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“Overwintering Danaids Survey 2009 & 2010” Results

Less than 100 Counted at the Largest Overwintering Site of Tigers and Crows in Hong Kong

In June 2011, Green Power announced the results of a survey of overwintering Danaids (tigers and crows). It was discovered that the largest overwintering site of Danaids in Hong Kong – at Siu Lang Shui, Tuen Mun – held less than 100 Danaids in the past two years. This is in shocking contrast to the thousands recorded in previous years.

A total of 13 Danaid species have been recorded in Hong Kong. All except Plain Tiger have the habit of overwintering in groups. There are three main groups of overwintering Danaids in Hong Kong: crows, tigers (excluding Common Tiger) and Common Tiger. From October to November each year, local Danaid populations rapidly increase. Many come from regions north of Hong Kong, migrating south in October to find a warm overwintering site. They will return to the north in February to March the following year, or may reproduce in the overwintering site. Siu Lang Shui is Hong Kong's largest overwintering site for Danaids, while Shing Mun Country Park is a temporary resting and ground for migrating Danaids that fly to other overwintering sites after the stop over. Deep Water Bay may be the largest Danaid overwintering site on Hong Kong Island.

Green Power launched an Overwintering Danaids Survey in 2009 (1); the surveyed sites were Siu Lang Shui, Shing Mun Country Park and Deep Water Bay. At Siu Lang Shui, only very small numbers of Danaids were recorded in 2009 and 2010, with just 41 and 65 recorded, respectively. According to previous records (2), during the peak period from 1999 to 2005, some 4,000 to 40,000 overwintering danaids were recorded at Siu Lang Shui.

At Shing Mun Country Park, 275 and 143 overwintering Danaids were recorded in 2009 and 2010, respectively. The numbers were similar to those recorded here by Green Power since 2005. As for Deep Water Bay, figures for 2009 and 2010 were 145 and 170, respectively, which also showed little change.

From the overall figures, we see different patterns at the three sites. However, as we carry out more in-depth analyses, we see that there has in fact been a drastic decrease of crow populations at all three sites. The main overwintering Danaids are crows at Siu Lang Shui, accounting for 80% of the total, hence the overall decrease indicates declining crow populations. At Shing Mun Country Park, there are crows, tigers (excluding Common Tiger) and Common Tiger; while the overall population is little changed, the numbers of crows are

declining. In the past two years, the numbers of crows decreased by 55%. If compared to earlier wintering butterfly records (2005), the drop is close to 80%. At Deep Water Bay, the major Danaids are tigers (excluding Common Tiger), but the crow populations also plummeted by over 90%.

There are a number of reasons for the decreasing population of crows. In general, habitat damage and natural disasters are major reasons for species declines. However, the overall environments at Siu Lang Shui, Shing Mun Country Park and Deep Water Bay have not experienced great changes, so habitat damage within Hong Kong can be excluded as a factor. Overwintering crows are very sensitive to temperature changes, and the declining populations may be due to global warming. It is noted that well-known crow overwintering sites in Taiwan also recorded decreasing populations. Experts there commented that due to global warming, the overwintering pattern of crows at Eastern Taiwan has changed: the overwintering period is shorter and the populations are drastically reduced. If habitats in the northern regions become warmer due to global warming, crows will be less likely to migrate so far south for overwintering.

Scientists are working hard to research impacts of global warming on flora and fauna. However, there is no concrete local example illustrating such effects. Crows may be the first local butterfly species shown to be affected by global warming. As the migration routes of crows are not yet fully confirmed, there may be other factors such as damage to stop over sites or poor climates that affect the numbers of overwintering crows in Hong Kong. At this stage, we have not collected sufficient data. Starting from autumn 2011, Green Power is conducting a larger scale survey on overwintering Danaids and collecting more data at various overwintering sites in Hong Kong.

- 1. Surveys on overwintering Danaids were carried out by Green Power from October 2009 to January 2010, and October 2010 to January 2011, at Siu Lang Shui, Shing Mun Country Park and Deep Water Bay.*
- 2. Data from Hong Kong Lepidopterists' Society*