



*for a living planet®*

# **LoLo's Flying Journey**

An Education for Sustainable  
Development Primary School  
Education Pack

“LoLo's Flying Journey” – Game Board

## The story begins...

Hello! My name is LoLo. I am a Black-faced Spoonbill, easily recognizable by my rather large black beak. I'm sorry to tell you that we spoonbills are an endangered species these days. Like most of my friends and relatives, I was born in Korea. However, when the cold winter arrives food becomes scarce so, along with many other migratory birds, I fly southwards to warmer places such as Japan, China, Taiwan and Hong Kong where food is abundant and the living is easier. Then, every springtime, we return to our beloved homeland Korea for breeding. However, the migratory journey is never easy for us; it is long and full of challenges (Fig. 1). In this game, each one of you will become my buddy (a fellow Black-faced Spoonbill) and experience the whole journey for yourself.



Fig. 1 The migratory journey is full of challenges.

## How to play the game

Students are divided into groups that will go through five different checkpoints (5 different locations on the school campus). Each one corresponds to Korea, Japan, China, Taiwan and Hong Kong.

Before we start the game, each group of students is 'fed' eight energy points that they need for the migratory journey. Teachers then lead the groups together to each checkpoint in turn. On arrival at a checkpoint, one student from each of the five groups selects one scenario card from the five in the Game Board. If a group picks up a card showing a positive scenario such as "*The local government protects wetland for water birds*", the group earns

energy points. If a negative scenario is chosen such as “*Coastal reclamation work continues*”, energy points are deducted. Teachers then discuss each of the scenario cards with the students (Fig. 2). The information behind the Game Board can help teachers to lead the discussion for each scenario cards.



Fig. 2 Interpreter is discussing about the scenario card with students. © WWF Hong Kong

After the groups have completed the migration by progressing through all five checkpoints, the group that has the most energy points wins the game. Any groups that lose all their energy points fail to complete the migration.

## Game Planning

**Target:** P.1 to P.6 students

**Duration:** 2 lessons

**Venue:** Campus, Country Park or Urban Park

**Materials:**

1. Energy Points (Fig. 3)
2. Checkpoint Indication Cards
3. “LoLo’s Flying Journey” Game Board

**Pre-activity preparation:**

1. Materials set up
  - Print out the Energy Points (Fig. 3) and the Checkpoint Indication Cards.



Fig. 3 Energy Point—the score card used in the game.

- Put the 5 Checkpoint Indication Cards at 5 different locations in the campus.

## 2. Venue set up

- Set up a route with 5 checkpoints around the campus. Put up the Checkpoint Indication Cards at each location. The checkpoint sequence should be:

| Checkpoint | Location | Checkpoint Indication Cards |
|------------|----------|-----------------------------|
| 1          | Korea    |                             |
| 2          | Japan    |                             |
| 3          | China    |                             |

|   |           |                                                                                    |
|---|-----------|------------------------------------------------------------------------------------|
| 4 | Taiwan    |  |
| 5 | Hong Kong |  |

### Procedures:

1. Evenly divide the class into 5 groups.
2. Dispatch 8 Energy Points to each group.
3. Brief the class on how to play the game.
4. Guide the class to the first checkpoint (Korea).
5. Upon arrival at the checkpoint, ask each group to choose, from the game board at random, one out of the five scenario cards available for the checkpoint.
6. After all groups have selected a scenario card, teachers can go through the chosen scenario one by one.

N.B.: Teachers will find supplementary SD information on the back of each card that relates to each scenario (Fig. 4).

| 中國站1號卡解說<br>China Card 1 interpretation                                                                                                                                                                                                                                                                                                                                                        | 環境因素<br>Environmental factor | 經濟因素<br>Economic factor | 社會因素<br>Social factor |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------|-----------------------|
| 非法捕獵及野生生物貿易是繼生境破壞後物種存活面對的第二大威脅。<br>The illegal hunting and trading of wildlife is the second biggest threat to species survival after habitat destruction.                                                                                                                                                                                                                                     | —                            | +                       |                       |
| 非法野生生物貿易在中國十分活躍。不少目標都是瀕危或瀕臨絕種的物種如華南虎。<br>The illegal wildlife trade is active in China. Many of the targeted species are endangered or near extinction such as the South China Tiger.                                                                                                                                                                                                          | —                            | +                       |                       |
| 食用野生雀鳥及其他野生生物是中國飲食文化的一部分。同時，部分宗教組織把捕獲的動物，如烏鴉及龜等轉送自然的傳統也十分普遍。因此，野生生物具有極高的市場價值，助長非法捕獵的行為。<br>The consumption of wild birds or other wildlife is part of the Chinese food culture. At the same time, releasing captive animals such as birds and turtles to the wild are also popular with some religious groups. Consequently, wildlife has a high market value that encourages illegal hunting. |                              |                         | +                     |
| 野生生物疾病會在物種間傳播，並有機會傳染人類，如嚴重急性呼吸系統綜合症(沙士)便是懷疑源自野生果子狸。<br>Wildlife diseases may cross the species barrier and be transferred to humans e.g. SARS is suspected to have originated from wild Civet Cats.                                                                                                                                                                                            |                              |                         | —                     |
| 另一方面，在中國很多農村地區，野生生物貿易對維持貧困人士的計尤其重要。<br>However, the wildlife trade is particularly important to the poor in sustaining their livelihood in many rural areas in China.                                                                                                                                                                                                                          |                              | +                       | +                     |

Fig. 4 Supplementary SD information can be found on the back of each scenario card.

7. Based on the instructions on the scenario card, the teacher adds or deducts energy points to or from each group.
8. Proceed through all the checkpoints in turn.
9. Once the last checkpoint (Hong Kong) is completed, calculate the energy points that each group has collected after passing through all 5 checkpoints. The group with the most points is the winner. Draw attention to any groups that have no points; these have failed to complete the migration.
10. Debrief the whole class highlighting the key conservation and ESD messages

## Suggested debriefing

Hooray! We've finally made it to our destination in Hong Kong, where we can enjoy the plentiful food supply and mild winter weather. Now you've experienced the journey with me, you can appreciate many of the challenges we Black-faced Spoonbills face during our southbound migration.

Some of the difficulties we encountered were simply due to nature. **Can you think of some of the natural factors that caused problems for us during the journey here?**

- Weather (in Korea) (Fig. 5)
- Disease (in Taiwan) (Fig. 6)



Fig. 5 Good Weather favours migration.



Fig. 6 Disease causes death of Black-faced Spoonbill.

However, it is also clear that human activity has a major impact on our survival chances. Human development, whether for social or economic reasons, takes land, food and water away from us. **Can you think of some examples of this?**

- Dam construction in China (Fig. 7)
- Reclamation work in Korea (Fig. 8)
- Transport development in Japan (Fig. 9)
- Lorry park construction in Hong Kong (Fig. 10)



Fig. 7 Dam construction destroys freshwater habitats.



Fig. 8 Coastal reclamation destroys important habitats for water birds and marine life.



Fig. 9 Transport development destroys wildlife habitats.



Fig. 10 The construction of car park reclaim wetland.

Of course, it wouldn't be fair to blame humans for everything. Although it is certainly true that humans have added extra stress to our journey, there are some who deeply care about us and have been working hard to make our life better so that we will no longer be endangered. Some environmental scientists have been monitoring our numbers at the different sites along our migration, and some have even been able to use satellite tracking to discover the routes we follow when we fly to and from our home in Korea (Fig. 11). These scientists have gathered information that has helped to conserve us and other water birds.



Fig. 11 Scientists gather more information on migration of Black-faced Spoonbill by using satellite tracking.

Other humans have been involved in education programmes and have helped to raise awareness of our plight (Fig. 12). Through their combined efforts, many important habitats have been conserved, managed or protected for our use. Many of the coastal wetlands along our flyway are now [Ramsar Sites](#), internationally protected so that we and other water birds are guaranteed good stopovers during our long journey to Hong Kong.



Fig. 12 Students are eager to learn "In" the environment.

Many times during the journey we encountered the conflict between human development and the natural environment, which is our home. In some situations it is clear that humans understand the need to strike a balance between these two and are trying to build a sustainable future so that humans can live in harmony with the other members of the planet, including us. It's also in human's interest to protect their own natural resources so that they can continue to be enjoyed by their future generations. So it can be a win-win situation: for example, the conservation of fishponds and *gei wai* not only guarantees us a place to live, but also give fishermen the chance to harvest fish and shrimps sustainably every year, ensuring a livelihood for them and their children, as well as providing effective drainage and flood protection to the humans that live nearby. (Fig. 13 and Fig. 14) And of course, our future will look brighter too and humans will still have the chance to appreciate us and the other wonderful wildlife that inhabit the wetland.



Fig. 13 Using environmentally-friendly practices is essential for the conservation of fishpond.



Fig. 14 Gei wai is an example to demonstrate sustainable development.

So, what sorts of things can children do to help humans on the path towards sustainable living? Children hold the key to our (and their own) future. **What sorts of actions can reduce the demand for resources and the impact humans have on the planet?**

- Try to conserve water. Think about how much water you need to use when brushing your teeth. Don't leave the tap running.
- Try to reduce the amount of electricity used. Do you need to have the air-conditioner on? Switch off the lights when you leave a room. All these actions decrease the use of fossil fuels and the production of carbon dioxide. Carbon dioxide is a greenhouse gas that contributes to global climate change. Changes in weather patterns as a result of global warming may make LoLo's journey much more difficult and rising sea levels could decrease the area where LoLo and her friends can stopover.
- Using public transport is also better as the burning of fossil fuels and the resultant contribution to greenhouse gas emissions is less than using private cars.
- Think about the amount of paper you use for schoolwork. Have you used both sides? Is it recycled? How many sheets do you need to dry your hands? You could use a towel instead. Try to minimize paper use and save the trees.
- Going shopping? Take your own bags with you and save plastic.
- Get out and experience nature so you really understand its value.
- Get involved and take responsibility for shaping the future. There are lots of opportunities to do volunteer work for conservation organizations such as WWF.

What LoLo wants is for humans to nurture a sense of stewardship, of taking care of what natural resources we have so that all species have a future. It is this concept that LoLo hopes you will carry with you from now onwards.

## **“LoLo's Flying Journey” Game Board**

To implement this game, please print out the following Game Board, Energy Points and Checkpoint Indication Cards.



# Lolo

## 飛行手記

LOLO's Flying Journey



for a living planet®

第一站

# 韓國

Site 1  
Korea



| <b>韓國站1號卡解說</b><br><b>Korea Card 1 interpretation</b>                                                                                                                                                                                         | <b>環境因素</b><br>Environmental factor                                                 | <b>經濟因素</b><br>Economic factor | <b>社會因素</b><br>Social factor |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|------------------------------|
| <p>韓國是全球最大的黑臉琵鷺繁殖地。其中一個已知的繁殖地位於朝鮮半島西岸以外的一些細小島嶼上。</p> <p>Korea is the biggest breeding ground for Black-faced Spoonbills in the world. One known breeding site is on some small islands off the west coast of the Korean peninsula.</p>        |                                                                                     |                                |                              |
| <p>最大的繁殖地位於南北韓邊境的非軍事區內，法例規定不可擅自進入，因此該處沒有受到任何人為騷擾。</p> <p>The biggest breeding site is in the Demilitarized Zone (DMZ), the border between North and South Korea where access is restricted by law. The site is free of human disturbance.</p> |  |                                |                              |

# 1



**棲息地未受滋擾，黑臉琵鷺能成功繁殖。**

Nesting site undisturbed, Black-faced Spoonbills can reproduce successfully.



## 韓國站2號卡解說

### Korea Card 2 interpretation

|                                                                                                                                                                                                                                                                                                              | 環境因素<br>Environmental<br>factor                                                     | 經濟因素<br>Economic<br>factor                                                            | 社會因素<br>Social<br>factor                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <p>韓國新萬錦填海工程目前是全球最大型的海土工程項目(面積約相等於香港總面積的4倍)。在2006年已完成了一道海堤，並將會興建另一道海堤。</p> <p>Korea, Saemangeum Tidal Flat Reclamation Project is the biggest reclamation project in the world (equivalent to 4 times of Hong Kong's total area). A seawall was completed in 2006. Another seawall is going to be built.</p> |                                                                                     |    |                                                                                       |
| <p>韓國新萬錦是水鳥的重要中途站，讓牠們在此補充體力。</p> <p>Korea, Saemangeum is an important stopover habitat for water birds to replenish their energy.</p>                                                                                                                                                                        |  |                                                                                       |                                                                                       |
| <p>填海工程造成的污染導致甲殼動物減少，影響當地漁民的生計。</p> <p>The loss of shellfish due to the pollution from the reclamation work affects the livelihood of local fisherman.</p>                                                                                                                                                   |                                                                                     |  |  |

# 2



**沿岸填海工程持續，水鳥及海洋生物的重要棲息地受破壞。**  
Coastal reclamation work continues. Important habitats for water birds and marine life are destroyed.



## 韓國站3號卡解說

### Korea Card 3 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

在稻田及同類型的淡水環境中可找到很多細小的動物，如蟲、魚、蝦、昆蟲、蛙，以至植物等。這些細小的動物是黑臉琵鷺等水鳥的重要食物來源。

Some plants and many small animals, such as worms, fishes, shrimps, insects and frogs are found in paddy fields and similar freshwater habitats. These are important food sources for water birds including Black-faced Spoonbills.

農民會失去工作。傳統的農耕文化也會在社會上逐漸消失。

Paddy field farmers will lose their jobs. The traditional farming culture will gradually disappear from the community.



# 3



稻田被發展，人類的食物生產量減少，野生生物的棲息地也減少。  
Development takes place on land used for paddy fields. Human food production decreases; habitat for wildlife shrinks.



## 韓國站4號卡解說

### Korea Card 4 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

有關政策保護野生生物的重要棲息地。市民能欣賞及享受四周的自然環境，與大自然和諧共處。

The policies protect important habitats for wildlife. Citizens appreciate and enjoy spending time in the natural environment nearby and live in harmony with nature.



市民樂於保護水鳥。

Citizens are willing to conserve water birds.

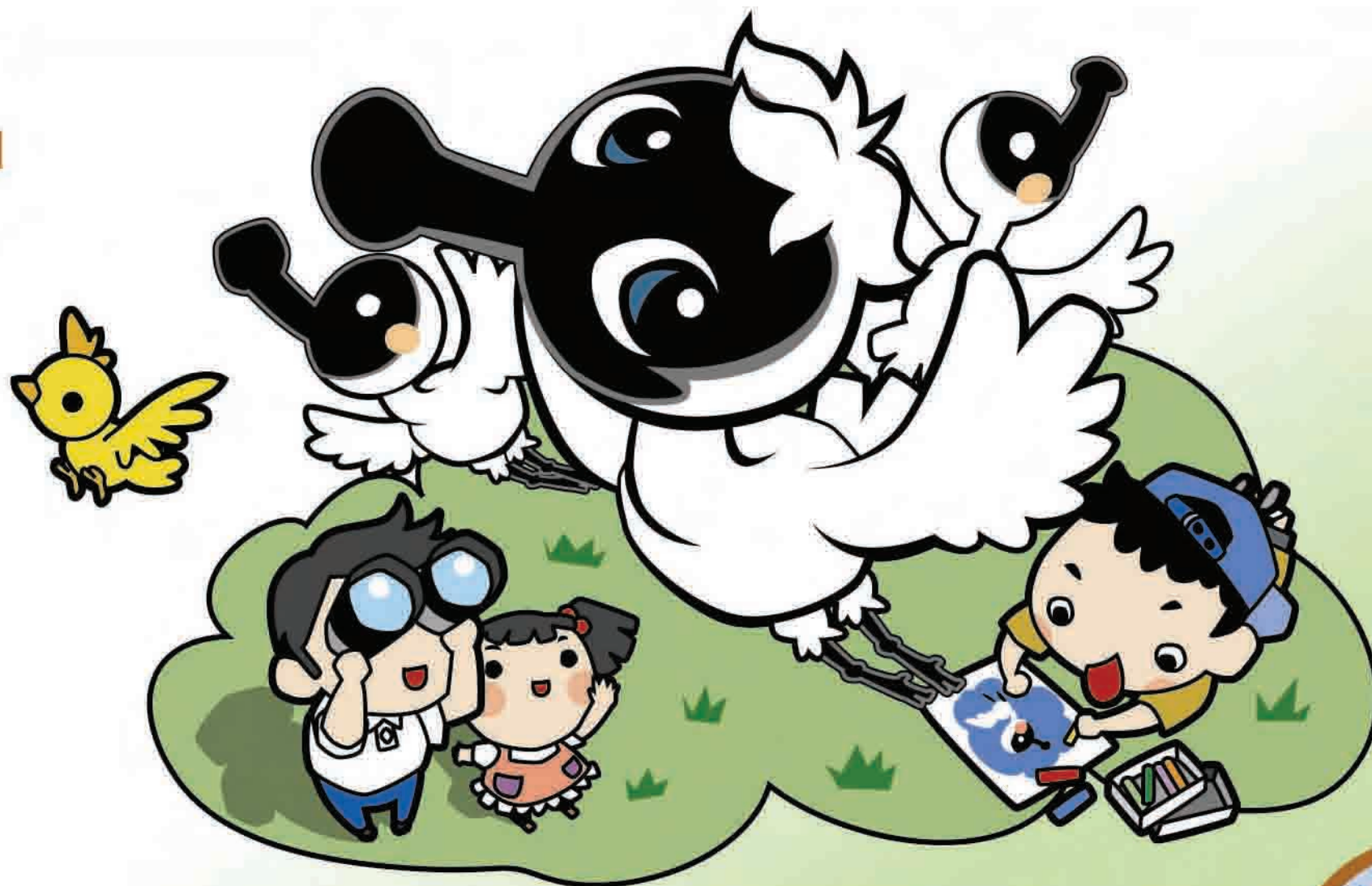


韓國的非政府組織設立教育中心及舉辦教育活動，藉以提高公眾對保護濕地的意識。

Korea Non-Governmental Organisation (NGO) sets up an education centre and education programme to raise the public's awareness of wetland conservation issues.



4



**政府的保育政策得到市民的支持。**

Government's conservation policies are supported by citizens.



## 韓國站5號卡解說

### Korea Card 5 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

候鳥在遷徙的過程中需要良好的天氣。

Migratory birds depend on good weather during their journey.

惡劣天氣，如風暴、颱風或暴雨等都可能對進行遷徙的野生生物(如雀鳥及蝴蝶)構成威脅。

Extreme bad weather, such as snowstorms, typhoons or heavy rain is a potential threat to migratory wildlife such as birds and butterflies.

# 5



**天氣良好，有利遷徙。**

Good weather favours migration.



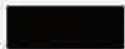


第二站

日本

Site 2

Japan

| <b>日本站1號卡解說</b><br><b>Japan Card 1 interpretation</b>                                                                                                                               | <b>環境因素</b><br>Environmental factor                                                  | <b>經濟因素</b><br>Economic factor                                                      | <b>社會因素</b><br>Social factor                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>在濕地上進行發展會破壞環境，這些自然環境是不同種類野生生物的棲身之所。</p> <p>Development on wetlands destroys the environment that is home to a variety of wildlife.</p>                                           |   |  |                                                                                      |
| <p>新幹線是日本的新型高效率電氣化鐵路系統，為市民提供快捷及清潔的大型運輸網絡系統。</p> <p>Shinkansen, Japan's new efficient electric railway system provides a fast and clean mass transportation system for citizens.</p> |                                                                                      |                                                                                     |   |
| <p>公眾在交通上節省了時間，同時有助改善市區的空氣質素。</p> <p>People save time on transportation and it also improves the air quality in the city.</p>                                                       |  |                                                                                     |  |

# 1



**交通發展破壞野生生物的棲息地。**

Transport development destroys wildlife habitats.

**-2**

## 日本站2號卡解說

### Japan Card 2 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

當發展項目破壞天然濕地時，負責任的發展商會採取補償措施，重新建造人工濕地補償天然濕地的損失。在一些國家，法例規定發展商必須進行補償工作。

When a development destroys natural wetland, a responsible developer recreates artificial wetlands as a mitigation measure to compensate for the loss of wetland. In some countries, developers are legally obliged to do this.



人工濕地的價值仍未能確定。然而，發展商在發展過程中把環境因素列入考慮範圍內已是踏出重要的一步。

The value of artificial wetland is still underdetermined. However, it is a big step forward for developers to take environmental issues into consideration during development.



人工濕地可成為人類接觸大自然的一個新平台。

The artificial wetland can serve as a new place for people to get in touch with nature.



# 2



成功建造人工濕地。

Artificial wetland is successfully created.



## 日本站3號卡解說

### Japan Card 3 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

工業發展產生過多空氣及水質污染物，污染人類及其他野生生物的食物來源(如魚類)。  
Industrial development produces excessive air and water pollutants. These can contaminate food sources such as fish that are consumed by humans and other wildlife.



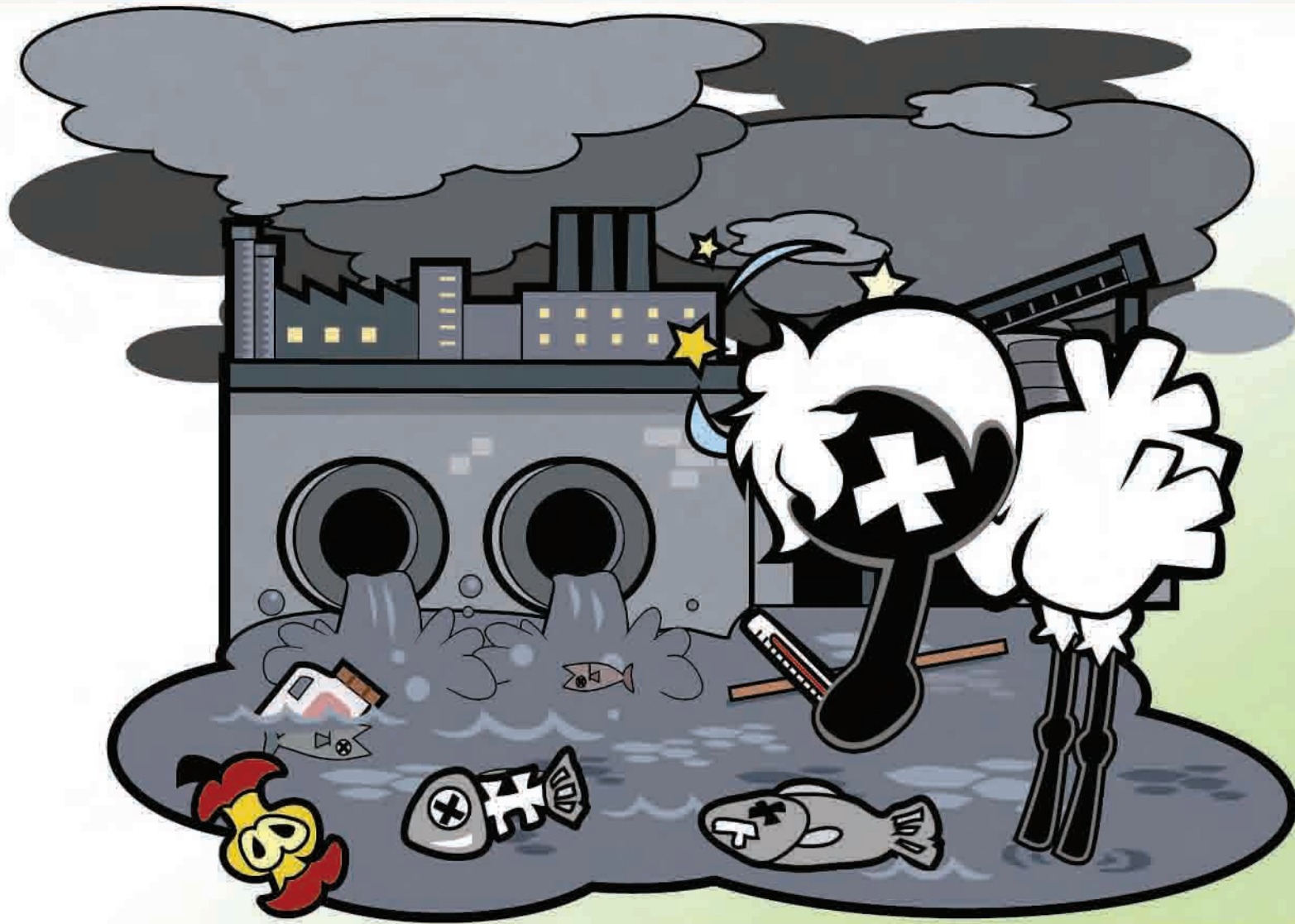
排放到河流及海洋的過量水質污染物會嚴重減少漁民的收成。  
Excessive water pollutants discharged into the river or sea can severely decrease the fishermen's catch.



水質污染為社會帶來衛生問題，當局需要採取額外措施確保食水適合飲用。  
Water pollution creates hygiene problems for society. Extra treatment measures need to be taken to ensure drinking water is safe.



# 3



**我們吃了受污染的魚類感到不適！**

We feel sick after eating contaminated fish!

**-2**

## 日本站4號卡解說

### Japan Card 4 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

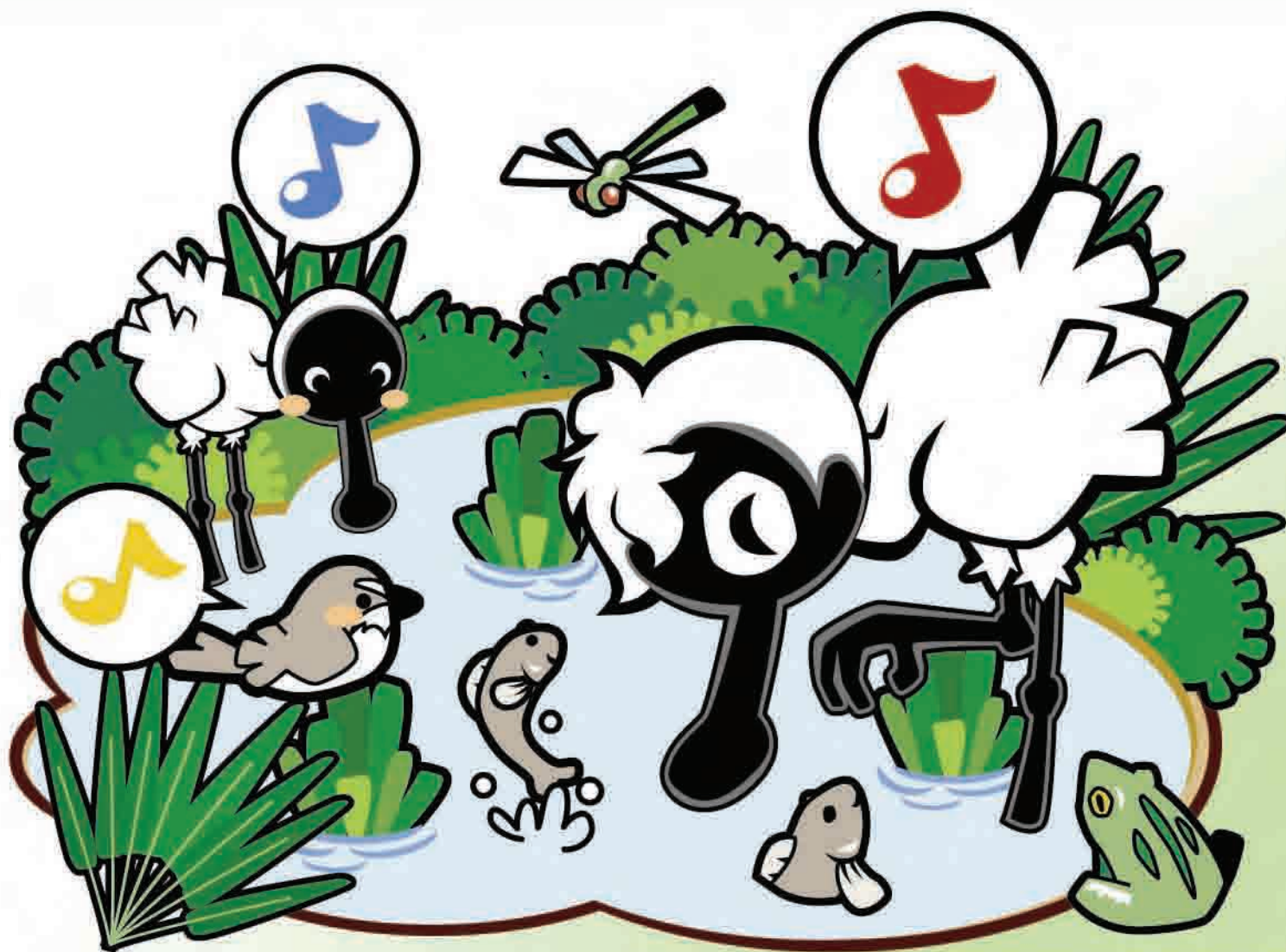
社會因素  
Social  
factor

一個具備足夠食物的中途棲息地對成功遷徙十分重要。  
A stopover site with sufficient food available is crucial for a successful migration.

當雀鳥抵達中途站，牠們會找尋食物補充能量儲備，為下一階段的旅程作好準備。每年，這些雀鳥只須靠數個主要的中途加油站，便可飛越數千公里。

Once the birds arrive a stopover point, they will look for food to replenish their reserves in preparation for the next stage of the journey. Every year birds are able to cover thousands of kilometers with the help of a few key stopover points where they can 'refuel'.

# 4



我們到達一片理想的濕地作為中途站。

We arrive at a wonderful wetland as a stopover point.



## 日本站5號卡解說

### Japan Card 5 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

候鳥需要大量能量才可完成長途遷徙。牠們需要在旅程展開前盡量進食，以便儲備足夠能量應付漫長的旅程。

Long distance migration is very energy demanding for migratory birds. They need to eat as much as they can beforehand to store sufficient energy for the journey.

# 5



**橫渡海洋消耗我們大部分的能量儲備。**

Flying across the sea uses up most of our energy reserves.



第三站

中國

Site 3  
China



# 中國站1號卡解說

## China Card 1 interpretation

|                                                                                                                                                                                                                                                                                                                                                                                                | 環境因素<br>Environmental<br>factor | 經濟因素<br>Economic<br>factor | 社會因素<br>Social<br>factor |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------|--------------------------|
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| 非法野生生物貿易在中國十分活躍。不少目標都是瀕危或瀕臨絕種的物種如華南虎。<br>The illegal wildlife trade is active in China. Many of the targeted species are endangered or near extinction such as the South China Tiger.                                                                                                                                                                                                          | —                               | +                          |                          |
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# 1



**危險!我們跟其他瀕危生物遭到狩獵!**

**Danger! We and other endangered wildlife are being hunted!**

**-4**

## 中國站2號卡解說

### China Card 2 interpretation

|                                                                                                                                                                                                                                                                                             | 環境因素<br>Environmental<br>factor | 經濟因素<br>Economic<br>factor | 社會因素<br>Social<br>factor |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------|--------------------------|
| 漁網及陷阱對泥灘上的水鳥構成潛在威脅。<br>The fish nets and traps are potential threats to water birds on the mudflat.                                                                                                                                                                                         | ■                               |                            |                          |
| 漁民濫捕漁業資源導致其他野生生物，尤其是水鳥的食物量大幅減少。<br>The over exploitation of fishery resources by fishermen significantly decreases the amount of food available for other wildlife especially water birds.                                                                                                  | ■                               | +                          |                          |
| 不符合可持續原則的捕魚方式對漁業資源造成不能彌補的破壞，以及導致食物鏈失去平衡。這也會導致市場上的海鮮食物量不足，漁民也會面臨失業。<br>Unsustainable fishing practices result in unrecoverable damage to fishery resources and an imbalance in the food chain. This also leads to insufficient seafood reaching the markets and fishermen losing their jobs. | ■                               | ■                          | ■                        |

# 2



漁民跟我們競爭及騷擾沿岸地區的水鳥。

Fishermen compete with us and disturb water birds in coastal area.

# -2

# 中國站3號卡解說

## China Card 3 interpretation

|                                                                                                                                                                                                                                                                                                    | 環境因素<br>Environmental<br>factor | 經濟因素<br>Economic<br>factor | 社會因素<br>Social<br>factor |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------|--------------------------|
| 建造水壩令河流水質及生物多樣性下降。<br>The construction of dam decreases the water quality of the river and its biodiversity.                                                                                                                                                                                       | ■                               |                            |                          |
| 河流的流向被改變，影響野生生物及人類的食物供應及居住的棲息地。<br>The flow of the river is altered, affecting the availability of food and habitats for wildlife and human beings.                                                                                                                                                | ■                               |                            | ■                        |
| 水壩阻礙部分魚類物種向上流遷徙的習性。<br>The dam stops some species of fish migrating upstream.                                                                                                                                                                                                                      | ■                               |                            |                          |
| 中國長江三峽大壩是人類歷史上最大型的水力發電水壩。工程可帶來社會及經濟效益，包括防治水災及生產可靠及無污染的水力發電能源。<br>The Three Gorges Dam in China is the largest hydroelectric dam construction project in human history. There are social and economic benefits from the flood control and the reliable and clean generation of hydroelectric power. |                                 | +                          | +                        |
| 然而，很多珍貴的考古及文化地點也因此而喪失。<br>However, many valuable archaeological and cultural sites are lost as a consequence.                                                                                                                                                                                      |                                 |                            | ■                        |

3



建造水壩破壞淡水環境。

Dam construction destroys freshwater habitats.

-2

# 中國站4號卡解說

## China Card 4 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

中國政府制訂法例保護瀕危野生生物。  
The Chinese government has laws to protect endangered wildlife.



中國保護的野生生物按其罕有程度及重要性分為兩個類別，列作一級保護的野生生物會得到最高層次的保護。  
Protected wildlife in China is divided into 2 categories based on their rarity and importance. Wildlife listed on Class I receives the highest level of protection.

國家一級保護包括：大熊貓、中華白海豚、大天鵝及華南虎等。  
Class I Protected Animals include: Giant Panda, Chinese White Dolphin, Whooper Swan and South China Tiger etc.

國家二級保護包括：黑臉琵鷺、穿山甲、虎紋蛙 (田雞)、三線閉殼龜 (金錢龜)等。  
Class II Protected Animals include: Black-faced Spoonbill, Pangolin, Chinese Bullfrog and Chinese three-striped box turtle etc.

4



**黑臉琵鷺及其他瀕危野生生物在中國受法例保護。**  
 Black-faced Spoonbills and other endangered wildlife are legally protected in China.



# 中國站5號卡解說

## China Card 5 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

「拉姆薩爾公約」是一項跨政府條約，於1971年2月2日在伊朗拉姆薩爾市訂立。因此，這項條約所指定的地點均稱為拉姆薩爾濕地。

The "Ramsar Convention" is an intergovernmental treaty adopted on 2 February 1971 in the Iranian city of Ramsar. Thus, any sites designated under this treaty are called Ramsar Sites.

公約旨在透過本土、國家及國際間的努力及合作保護和善用所有濕地，藉以在全球各地達致可持續發展的目標。因此，濕地(包括鳥類及其他野生生物)及人類也能透過保護及善用濕地而得到裨益。

The Convention's mission is the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". Therefore, both wetland (including birds and other wildlife) and people benefit from the conservation and wise use of wetlands.

截至2006年，中國共有30片拉姆薩爾濕地，覆蓋近300萬公頃面積濕地(約相等於300個香港特區的土地面積)，其中一片是香港的米埔及內后海灣拉姆薩爾濕地。

As of 2006, China had 30 Ramsar Sites that cover nearly 3 million hectares of wetland (This represents about 300 times Hong Kong SAR's land area). One is Hong Kong's Mai Po and Inner Deep Bay Ramsar Site.

保護華東沿岸的濕地對候鳥十分重要，為牠們由西伯利亞往返香港、亞太地區甚至遠及澳洲的遷徙路線中提供中途棲息站。

The protection of wetlands along the east coast of China is crucial to provide birds with stopover points when migrating to and from Siberia to Hong Kong, Asia Pacific regions and even down to Australia.



# 5



**沿岸地區設立拉姆薩爾濕地，我們的飛行路線得到保護。**

Coastal Ramsar Sites established; our flyway is conserved.



第四站

台灣

Site 4  
Taiwan



## 台灣站1號卡解說

### Taiwan Card 1 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

雀鳥的導航方法包括：

1. 根據太陽、月亮及星宿的位置作出判斷；
2. 根據山脈及海岸線的地貌作分辨；及
3. 以地球的磁場作為引導。

Birds navigate by a number of means such as

1. Using the position of the sun, moon and stars;
2. Following the outlines (topography) of mountains or coastlines;
3. Sensing the Earth's magnetic field.

儘管如此，小部份鳥類也會在遷徙途中迷路。

Nevertheless, a small proportion of birds fly the wrong way during migration.

1



你迷路了嗎？你在遷徙路線上用什麼方法導航？

Are you lost?

How are you able to navigate along the migratory route?

+3

正確  
correct

-3

錯誤  
incorrect

## 台灣站2號卡解說

### Taiwan Card 2 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

生態旅遊讓公眾有機會接近大自然亦能盡量減低對生態帶來的影響。  
Ecotourism gives people an opportunity to get close to nature whilst minimizing their ecological impact.



由旅客帶來的收入亦有助維持當地居民的生計。  
The revenue generated by tourists can also support the livelihood of local people.



生態旅遊鼓勵參加者「不帶走任何東西，只帶走照片；不留下任何東西，只留下足跡。」  
Participants are encouraged to "take nothing but photographs, leave nothing but footprints".



# 2

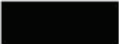


負責任的生態旅遊讓公眾在享受自然環境的同時，不會對野生動物造成騷擾。  
Responsible ecotourism allows people to enjoy nature without disturbing wildlife.

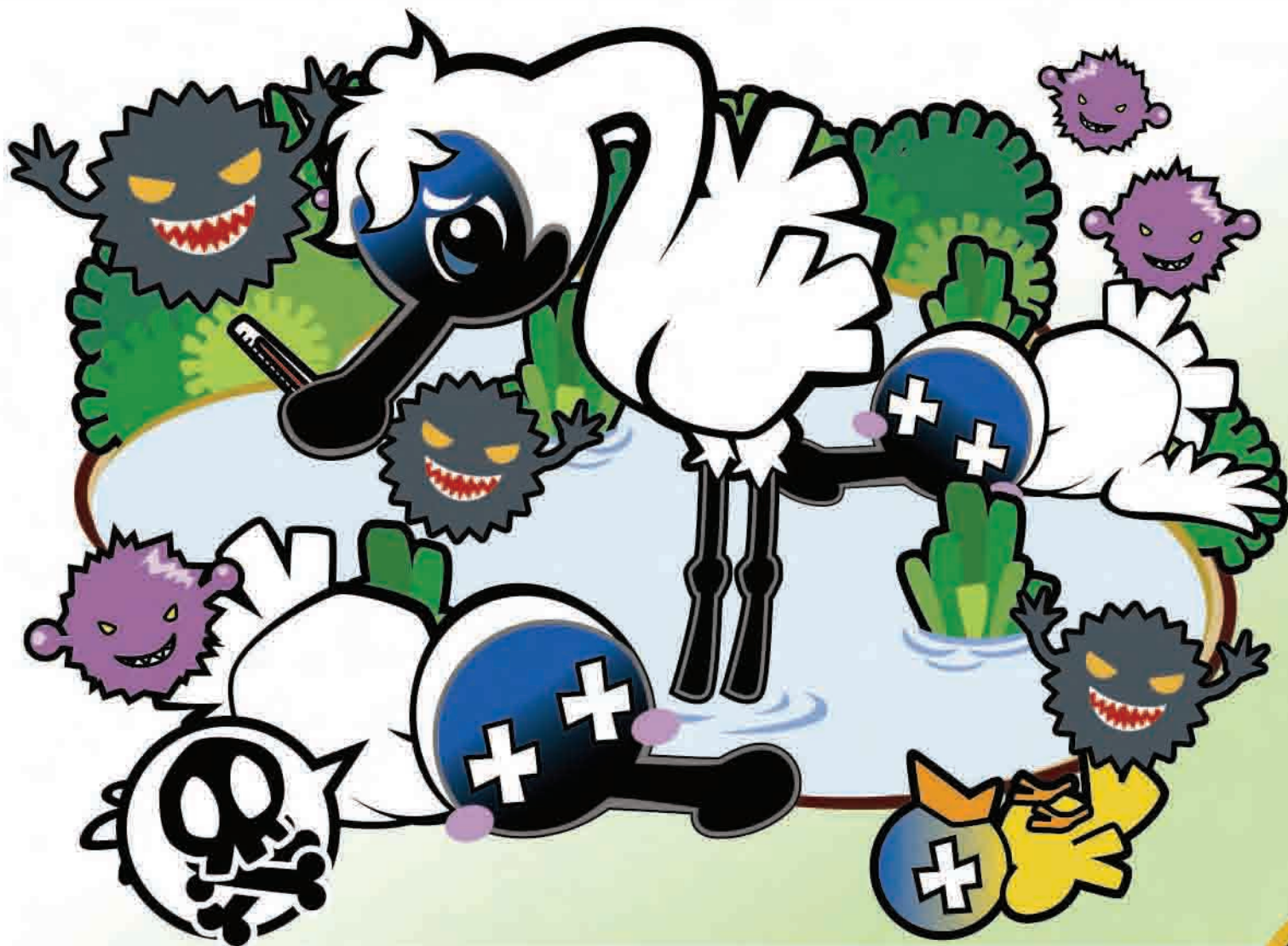


## 台灣站3號卡解說

### Taiwan Card 3 interpretation

|                                                                                                                                                                                                                                                                                                                                | 環境因素<br>Environmental<br>factor                                                       | 經濟因素<br>Economic<br>factor | 社會因素<br>Social<br>factor                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|
| 在2002至03年的冬季，台灣曾文溪口爆發鳥類肉毒桿菌症，導致73隻黑臉琵鷺死亡，佔2003年全球黑臉琵鷺總數的7%。<br>In the winter of 2002/03, 73 Black-faced Spoonbills were killed by an outbreak of Avian Botulism in the Tsengwan Estuary in Taiwan. This loss represented about 7% of the 2003 world population.                                                                |    |                            |                                                                                       |
| 死亡事件估計是由於黑臉琵鷺曾進食受感染的魚類所致。<br>It is suspected that these deaths were caused by the consumption of infected fish.                                                                                                                                                                                                                |    |                            |                                                                                       |
| 在冬季，台灣擁有最大的黑臉琵鷺種群，2006年在台灣錄得的數目佔全球已知數目的49%。<br>Taiwan hosts the largest population of Black-faced Spoonbills during winter. 49% of the total known population were recorded in Taiwan in 2006.                                                                                                                                 |                                                                                       |                            |                                                                                       |
| 台灣的沿岸發展破壞黑臉琵鷺及其他野生生物的棲息地。科學家警告，鳥類大量集中在單一越冬地，一旦再次爆發另一輪疾病，便會出現很高的死亡率。<br>Coastal development in Taiwan destroyed the living habitats of Black-faced Spoonbills and other wildlife. Scientists warned that a high congregation at a single wintering site would lead to high rates of death if another disease outbreak occurred. |  |                            |                                                                                       |
| 肉毒桿菌症對人類也有潛在危險。<br>Botulism is also a potential threat to human beings.                                                                                                                                                                                                                                                        |                                                                                       |                            |  |

3



出現不明疾病！

Mysterious disease occurs!

-3

## 台灣站4號卡解說

### Taiwan Card 4 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

對大自然有更深入的了解，有助人類更有效管理及保護物種及其自然環境。

A better understanding of nature helps in the effective management and protection of species and their environment.



以黑臉琵鷺為例，科學家透過環誌及衛星追蹤確認其遷徙路線。這樣做有助確認牠們遷徙路線中的重要棲息地，以便當地政府加以保護。  
In the case of Black-faced Spoonbills, scientists have identified their migratory routes through ringing and satellite tracking. By doing so, important roosting sites along the flyway have been identified and conserved by local governments.

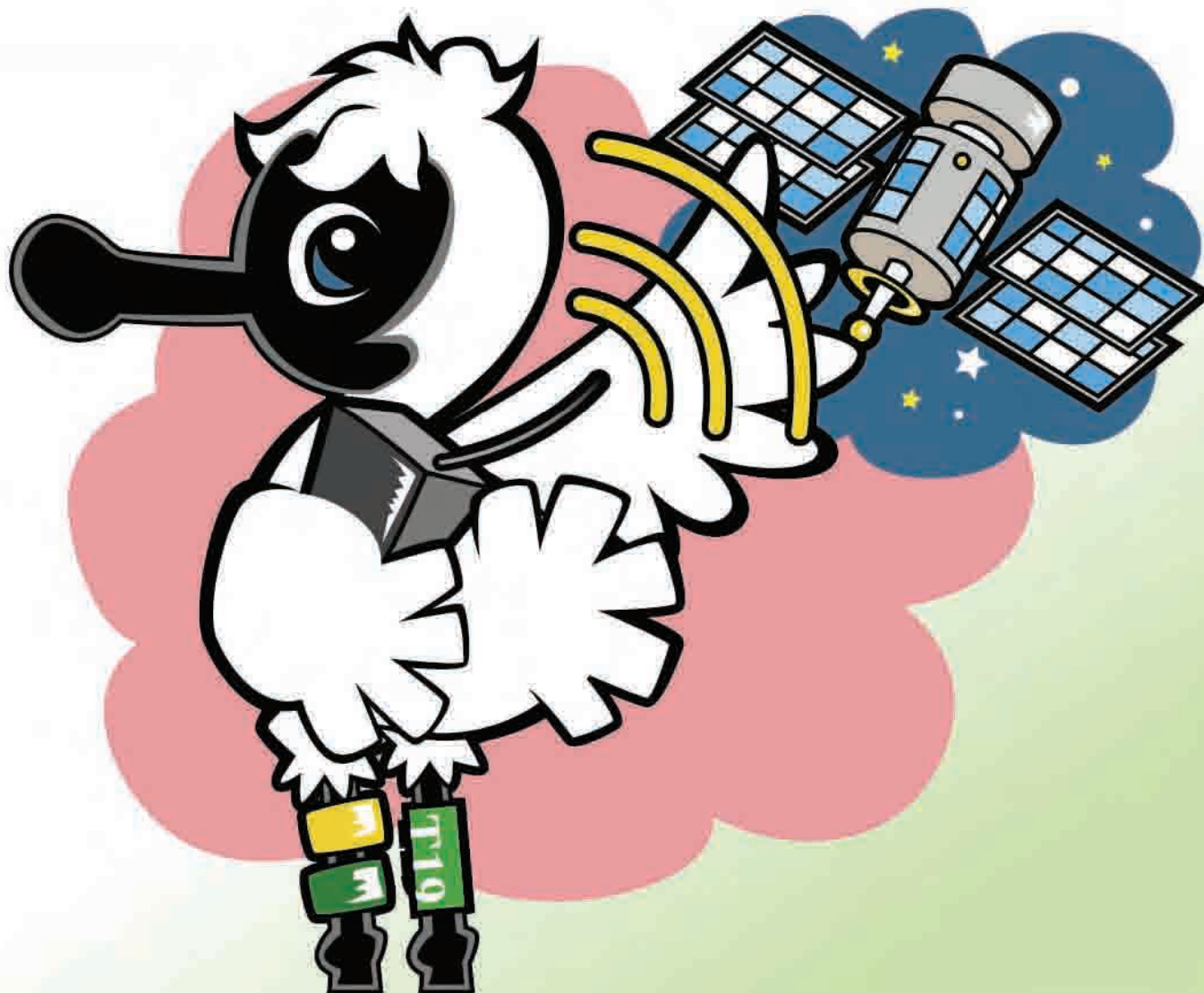


科學家亦會把獨有的顏色腳環及號碼套在黑臉琵鷺的腳上(就像身份證一樣)。不同國家的科學家及觀鳥者會分享這些重要的資料。這樣我們便可以在野外用望遠鏡辨認出個別的黑臉琵鷺。

Scientists also put unique colour bands and number on their legs(similar as Identity Card number) This important data will share among scientists and bird watchers in different countries. By doing so, we can identity individual Black-faced Spoonbill in the field through telescope.



4



**科學家搜集到更多有關自然生態的資料。**

Scientists gather more information on natural history.



## 台灣站5號卡解說

## Taiwan Card 5 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

倘同一地點出現鳥類或其他野生生物數量有顯著增加的現象，我們應視之為警報。

A significant increase in the population of birds or other wildlife at one location should be taken as a warning signal.

發展破壞鳥類的棲息地及導致食物減少，迫使牠們集結在同一地點。  
Development decreases the availability of suitable roosting areas and food for birds, forcing them to congregate in the same location.

鳥類之間對食物及空間的競爭變得激烈。

The competition for food and space among the birds becomes intense.



# 5



**越冬地過份擠迫，導致食物不足。**

Crowded wintering site leads to a shortage of food.

**-2**

終點站

香港

Final Site  
Hong Kong



## 香港站1號卡解說

### Hong Kong Card 1 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

保護環境的第一步是認識環境。

The first step to conserve the environment is to learn "ABOUT" the environment.

認識環境最有效的方法是在環境中學習。

The most effective way to learn about environment is to study "IN" the environment.

這個戶外教室讓你親身運用視覺、觸覺、嗅覺和聽覺來感受大自然，令你的體驗更有意義及印象更深刻。

This outdoor classroom allows you to see, touch, smell and hear nature at first hand, making the experience more meaningful and memorable.

鼓勵你的同學、家人及朋友親身感受及保護我們的自然資源。

Encourage your classmates, family and friends to experience and protect our natural resources.



# 1



**學生樂於在環境中學習。**

Students are eager to learn "IN" the environment.



## 香港站2號卡解說

### Hong Kong Card 2 interpretation

|                                                                                                                                                                                                                                                                                                                                                           | 環境因素<br>Environmental<br>factor | 經濟因素<br>Economic<br>factor | 社會因素<br>Social<br>factor |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------|--------------------------|
| <p>在亞洲，沿岸地區的居民數百年來也有在海灣或河口地區旁以蝦塘養蝦(傳統稱為「基圍」)。</p> <p>In Asia, people living in coastal areas have many hundreds of years of experience cultivating shrimps using ponds (traditionally known as <i>gei wai</i>) located adjacent to bays or estuaries.</p>                                                                                                 |                                 |                            |                          |
| <p>基圍(指以人工基堤圍成的蝦塘)可用作養殖蝦、魚、蠔、海藻及蟹。</p> <p><i>Gei wai</i>, (literally meaning a pond enclosed by a man-made dam) is used for cultivating shrimps, fish, oysters, seaweed and crabs.</p>                                                                                                                                                                    |                                 | +                          |                          |
| <p>基圍養殖方法是一個很好的例子，展示如何以可持續原則管理沿岸濕地，帶來經濟及生態效益。</p> <p>The <i>gei wai</i> method is a very good example to demonstrate how coastal wetlands can be managed sustainably, with both economic and ecological benefits.</p>                                                                                                                                     | +                               | +                          |                          |
| <p>在香港，唯一現存而仍然運作的基圍位於米埔自然保護區內，負責管理保護區的世界自然基金會香港分會仍利用傳統方法運作基圍，以保護野生生物及傳統文化。</p> <p>In Hong Kong, the only traditionally operated <i>gei wais</i> remaining are located in Mai Po Nature Reserve. WWF Hong Kong, who is responsible for managing the reserve, still uses the traditional <i>gei wai</i> approach for wildlife and culture preservation.</p> | +                               |                            | +                        |

# 2



**傳統蝦塘（基圍）為人類及野生生物提供食物。**

Traditional shrimp ponds ( *gei wai* ) provide food for humans and wildlife.

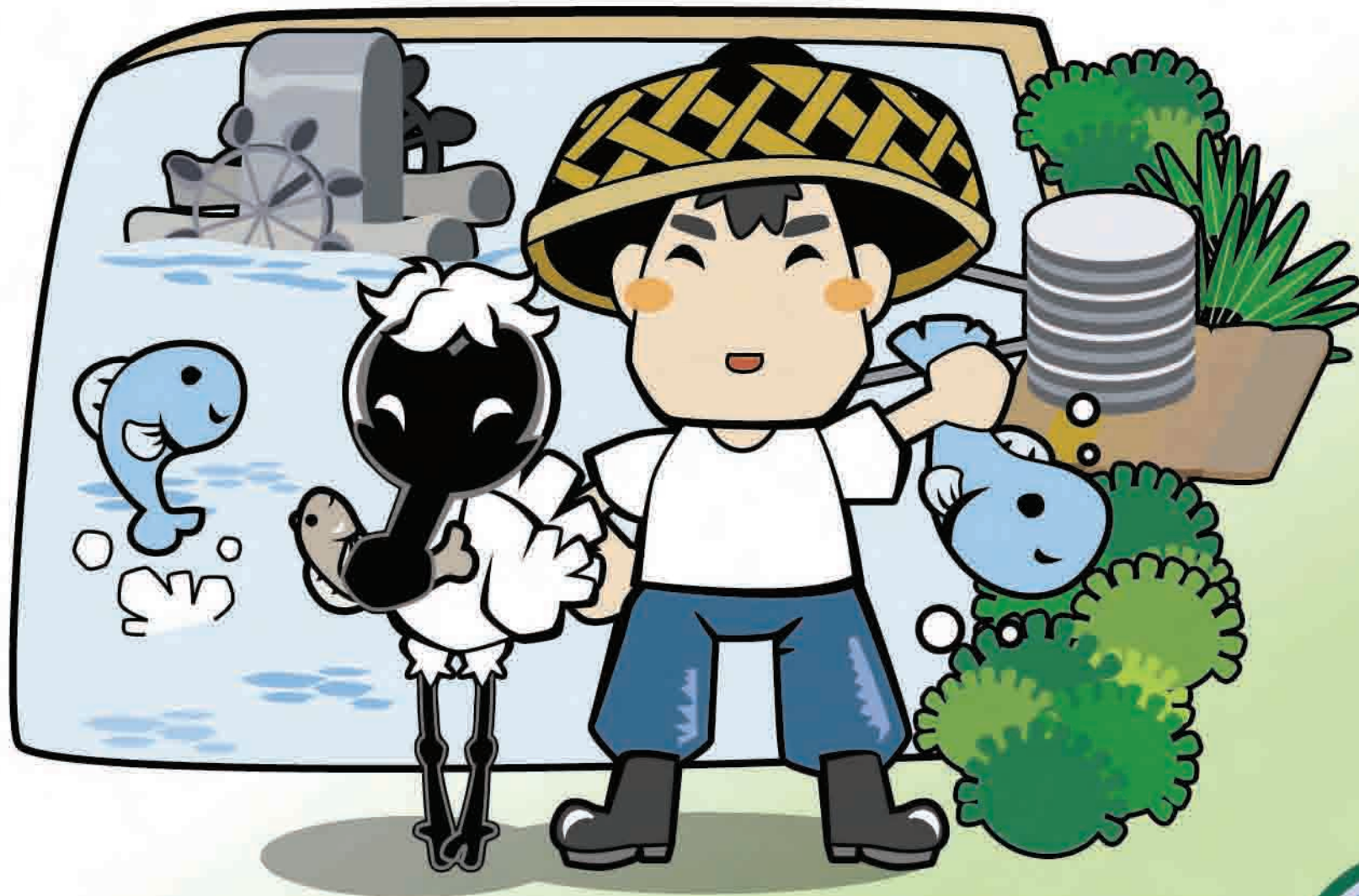


## 香港站3號卡解說

### Hong Kong Card 3 interpretation

|                                                                                                                                                                                                                                                                                                                                                                      | 環境因素<br>Environmental<br>factor | 經濟因素<br>Economic<br>factor | 社會因素<br>Social<br>factor |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------|--------------------------|
| 魚塘跟基圍一樣，也是香港及中國本土文化遺產的一部分。<br>Like <i>gei wai</i> , fishponds are another part of local cultural heritage in Hong Kong and China.                                                                                                                                                                                                                                    |                                 |                            | +                        |
| 漁民把漁穫在市場出售，賺取收入，同時，他們也為鳥類、昆蟲以至哺乳動物(如獾及水獺)等野生生物提供理想的棲息地。<br>Fishermen earn money by selling fish to the market, and at the same time they also provide an ideal habitat for wildlife such as birds, insects and even mammals like mongooses and otters.                                                                                                               | +                               | +                          |                          |
| 環保的作業方式包括避免使用化學添加劑，在收成期降低魚塘的儲水量(讓水鳥有機會捕食塘中剩餘的魚類)，以及避免在魚塘附近使用網及陷阱捕捉鳥類。<br>Environmentally-friendly practices include the absence of chemical additives, the lowering of the water level in the pond during harvesting (giving water birds an opportunity to eat up the leftover fish in the pond) and the absence of nets or traps for bird hunting around the ponds. | +                               |                            |                          |
| 本港的魚塘業正面對多種威脅，包括來自中國的魚類供應帶來的競爭及土地發展的壓力。<br>The fishpond industry is facing a number of threats in Hong Kong because of competition with fish supplies from China and development pressures.                                                                                                                                                                          |                                 |                            |                          |
| 魚塘及基圍好像海棉一樣具有吸水的功能，減低市區出現水浸的威脅。<br>Both fishponds and <i>gei wai</i> help the natural drainage of the area and provide some flood protection to nearby urban areas.                                                                                                                                                                                                  |                                 | +                          | +                        |

# 3



**漁民以環保的作業方式運作魚塘。**

Fishermen using environmentally-friendly practices for managing fishponds.



## 香港站4號卡解說

### Hong Kong Card 4 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

為配合香港新界西北的物流業發展，大部分魚塘及基圍被填平及改建為停車場。

Most of the fishponds and *gei wai* have been filled up and changed to car parks to cater for development in the logistics industry in the northwest New Territories Hong Kong.



水鳥失去重要的棲息及覓食地方。

Water birds lose important habitats for resting and feeding.



貨車數目增加造成空氣污染。

The increase in number of trucks contributes to the air pollution problem.



# 4



**填平濕地興建貨車及貨櫃的露天停車場。**

The construction of open car parks for trucks and containers reclaim wetland.

-3

## 香港站5號卡解說

### Hong Kong Card 5 interpretation

環境因素  
Environmental  
factor

經濟因素  
Economic  
factor

社會因素  
Social  
factor

提醒學生遷徙旅程尚未結束，在冬季結束後，牠們還要返回北方(如韓國)於春季進行繁殖。

Remind students this is not the very end of the journey. After the winter, they will go back to the north (most go to Korea) for breeding the following spring.

部分物種甚至由西伯利亞南下飛往澳洲越冬後再折返，例如彎嘴濱鷸。

Some species, for example curlew sandpiper, even fly from Siberia all the way down to Australia and vice versa.

# 5



**恭喜你！你已完成整個遷徙旅程！**

**Congratulations! You have completed the journey successfully!**



本遊戲是根據英國皇家鳥類保護協會國際教育主任  
Barrie Cooper先生的概念發展而成的。  
(英國皇家鳥類保護協會是國際鳥盟的英國代表)  
This game is based on an original idea of Barrie Cooper,  
International Education Manager,  
the Royal Society for the Protection of Birds.  
(The RSPB is the UK representative of BirdLife International.)





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Energy Point

第一站

# 韓國

Site 1  
Korea





第二站

日本

Site 2  
Japan



第三站

中國

Site 3  
China

第四站

台灣

Site 4  
Taiwan



終點站

香港

Final Site  
Hong Kong

