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# Mai Po Wildlife Fact Sheet

## Duck Satellite Tracking Project

2008-2011

### Introduction

Situated mid-point on the East Asian-Australasian Flyway migratory bird path, the Mai Po Inner Deep Bay Ramsar Site supports over 60,000 waterbirds in winter, including around 20,000 wild ducks. Sparse information obtained from ringed birds indicated that ducks from Hong Kong, specifically Northern Pintail and Eurasian Wigeon, migrate to northeastern China and the Far East Russia in spring. However, information as to their migration routes, stop-over sites, timing, or final destination largely remains unknown.

In winters 2008/09 (Phase 1) and 2009/10 (Phase 2), Mai Po Nature Reserve hosted a wild duck satellite tracking project. With the "participation" of nearly 50 wild ducks and funding from the Food and Agriculture Organisation of the United Nations, WWF partnered with the Department of Microbiology of The University of Hong Kong, Asia Ecological Consultants, and the US Geological Survey, to launch a study into wild duck migration from Hong Kong and the role of migratory birds in the ecology and epidemiology of avian diseases, including avian influenza.



Over 20,000 wild ducks winter in Deep Bay each year.  
© Rubin Chua

### Catching the Ducks

The freshwater ponds beside the Mai Po Education Centre regularly attract hundreds of wild ducks each winter and provide ideal conditions for using a clap net to capture duck. For scientific research purposes each captured duck was marked with a uniquely coded metal ring on it's leg and it's age, weight and body measurements recorded. Twenty-four ducks (4 Eurasian Wigeon and 20 Northern Pintail) were selected for the study in Phase 1 and another 23 (12 Eurasian Wigeon and 11 Northern Pintail) in Phase 2.

Small lightweight backpacks (weighing less than 3% of the duck's body weight) containing a satellite transmitter, small battery and solar panel (to power the transmitter) were fitted with ribbons on the back of each duck. A signal is sent out every 36 hours which can then be used by the Global Positioning System (GPS) to produce coordinates and reveal the duck's location. After processing, all ducks were successfully released back into the ponds where they were initially captured. After a few years, the ribbons eventually wear and the backpack will fall off.



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Far Above - Northern Pintail male

Above - Northern Pintail female

Far left - Eurasian Wigeon female

Left - Eurasian Wigeon male



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### Northward Migration

Following release, the ducks were mostly recorded around Deep Bay. The Mai Po Nature Reserve *gei wai* and ponds, and the Deep Bay inter-tidal mudflat - both Hong Kong and Shenzhen side - were the most important habitats for ducks to build up their energy storage before migration.

Ducks generally departed Hong Kong towards their northern breeding grounds in March. Some ducks clearly navigated along the coastline, others inland or a combination of both. During their migration, ducks utilised different types of wetland as stop-over sites: fishponds, salt pans, mudflat, lakes and reservoirs. A number of the wetlands used are protected nature sites but many others do not have any protection from human disturbance and development. The most popular first stop-over site for the tracked ducks was the famous Chongming Dongtan wetland near Shanghai, which includes a large area of inert-tidal mudflat. Interestingly this wetland area at the Yangtze estuary is where satellite tagged Black-faced Spoonbill which migrated from Hong Kong were recorded in 1999.

This study also revealed that over 80% of the tracked ducks utilised the Yellow Sea, the Yellow River estuaries on north-eastern coast of China and west coast of Korea, during their northward migration. This clearly shows the importance of coastal wetlands around the Sea for Hong Kong's migratory ducks. In recent years conservationists have expressed concern at the alarming loss of coastal wetlands in this area to various forms of development and WWF and other international organisations are increasing their focus on conserving this important wetland area. Northern China (Heilongjiang and Inner Mongolia) and Siberia were popular final destinations for the ducks.



Project team members carefully setting up the clap net. © WWF-HK



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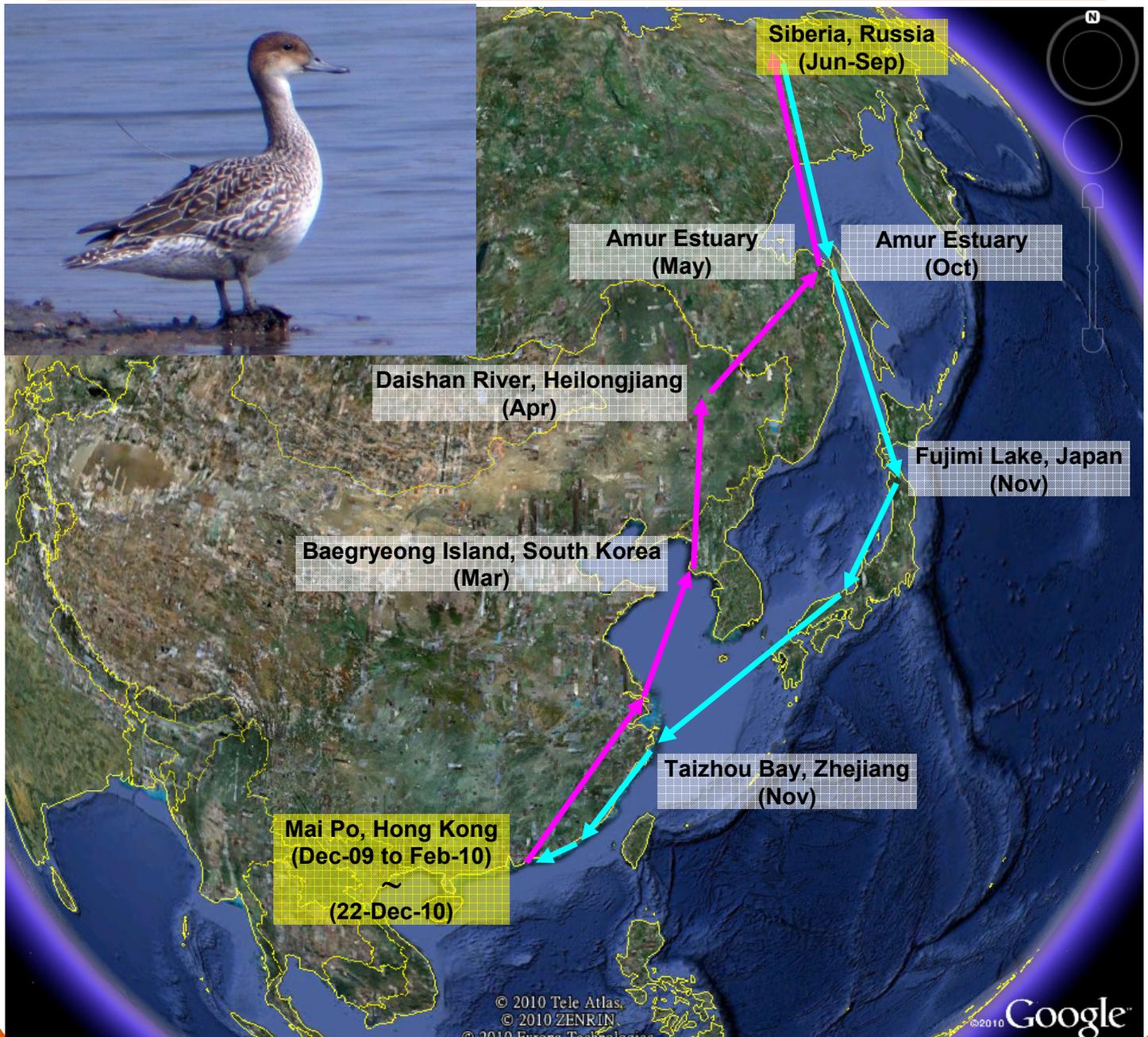
### Hong Kong Duck's 10,000km migration finally revealed

For the first time in Hong Kong, the project successfully revealed the complete migration journey of an adult female Northern Pintail (numbered 91268).

The returning duck left Mai Po in February 2010 and took about five months to reach the Arctic Circle. During northward migration she stopped in many areas including the Yellow Sea Region and Heilongjiang province in China. Once reaching Siberia she stopped for three months, presumably to breed, before heading southward at the end of September 2010.

From Siberia she flew at about 50km/h, stopping in Eastern Russia and Japan before reaching Guangdong province in early December 2010. Pushed on by a cold front she moved further south and eventually reached Mai Po just before Christmas 2010 after covering a total migration path of more than 10,000 kilometres.

The duck was observed resting at the freshwater pond beside the Mai Po Education Centre - where it was first captured and fitted with satellite transmitter in December 2009.





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### Other Facts

- One Northern Pintail traveled from Hong Kong to Haifeng Nature Reserve in Guangdong Province, which is 170km away, then promptly flew back to Mai Po over the next 2 days. Interestingly the Haifeng Reserve is one of WWF Hong Kong's wetland demonstration sites in Southern China. Localised movements by duck and other waterbirds is common in winter as they search for food, however an excursion involving a round trip of over 300km surprised ornithologists in Hong Kong.
- Ducks depart Hong Kong between mid-February and early May.
- Two of the Northern Pintail flew in excess of 100km/h: one bird covered a distance of 228 km in a two-hour period (an average of 114km/h)! This is the highest migration speed ever recorded in Asia.
- Two Eurasian Wigeon (91242 & 91244, both male), departed much later than others (early May), migrated together, and over-summered at Amur Estuary.
- By mid-summer, the ducks were widely spread from the deserts of Inner Mongolia to the Sea of Okhotsk near Alaska.
- Breeding likely occurred in Siberia, South Korea, Heilongjiang and Inner Mongolia.
- The longest northward migration journey was 6,500 km by Northern Pintail and 4,600 km by Eurasian Wigeon.
- The longest single movement was made by an adult male Eurasian Wigeon which flew 2,030km directly from Hong Kong to North Korea in 59 hours at an average speed of 34.4km/hr.
- Two ducks appeared to be shot, both in Russia, most likely for human consumption.



A female Eurasian Wigeon fitted with a satellite transmitter. © WWF-HK