JC-WISE
Water Initiative on Sustainability and Engagement
賽馬會惜水・識河計劃

"My River, My Community" Scheme

Workshop and Guided field-trip to Tung Chung River Catchment

24 October 2018

How to conduct fieldwork along Tung Chung River

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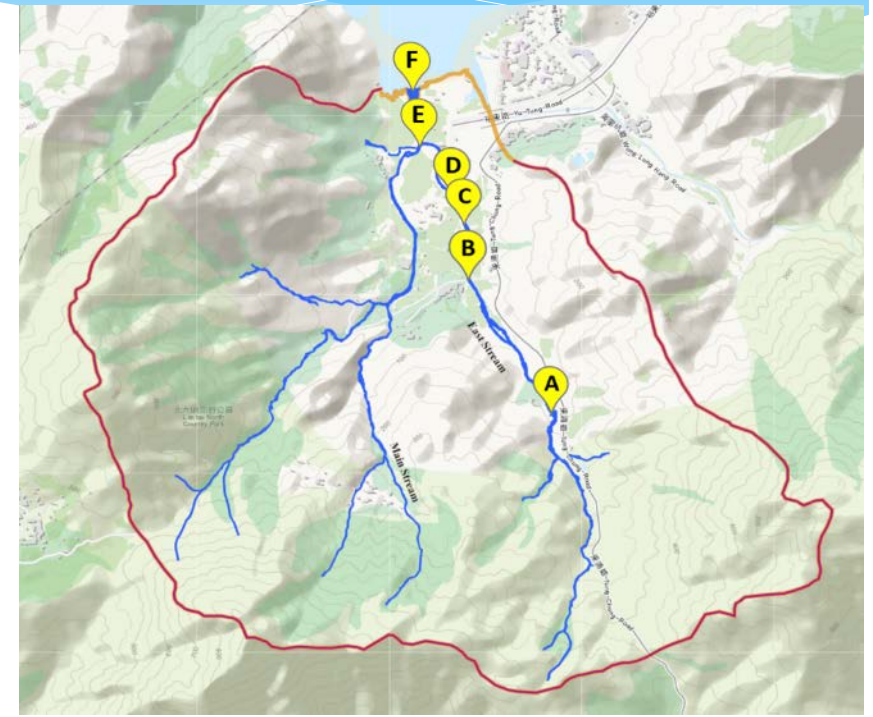
About Tung Chung River

- originated at an altitude of 880 m between Fung Leng (鳳嶺) and Wong Leng (凰嶺) of Lantau Peak (鳳凰山)
- river with the third highest headwater in HK
- The **main stream (West Stream)** flows north through Pak Tin Mun (北天門), Tei Tong Tsai (地塘仔), Chap Mun Tau (閘門頭) and Mok Ka (莫家)
- Before entering Tung Chung Bay, the main stream merges with a **major tributary (East Stream)** at the location between Ngau Au (牛凹) and Wong Ka Wai (黃家圍).



About Tung Chung River Field Study

Relevance to the DSE GEOG curriculum

- This field study is related to **'Managing Rivers and Coastal Environments – A continuing challenge'** (Compulsory Part)

Objectives

- To investigate the **characteristics of different courses of the river;**
- To investigate the **restoration of a damaged river** to its natural state
- To examine the proposal of **developing a river park.**

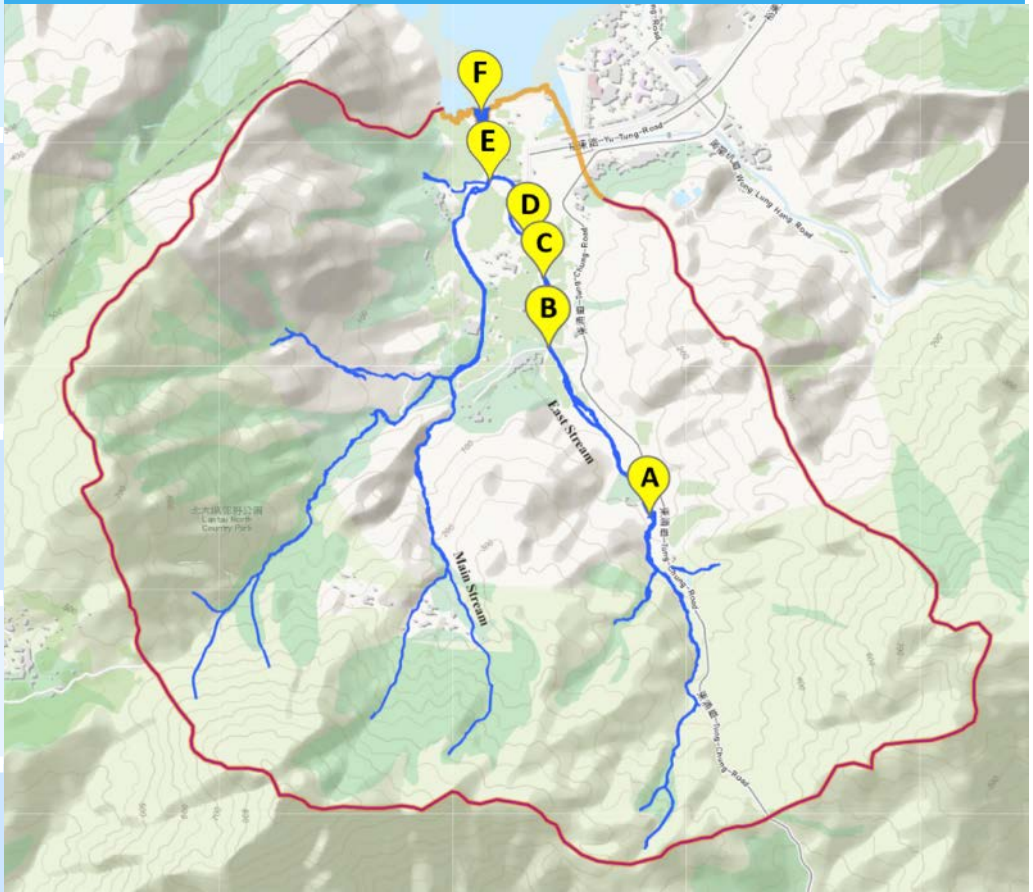
About Tung Chung River Field Study

The **fundamental enquiry** in the field study of Tung Chung River focuses on two topics:

1. What are the **differences in landform and ecological characteristics between the upper course, lower course and river mouth**? What are the **human impacts** of these sections of the river?
2. How can we turn the section of the river, which is close to Tung Chung New Town, into a **River Park**?

Tung Chung River: The field sites

A	**Shek Pik Reservoir Intakes**	石壁水塘集水口
B	**Shek Mun Kap**	石門甲
C	**Shek Lau Po --** Location of illegal excavation incident	石榴埔 -- 「東涌河挖石事件」位置
D	**Shek Lau Po --** Channelised lower course	石榴埔 -- 渠道化下游
E	**Ngau Au --** the confluence of East and West Streams	牛凹 -- 東、西河匯流點
F	**Estuary**	河口



About Tung Chung River Field Study

		Enquiry Question 1	Enquiry Question 2
		Upper Course & R. Mouth	Tung Chung R. Park
A	**Shek Pik Reservoir Intakes**	✓	
B	**Shek Mun Kap**	✓	
C	**Shek Lau Po** -- Location of illegal excavation incident		✓
D	**Shek Lau Po** -- Channelised lower course		✓
E	**Ngau Au** – Confluence of East & West Streams	✓	
F	**Estuary**	✓	

Enquiry Question 1

- What are the **differences in landform and ecological characteristics between the upper course, lower course and river mouth**?
- What are the **human impacts** of these sections of the river?

- **Field sites A & B: Upper course –** flow diverted to Shek Pik Reservoir
- **Field Site E: Confluence –** meeting of East & West Streams
- **Field site F: River mouth**

Enquiry Question 1 – Upper Course

Field site A

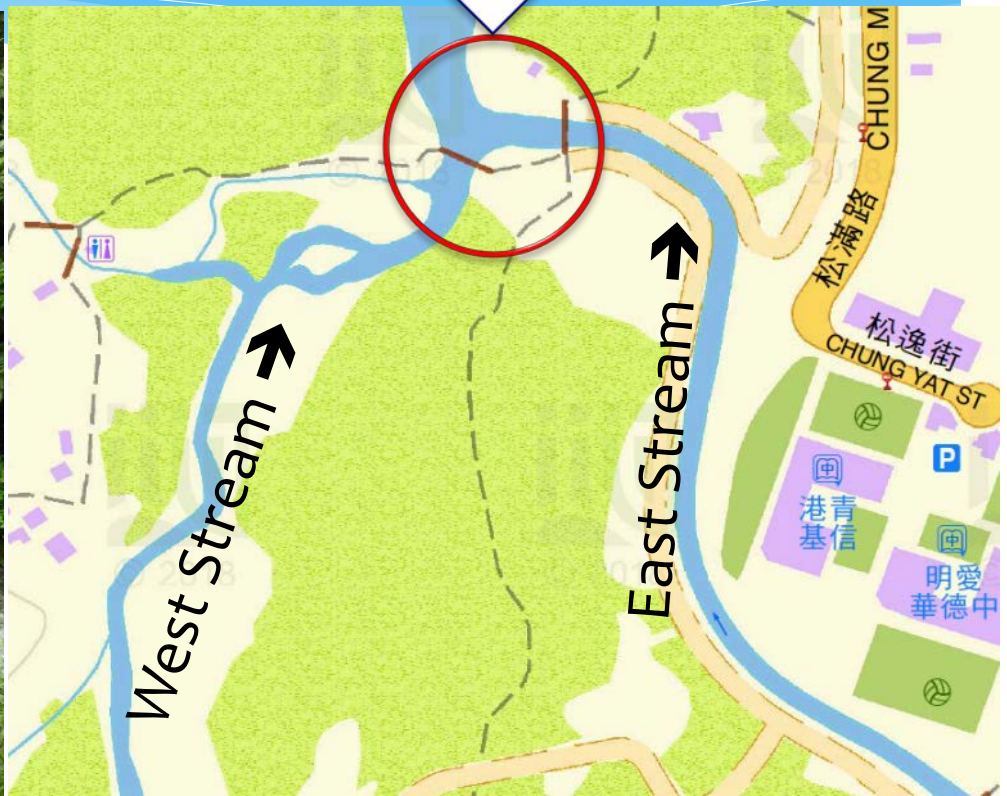
Shek Pik Reservoir Intake

Enquiry Question 1 – Upper Course
Field sites A: Shek Pik Reservoir Intake

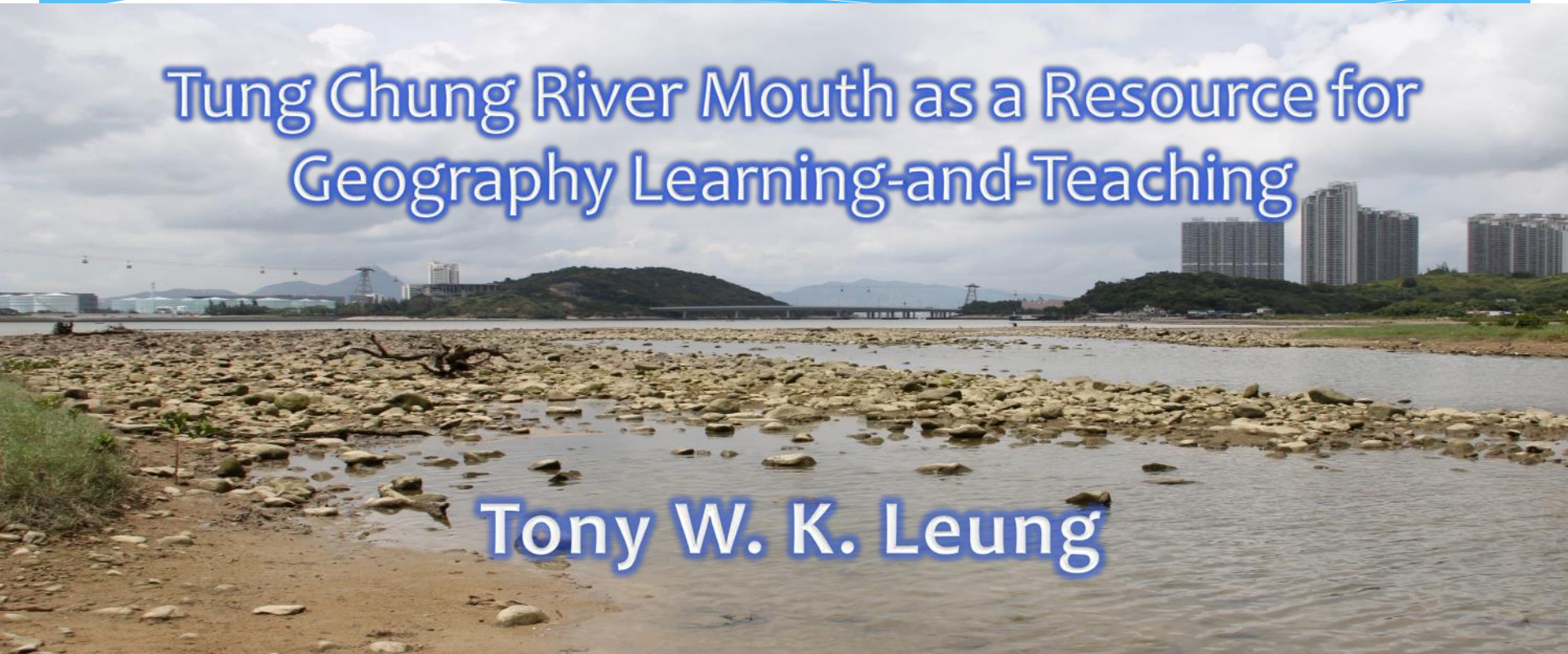
Enquiry Question 1 – Upper Course
Field sites B: Shek Mun Kap

Upper course characteristics

Enquiry Question 1 – Confluence
Field site E



Enquiry Question 1 – R Mouth Study Field site F

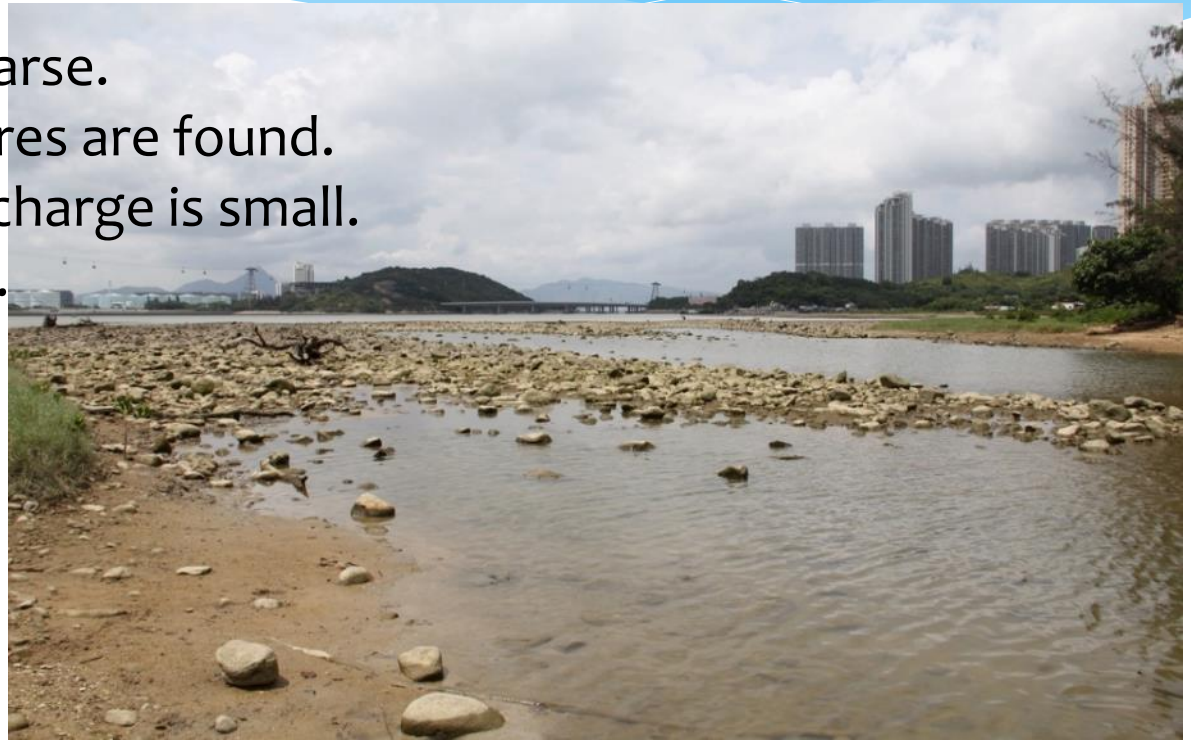


CE2006-II-44

44. The photograph shows a river in Hong Kong. What photo evidence indicates that it is the lower course of a river?

(1) The river load is coarse.
(2) Depositional features are found.
(3) The amount of discharge is small.
(4) The relief is gentle.

A. (1) and (3) only
B. (2) and (4) only
C. (1), (2) and (4) only
D. (1), (2), (3) and (4)



AL2005-I-1

(b) There is a bridge at 019658 over the streams shown in Photographs 1a and 1b. You are now standing on this bridge.

(i) In order to take Photograph 1b, in which **direction** should the camera be facing? (1 mark)

(ii) Describe the **morphological changes** in the stream channel after the illegal excavation of boulders. (3 marks)

(iii) What will be the **ecological impact** of this illegal excavation on the stream? (3 marks)

(iv) Using map evidence, explain **why** this excavation work was **not carried out at 030638** which is closer to the main road (2 marks)


告示
此段溪澗已經完成修復
請愛護環境及各種生物
NOTICE
THIS STREAM SECTION HAS BEEN REINSTATED
PLEASE RESPECT THE ENVIRONMENT AND WILDLIFE
離島民政事務處示
ISLANDS DISTRICT OFFICE

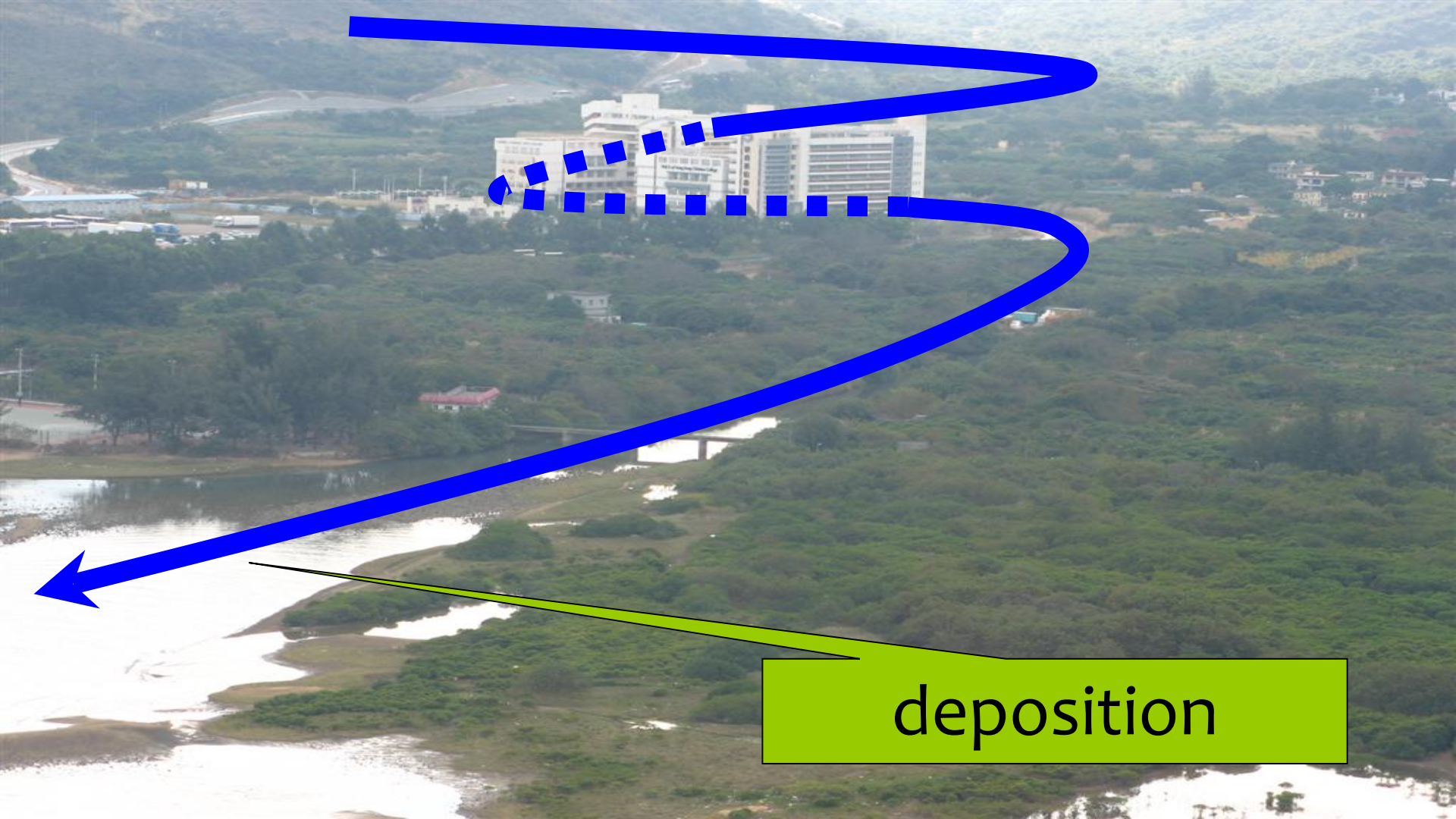
2. 管理河流和海岸環境：一個持續的挑戰

本單元旨在介紹淡水和海水如何創造不同的河流和海岸環境，重點說明水作用如何隨著時間和空間而轉變，以及造成這些轉變背後的原因。透過研習水作用的各種變化和由此形成的地貌，學生可對不同的自然和人文因素的相互作用所造成的地表形貌，以及由於人類對河流和海岸環境干擾活動日益頻繁而引致的管理議題有基本的理解。學習目標應集中於透徹理解有關侵蝕、運輸和沉積等地理概念，並把這些概念轉移及應用於學習其他環境的地貌。

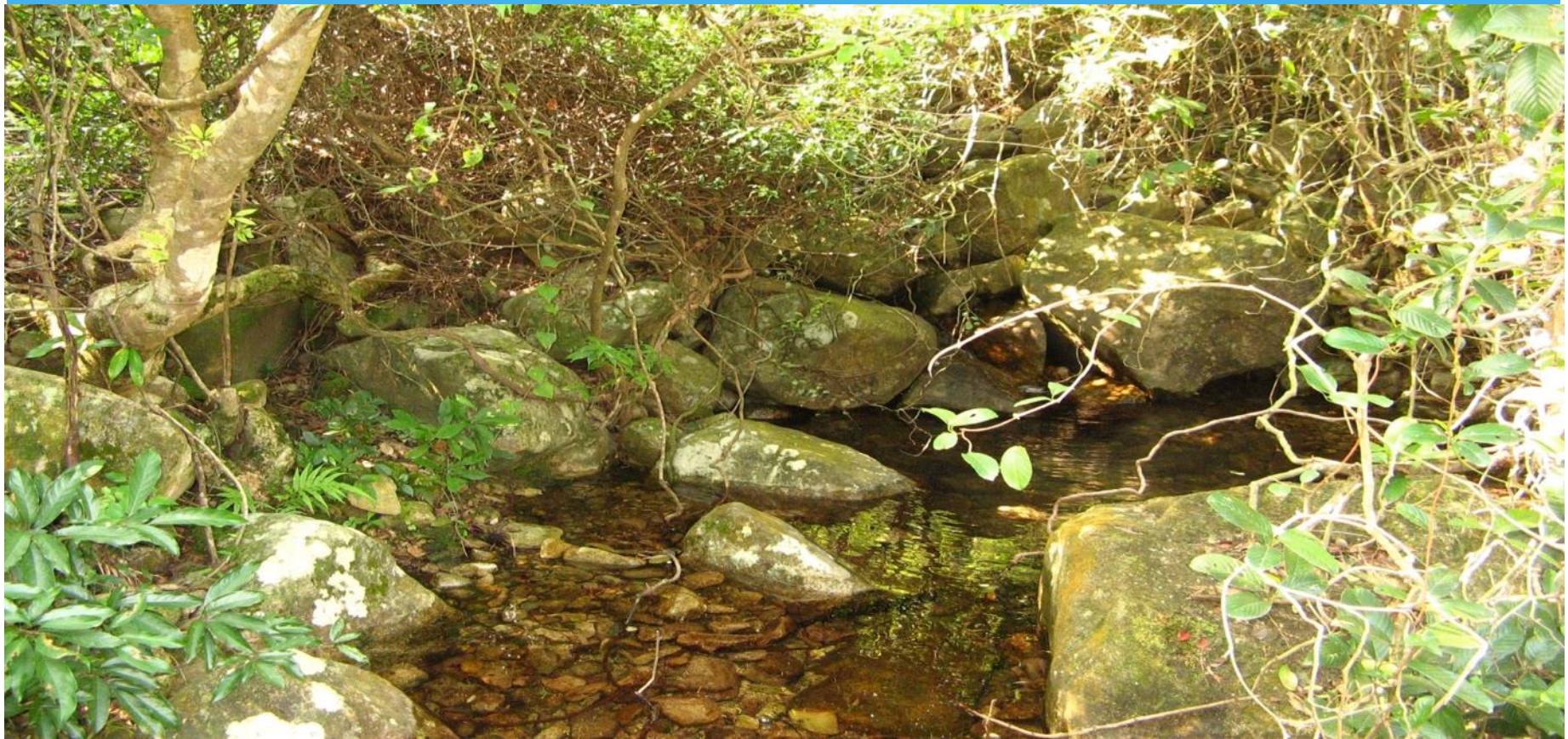
問題指引	說明	概念	技能及建議學習活動
1. 水如何塑造河流和海岸？	• 選擇不同河段及海岸的不同形貌進行探究 • 從本港的溪流（建議進行實地考察）或中國的河流（例如：長江）中選取例子 • 從本港的海岸（建議進行實地考察）或英國的海岸選取例子	區位與分布 形態	• 透過直接觀察識別河流/海岸的主要形貌 • 從照片或錄像比較不同的河流/海岸環境 • 在實地考察中利用繪畫草圖、拍照或攝錄來記錄有關河流/海岸的資料
2. 在不同河段中有哪些主要作用在運作？ 3. 上述的差異創造了哪些主要形貌？	• 河流的主要侵蝕（水力作用、磨蝕、磨耗、溶蝕）、運輸（推移、躍移、懸移、溶蝕）和沉積作用 • 沿流而下時河流在速度、流量、效率、河道形貌所出現的變化及影響這些變化的因素 • 主要地貌：峽谷、瀑布及急流、曲流及相關地貌、泛濫平原、天然堤、辮狀河、三角洲	河流作用 自然因素的相互作用 隨空間變化而出現的改變 地貌	• 為照片加上註釋以描述不同河段的特徵 • 採用合適的表達方式解釋沿流而下時各種河流作用的差異 • 在地圖上界定河盆的邊界 • 繪畫縱剖面/橫切面以顯示各種的河流形貌

時間分配：　24 小時

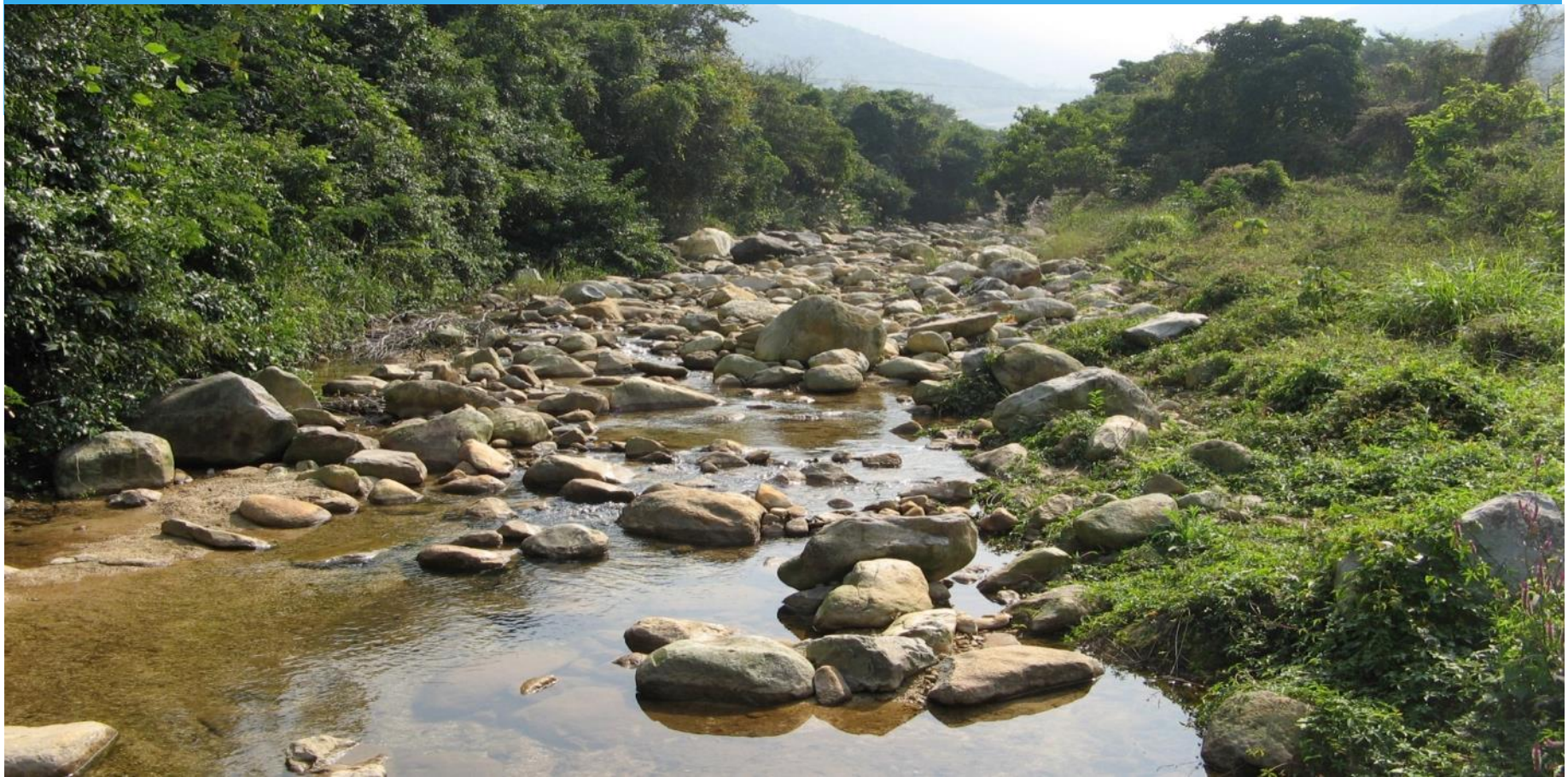
個案/特定例子：　中國的河流環境（本港的溪流和長江）和香港與英國的海岸環境


deposition

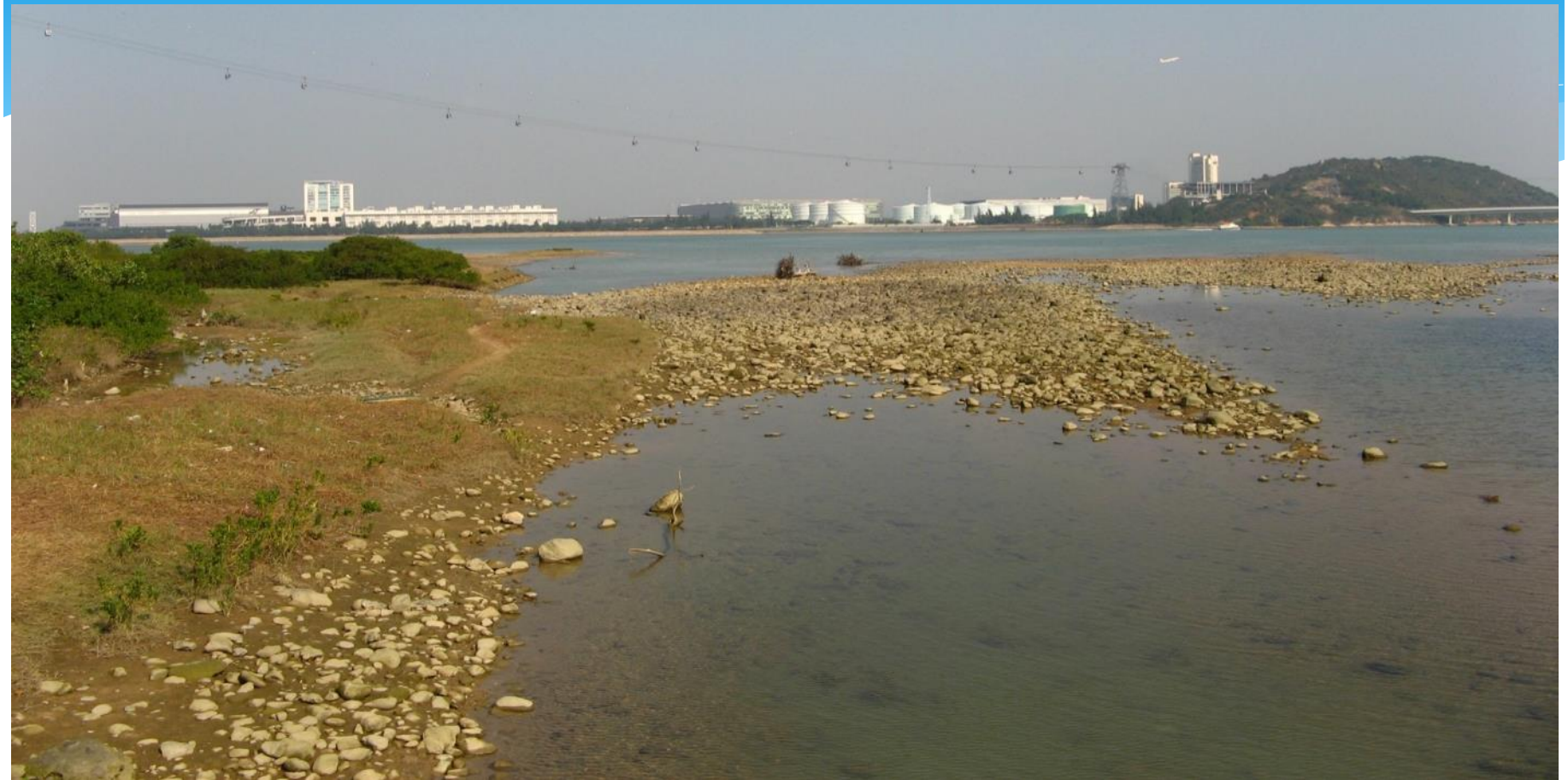
Upper course (Jan 2010)



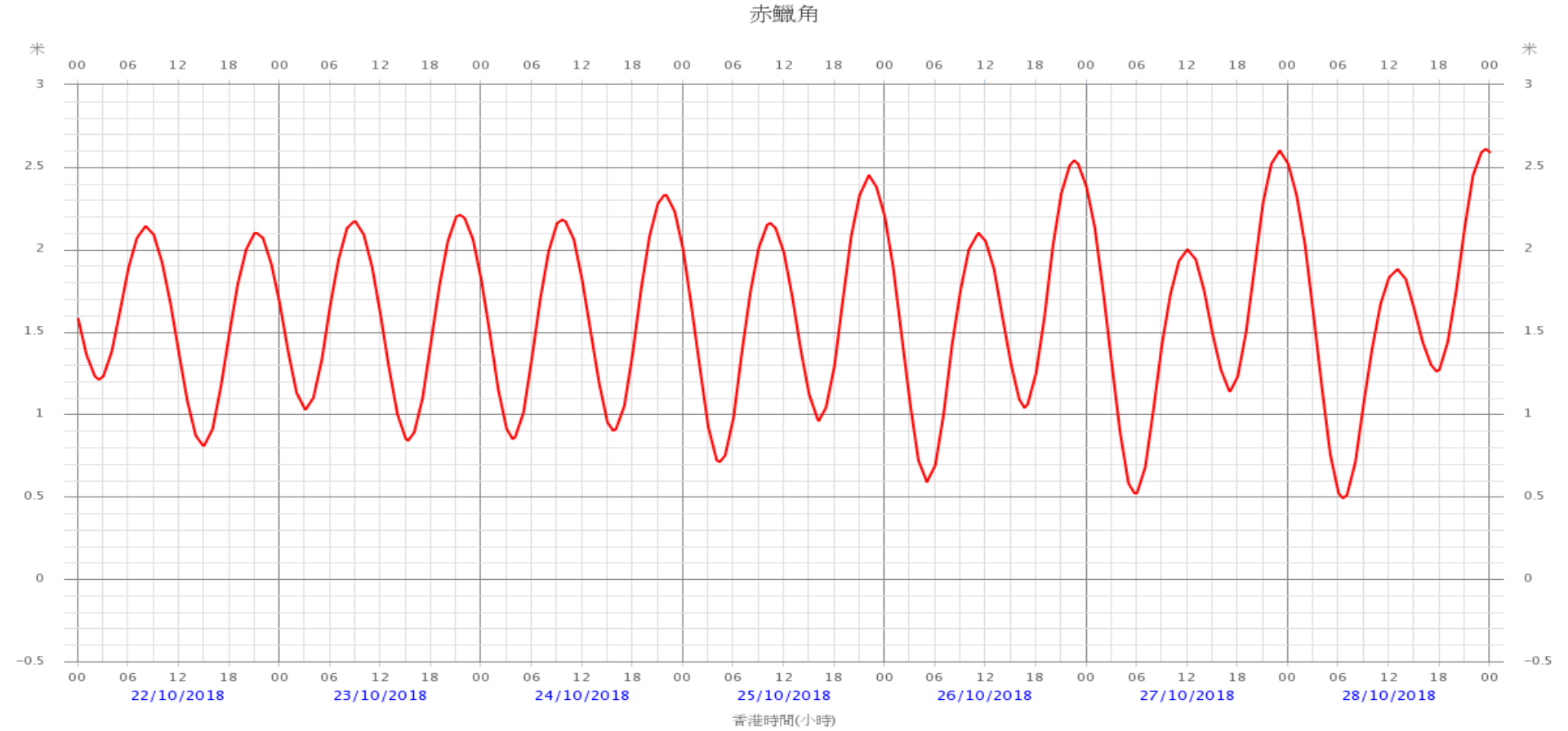
Middle course (Jan 2010)

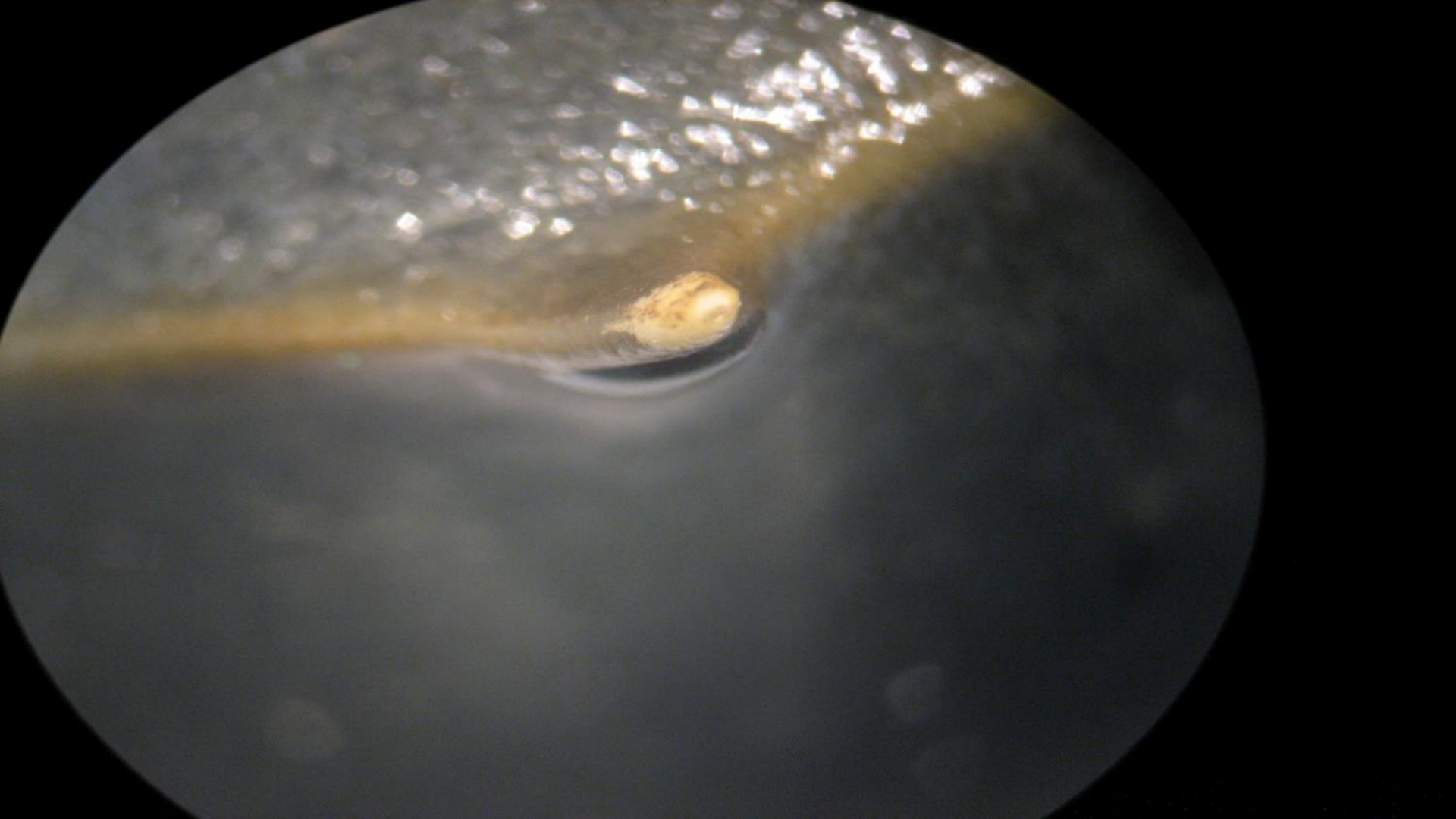


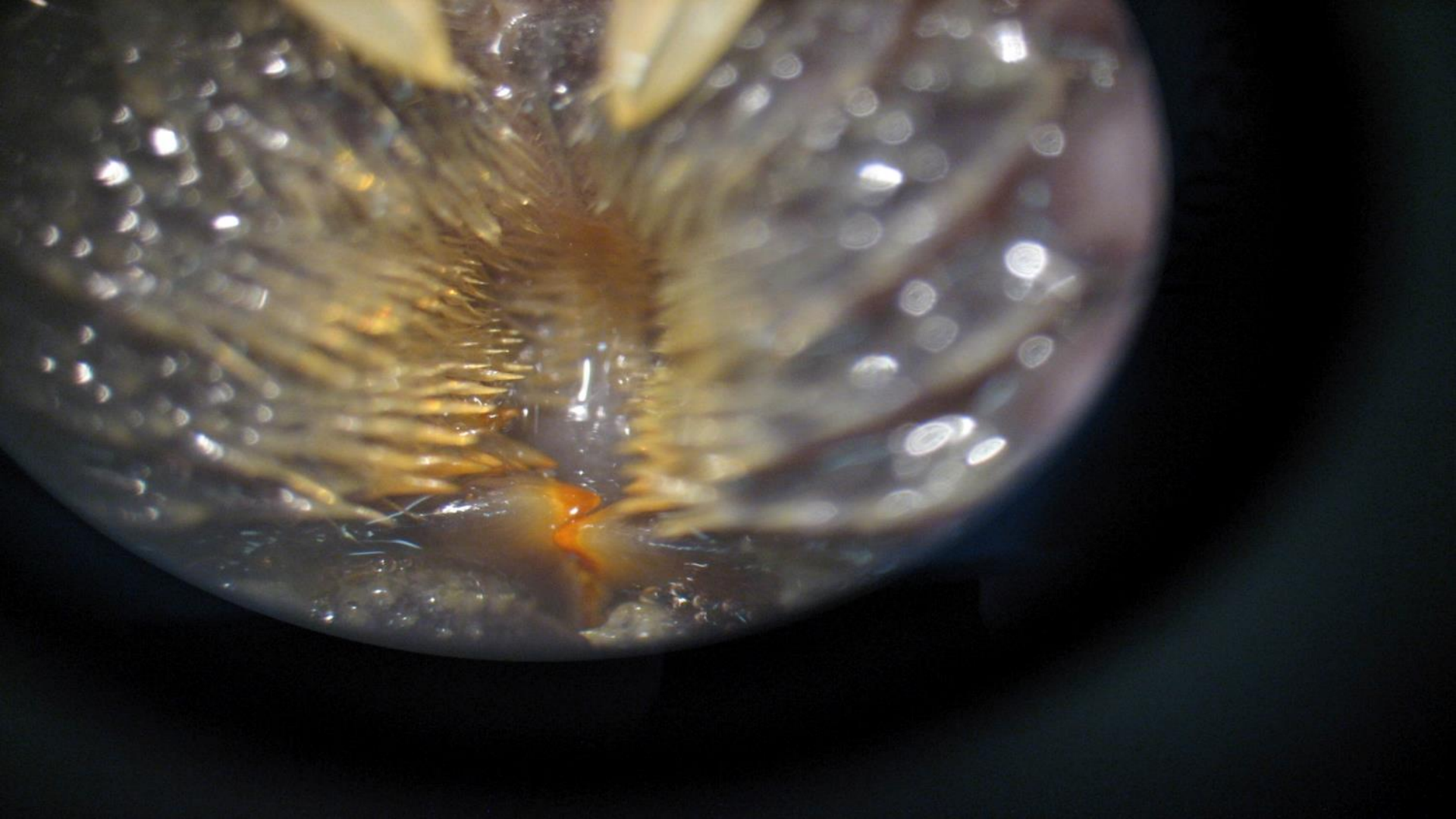
Lower course (Jan 2010)



Chek Lap Kok Tide Station








MANOK MARK

Mangroves as a coastal management strategy

紅樹圖鑑

木欖

秋茄

紅樹圖鑑

桐花樹

海漆

Source:《與孩子一起上的十三堂自然課》

紅樹圖鑑

海欖雌（白骨壤）

銀葉樹

卤蕨

欖李

Source:《與孩子一起上的十三堂自然課》

海岸植物圖鑑

老鼠簕

海杧果

草海桐

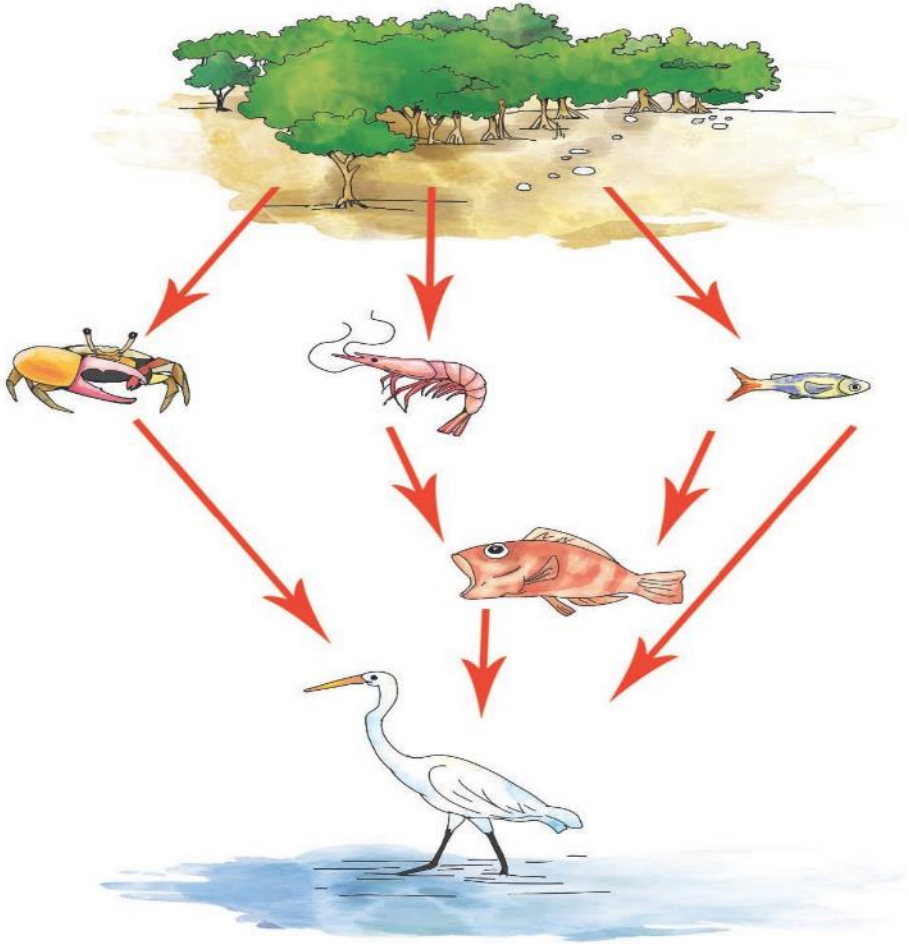
海岸植物圖鑑

黃槿

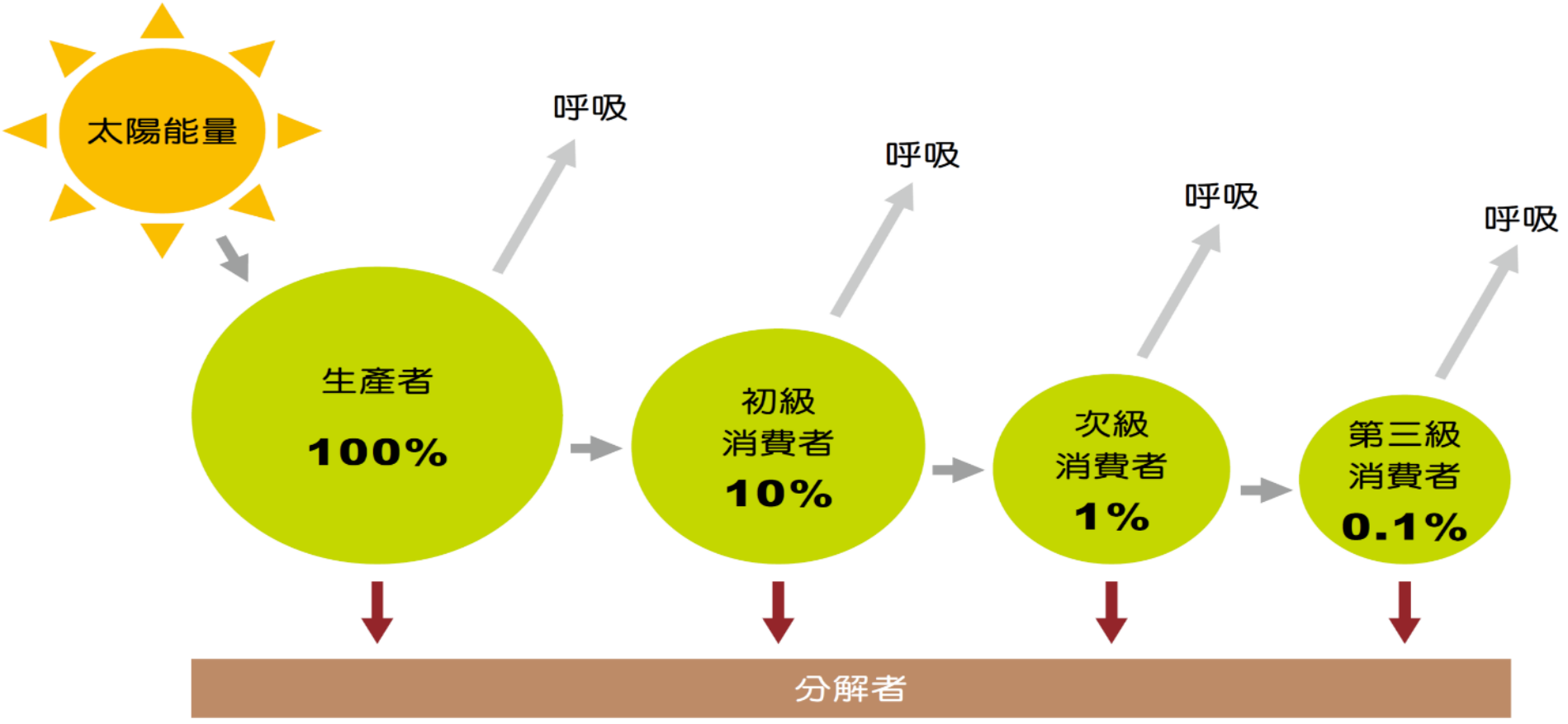
露兜樹

Source:《與孩子一起上的十三堂自然課》

Food chain



Source: 《與孩子一起上的十三堂自然課》



圖一　能量流

Source:《與孩子一起上的十三堂自然課》

Nature-based recreation

- How can we **develop** Tung Chung Bay **into a site for ecotourism**?
- **What is ecotourism**?
- Does the site have adequate potential **resources** (natural, cultural man-made resources etc.) for ecotourism?
- What **problems** may be created to the residents and natural environment of the site?
- How can we **solve** these problems?
- Design an ecotourism walk of 1 - 2 hours.

Urban development

- Recently, what are the **urban development** on the site?
- Facing rapid urban development, what are the **problems** created?
- In the **future**, how will the site/ surrounding area be developed?
- How can we **solve** these problems

Nature conservation

- How high is the **ecological value** of the site? Can you name some of the plants/ animal species?
- What were the **damages** to ecology in the past?
- What can we do to **protect** the ecology?
- What **difficulties** do you find in carrying out nature conservation?
- How can we **solve** the problems mentioned above?

個人、社會及人文教育學習領域

地理
課程及評估指引
(中四至中六)

課程發展議會與香港考試及評核局聯合編訂

香港特別行政區政府教育局建議學校採用
二零零七年（二零一五年十一月更新）

走出課室學習：
東涌的實地考察（香港培正中學）

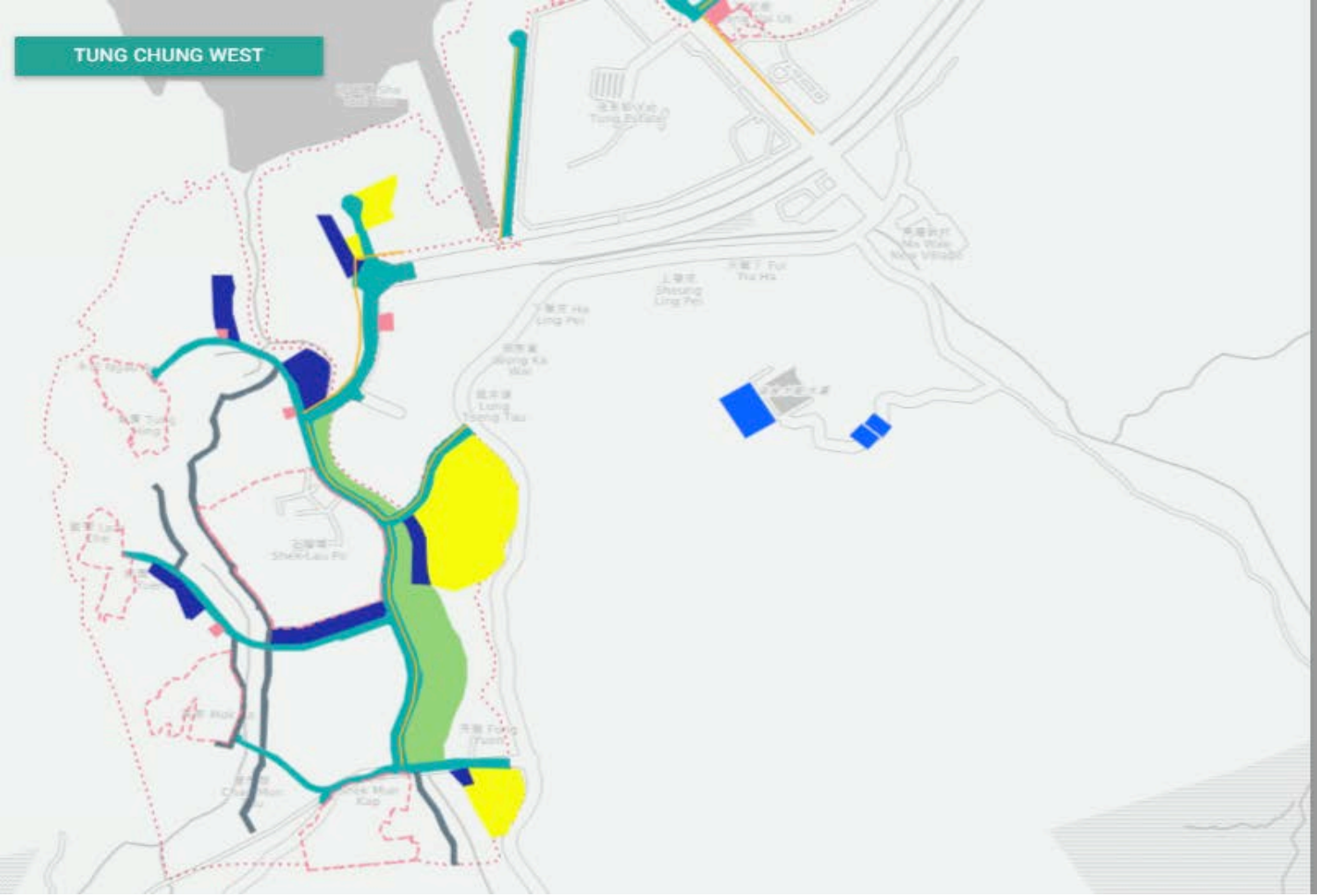
2004-05學年的下學期，香港培正中學的地理科教師帶領三班（共約120人）中四地理科學生到東涌進行實地考察。

東涌是一個「內容豐富」的考察地點，教師可於此地一併就多個不同地理課題進行實地考察。該名教師所選取和設計的四個主要地理考察範圍如下：

1.	河流：	東涌河不同河道的特點和河道受人為影響的程度。
2.	城市：	城市膳食和土地用途改變
3.	農業：	農業形態和發展
4.	保育：	東涌河和附近一帶的環境評估

這項實地考察是以探究為本，教師擔任學習的促導者。學生完成簡介和參與分組討論後決定本身的研究題目。教師在簡介裏只向學生講述東涌的背景資料，並無指出學生應在那些範疇或循那些方向進行探究。然後學生自行籌備實地考察，教師則擔當顧問和資源管理者。每班以半天的實地考察來蒐集資料，然後學生分成4人或5人的小組，處理、呈列、分析和闡釋蒐集到的數據和其他補充資料，並提交約2,500字的考察報告。

藉著實地考察，學生可在現實世界應用地理知識和概念。在實地考察前，學生在課堂中學習了「河流」這主題，而實地考察透過讓學生親眼看到河盆的實際操作情況，補充學生在課堂所學的知識。另一方面，這項實地考察也為其後教授的「市區發展」課題提供了一個合適的起步點。



Source: Tung Chung New Town Extension (http://www.tung-chung.hk/)

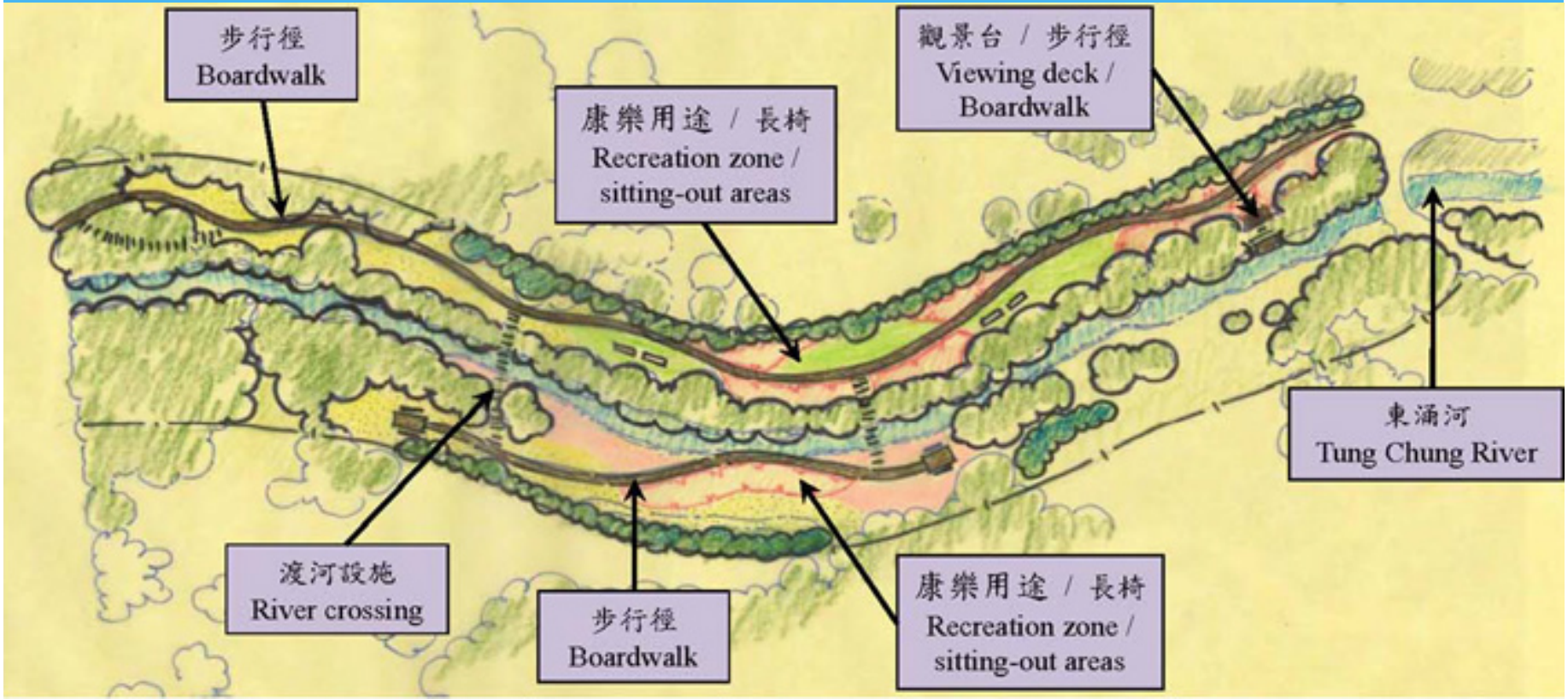
Enquiry Question 2 – River Park Field site D

Enquiry Question 2 – River Park

Field site D

Enquiry Question 2 – River Park

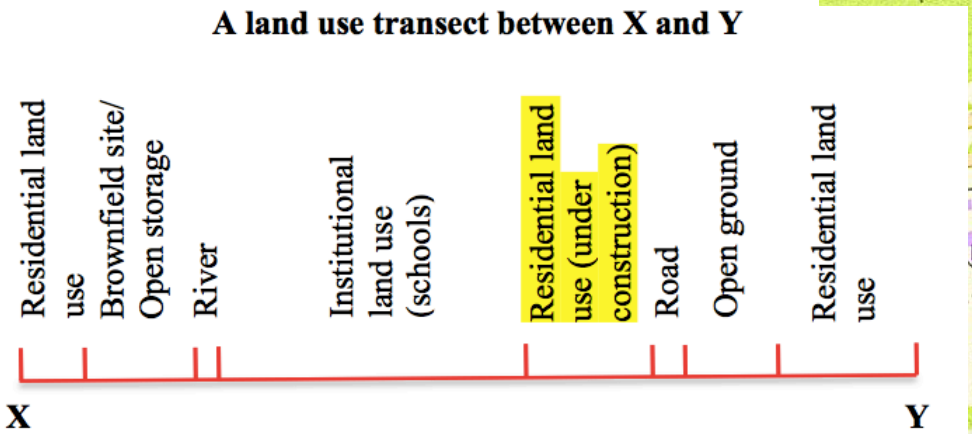
Enquiry Question 2 – River Park

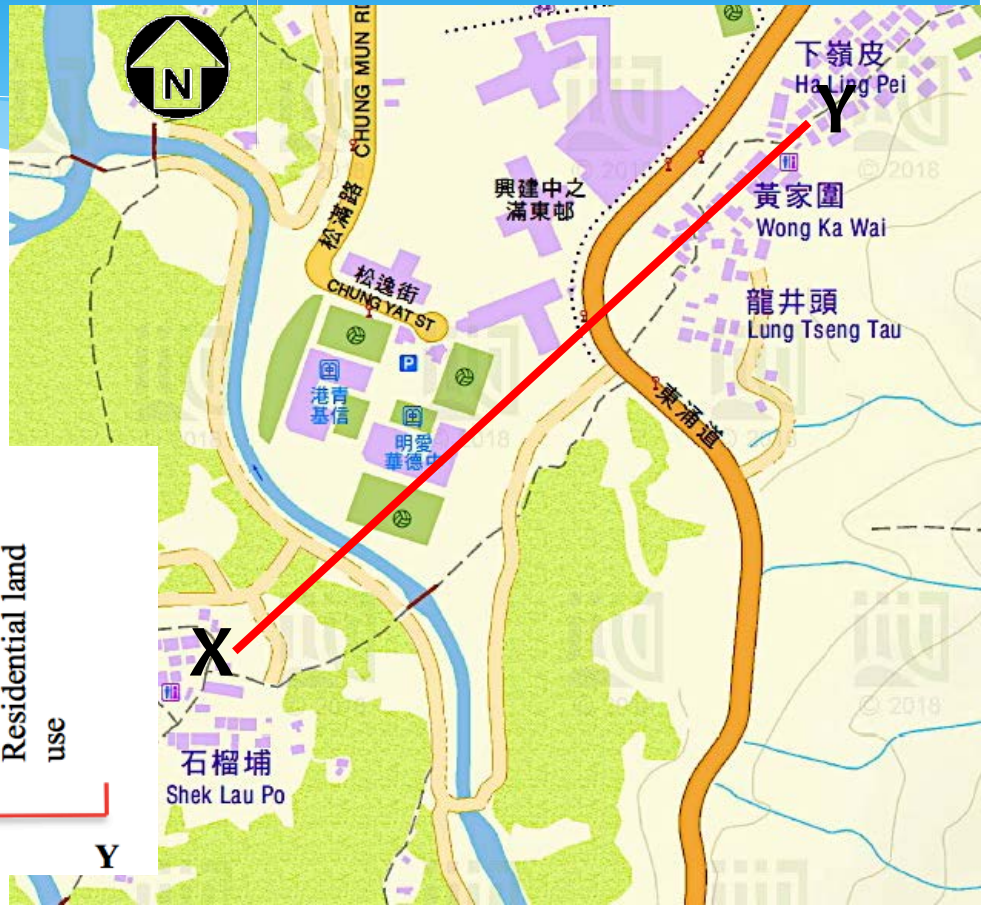


Enquiry Question 2 – River Park

Things to do:

Transect drawing

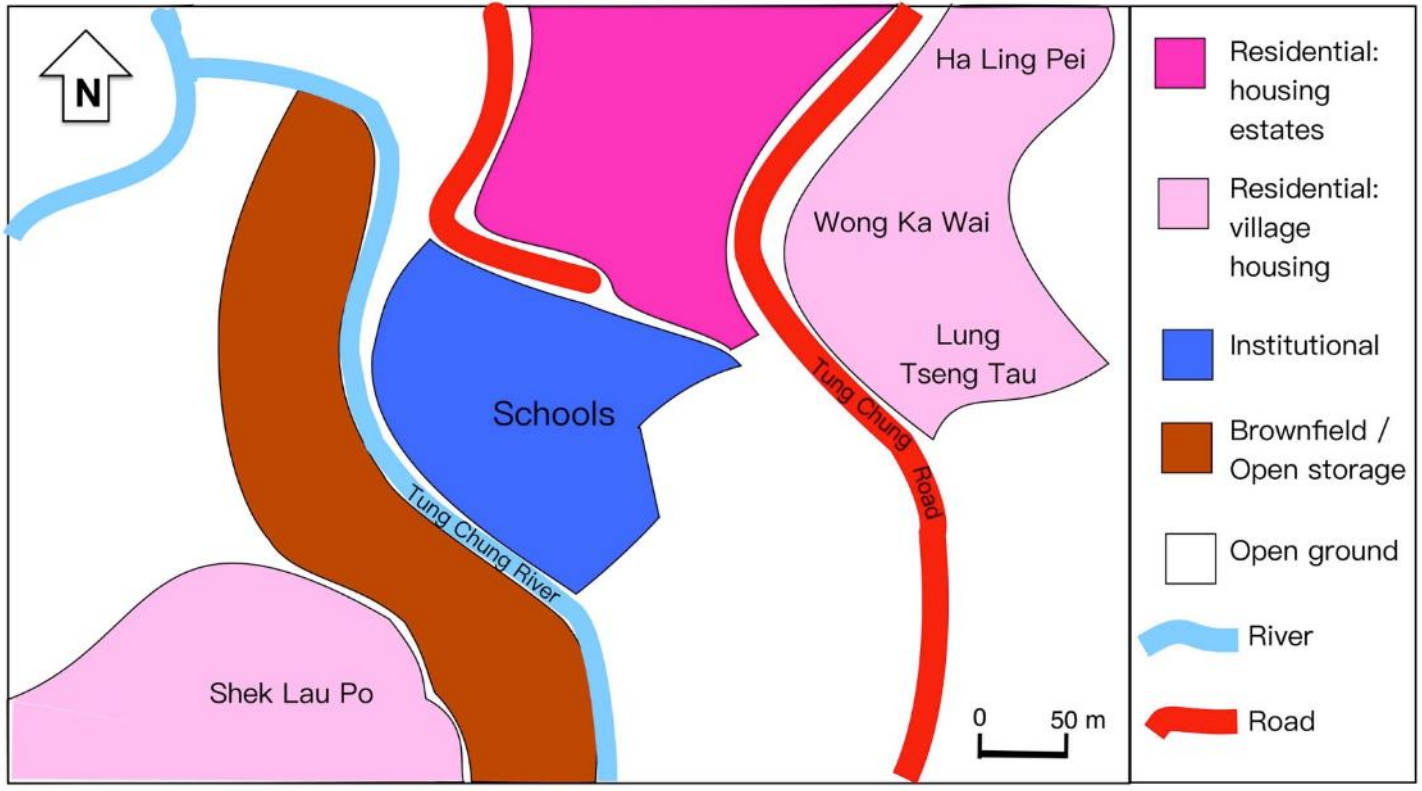




Enquiry Question 2 – River Park

Things to do:

Land use mapping



Enquiry Question 2 – River Park

Advantages

- Promotion of **"water-friendly" culture**
- Active **conservation & management** of the river environment
- **Integrated management** of hydraulics, ecology & public amenity
- **Proper control** over unauthorized development and incompatible

Obstacles / Challenges

- **Brownfield land & open storage** areas – difficulty in acquisition for development
- **Buying farmland & re-settling villagers** need money
- **Lack of land** along one of the river bank for development

Enquiry Question 2 – River Park: Appraisal

ECONOMIC

Landlords

Developers

Environmentalists

Conservationists

Business-men

Holiday makers

Residents in Housing Estates

Villagers

ENVIRONMENTAL

SOCIAL

River Park

How to conduct field study in Tung Chung River

Q & A

Thank you