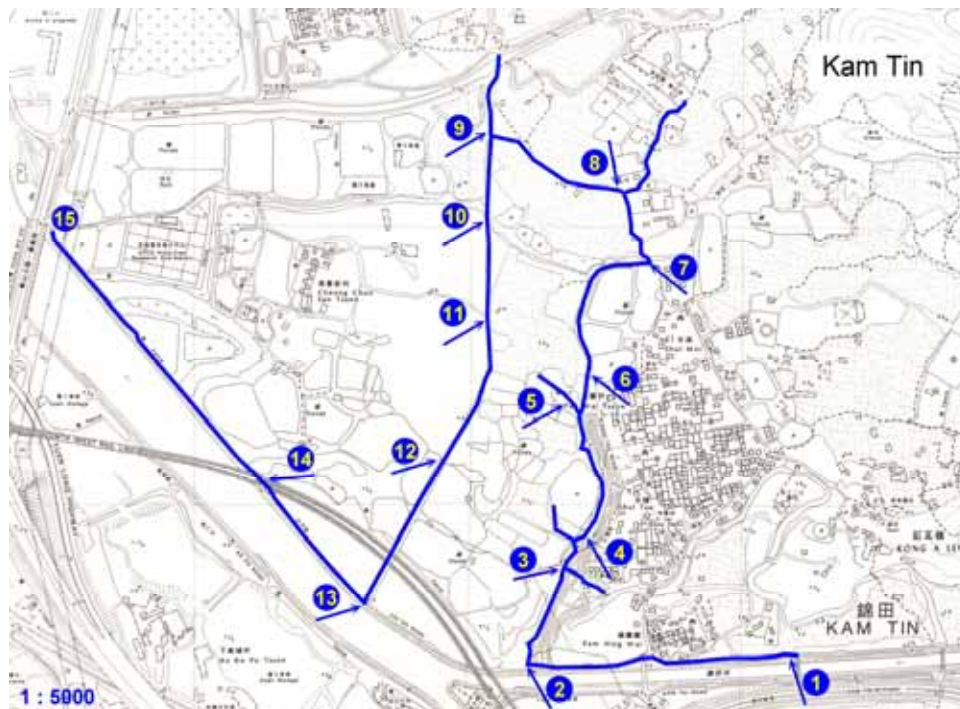
Table 2: Definition of 'bird flock' in terms of numbers of birds in group

Sites	Size of bird flock		
	Small	Median	Large
Tai Po Kau Nature Reserve	10 to 20 birds/individuals	21 to 40 birds/individuals	41 or above birds/individuals
Shing Mun Country Park			
Ng Tung Chai			
Tai Mo Shan			
Mai Po and surrounding area	20 to 40 birds/individuals	41 to 80 birds/individuals	81 or above birds/individuals
Kam Tin			

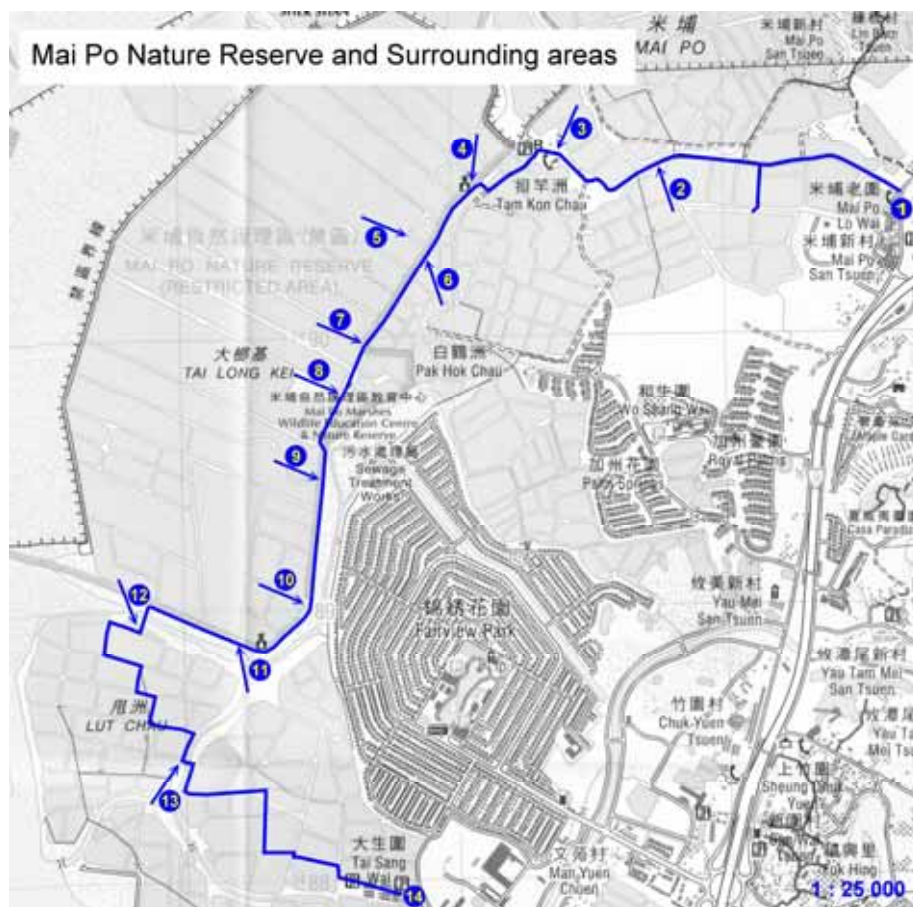
Note 1: The definition of 'bird flock' is drawn from the discussion within our survey committee where professional experience and different situation among the sites were all being considered.

Appendix: Survey transect of the six studying sites

1. Kam Tin

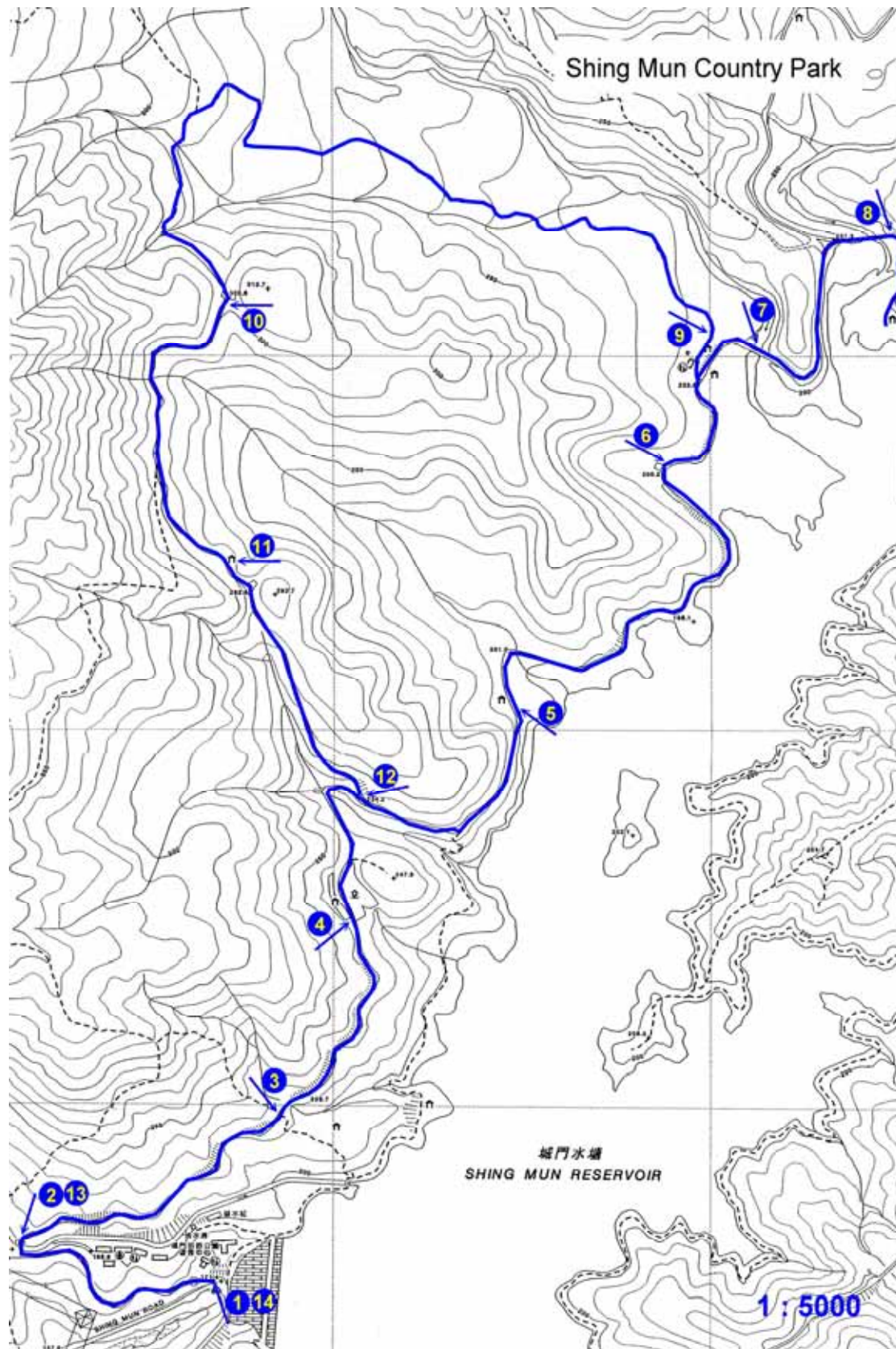


2. Mai Po and its surrounding areas including Lut Chau and Tam Kon Chau

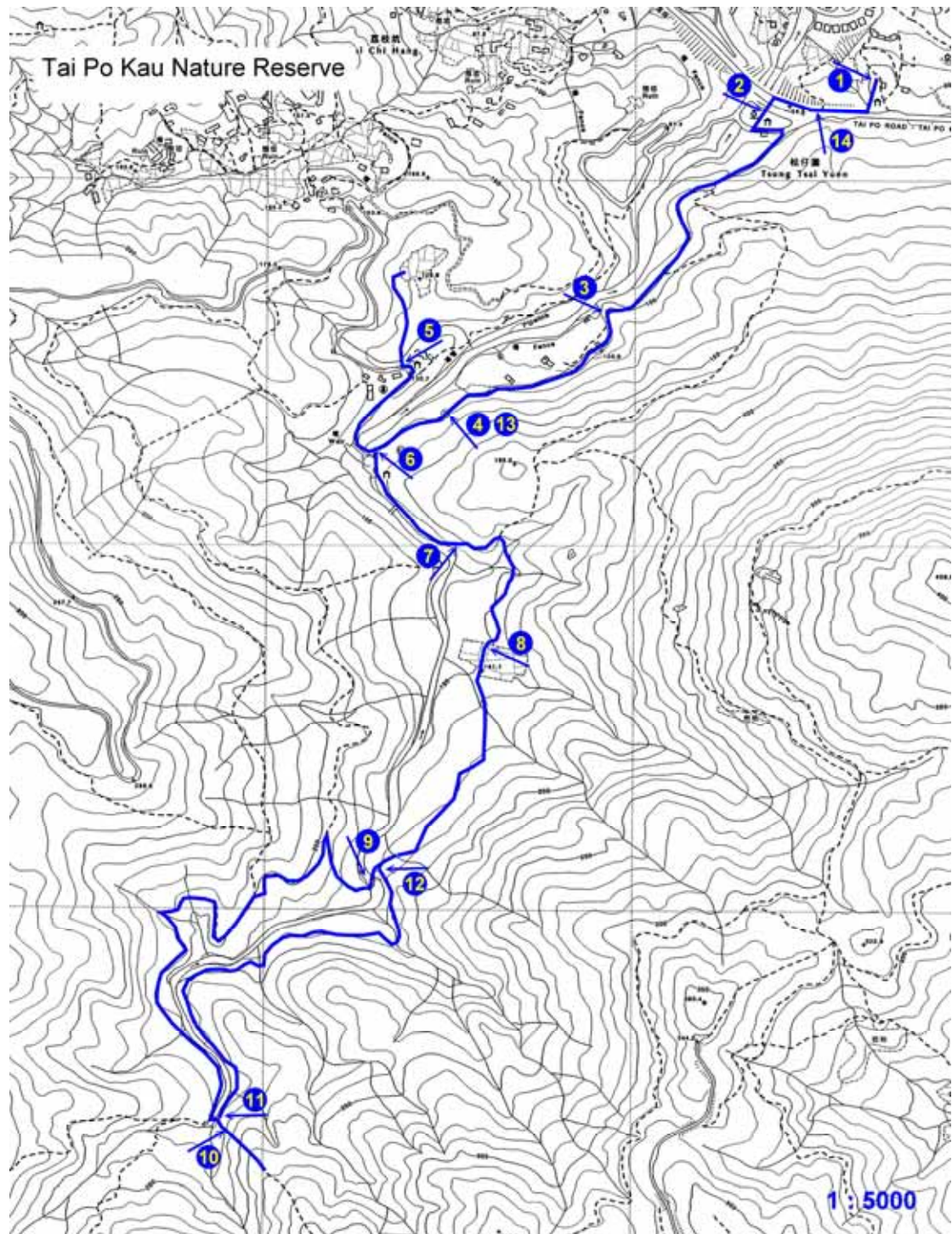


Note:
① Transect line
① Point section

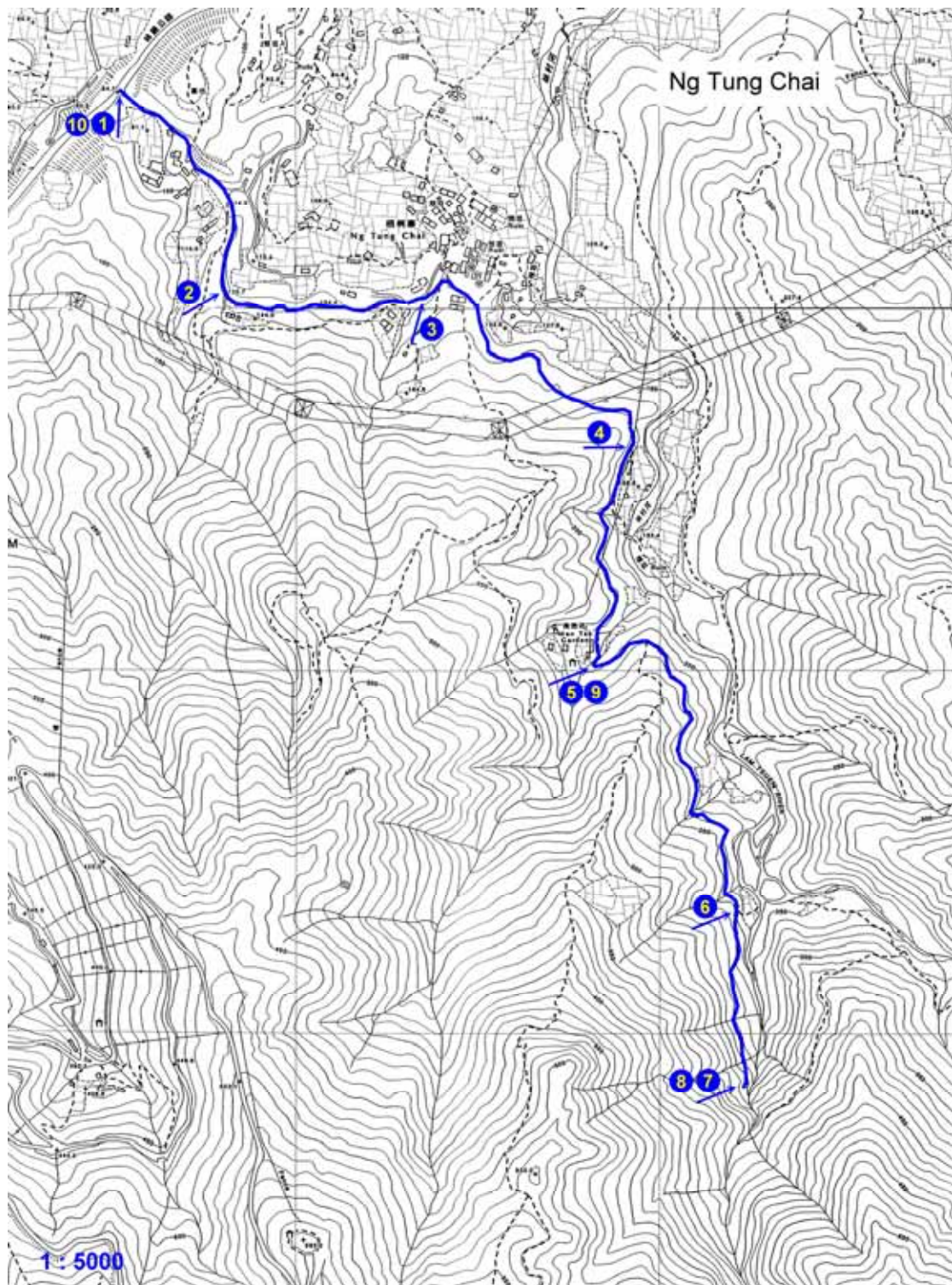
3. Shing Mun Country Park



4. Tai Po Kau Nature Reserve



5. Ng Tung Chai



6. Tai Mo Shan

