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"Overwintering Danaids Survey 2017" Results
Number of Butterflies at Deep Water Bay Doubles to New Record

Environmental group **Green Power** has released the latest "Overwintering Danaids Survey" results. There are over 10 locations in Hong Kong where overwintering Danaids - tiger and crow butterflies - are recorded, including Deep Water Bay on Hong Kong Island; Siu Lang Shui in Tuen Mun, and a number of locations on Lantau Island. Every winter, large numbers of Danaids migrate from the colder northern region to spend the winter in Hong Kong. Since 2009, Green Power has been conducting surveys during the winter season to learn about the changes in Danaid numbers and their behaviour.

Summarising the data from winter 2017, which covers four Danaid overwintering locations, Deep Water Bay on Hong Kong Island hit a new record with 1,122 overwintering Danaids recorded, which is more than double the previous winter record. Siu Lang Shui in Tuen Mun, and Fan Lau and Shui Hau on Lantau held 59, 106 and 135 overwintering Danaids respectively, which is similar to the previous records.

Deep Water Bay is one of the few Danaid overwintering sites on Hong Kong Island. **Matthew Sin, Senior Environment Affairs Manager of Green Power**, said this is the second consecutive year that overwintering Danaid numbers here hit a new record level. The 2017 winter also saw the Danaid numbers surpass 1,000 for the first time, more than double the previous record of 537 overwintering Danaids recorded in the 2016 winter.

The overwintering Danaids can be divided into two kinds - tigers and crows. Tigers have always predominated at Deep Water Bay, but last winter saw a shift, with the majority becoming crows. The trend towards a higher proportion of crows became more evident in the 2017 winter with the increase in crows, while the number of tigers even declined. In the latest survey, 95% of the overwintering Danaids at Deep Water Bay were crows, with Blue-spotted Crow as the most numerous species. In other words, while the number of overwintering Danaids has increased in recent years, there is less diversity of species. Almost all were Blue-spotted Crows.

Matthew Sin said though Hong Kong is small, different overwintering sites vary in the major kinds and species of Danaids. Since the survey began, tigers have been the predominant Danaids at both Fan Lau and Shui Hau on Lantau Island, while crows are the major species at Siu Lang Shui. The decline of Danaids numbers at Siu Lang Shui in the last two years has cast

doubts regarding crows' desire to overwinter in the south. Matthew said: "While the number of overwintering Danaids at Siu Lang Shui has been declining in the last two years, the number of overwintering Danaids at Deep Water Bay has greatly increased, with crows being the dominant species. This shows that the number of overwintering crows has not declined, but they have found alternative locations to spend the winter."

Similar Numbers Recorded at Siu Lang Shui, Fan Lau and Shui Hau

59 overwintering Danaids were recorded at Siu Lang Shui, Tuen Mun; which is a slight decrease from the 66 individuals recorded last year. Matthew said that Siu Lang Shui was once the largest overwintering site for Danaids, but the numbers have been fluctuating in the last decade. Butterfly numbers would surge significantly every two to three years. The last greatest surge in numbers was in the 2015 winter, with nearly 1,600 overwintering Danaids recorded

As for Fan Lau and Shui Hau on Lantau, the former held 106 overwintering Danaids, which is a significant decline from 197 individuals recorded last year. The latter held 135 overwintering Danaids, a slight increase from 125 individual butterflies recorded in the previous winter.

Matthew also compiled the unofficial records made by Green Power Butterfly Surveyors. In winter 2017, both Pui O on Lantau Island and Kei Leng in Sai Kung held dozens to hundreds of overwintering Danaids. As there was no further data, it is uncertain if these were just occasional occurrences of overwintering Danaids, or whether they have further dispersed to various locations to spend the winter. Matthew will monitor the situation in the following winter season.

Overwintering Danaids Survey

Green Power's Overwintering Danaids Survey was launched in 2009, with more survey sites added subsequently. The survey currently covers 4 sites: Sui Lang Shui, Tuen Mun; Deep Water Bay, Hong Kong Island; and Fan Lau, Lantau. The survey starts in November each year and ends in February* the next year. The species, numbers and habits of overwintering Danaids are recorded. There are 13 Danaid species in Hong Kong; most have the habit of overwintering in groups. Every year in autumn and winter, thousands of Danaids fly to Hong Kong from the north, stop for a while and return to the north or reproduce in the overwintering sites. At present, the overwintering migration route is not clearly known. Besides Hong Kong, overwintering butterflies are also found in Taiwan and Hainan. It is possible that the three places lie on the same overwintering route.

**In response to the changes of duration of overwintering Danaids staying in Hong Kong, as well as their behaviour, the survey of winter 2017 was extended, to end in February rather than January.*