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Catch a Glimpse of Four Rare Butterflies on Summer Solstice

Green Power's "Solar Terms Butterfly Survey" has collected 14 years of data since 2005. The data unveils the best time to observe four precious and rare butterflies in Hong Kong: Common Rose (*Pachliopta aristolochiae*), White Dragontail (*Lamproptera curius*), Common Birdwing (*Troides helena*) and Golden Birdwing (*Troides aeacus*).

Hong Kong is home to some 260 species of butterflies, which are basically grouped into five categories of "very common", "common", "uncommon", "rare", and "very rare" by the Agriculture, Fisheries and Conservation Department. A few are left "unclassified". Common Rose (*Pachliopta aristolochiae*), White Dragontail (*Lamproptera curius*), and Golden Birdwing (*Troides aeacus*) are classified "rare" while Common Birdwing (*Troides helena*) is "uncommon".

Common Birdwing and Golden Birdwing, both belong to the Genus *Troides* of the Papilionidae family, are the only two kinds of insects that are under legal protection in Hong Kong. They are also listed as protected species in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES Appendix II).

The four butterfly species are limited in distribution and population as their larvae feed on only one to two kinds of rare plants. In addition, the beautiful appearance and strong contrast of golden yellow and black colour of Common Birdwing and Golden Birdwing make them a most sought after target for collectors.

Data collected in the "Solar Terms Butterfly Survey" shows that Common Rose and the two Birdwings are most easily observed during Summer Solstice. The average numbers observed in the survey route are 2.3 and 2.6 respectively. As for White Dragontail, although its peak record was on Grain-in-Ear (6th of June), the species might miss out some years during the 14-year period. On the contrary, White Dragontail was on record every year during Summer Solstice. This is actually also the only correlation revealed between specific solar term and rare butterfly. The average number of White Dragontail observed in the survey route is 5.2.

Matthew Sin Kar-wah, Green Power's Senior Environmental Affairs Manager, explained that Common Rose and the two Birdwings are relatively large in size, being poikilotherms they are only active when temperature reaches a certain level. The adult butterflies are generally actively from April through October, and appear more frequently in mid summer (Summer

Solstice) when temperature is high.

White Dragontail, on the other hand, is active from February through November. However, its small size and high speed in flying make it difficult to observe. In summer time, the species is more easily observed as it has the habit of sipping water. Therefore there is a higher number of record during Summer Solstice.

Sin also pointed out that as the four species have high conservation value, the Agriculture, Fisheries and Conservation Department has started to plant more food sources for the larvae at different locations in the country parks. Green Power's survey has found a mark increase in number of White Dragontail. However, the number of the other three species fluctuated in the past 14 years, especially between 2013 and 2016 the numbers reached record low. The decline was unlikely related to climate as other large Swallowtail species remain stable in population in the same period.

Sin raised particular concern for Common Rose, which was a very common species during the 1960s, but suddenly vanished between 1975 and 1984. No single observation of the adult in the wild was recorded during the period. Today Common Rose is listed as "rare" species. Although the government has put in effort to plant food sources for the larvae in various locations, the population of Common Rose is still low while other species are increasing. The reason is yet to be known. More studies are needed to formulate a suitable conservation scheme for the butterfly.

About Solar Terms Butterfly Survey

Green Power launched the first of its kind Solar Terms Butterfly Survey in 2005. The survey covers Shing Mun Country Park and Tai Po Kau Nature Reserve and collects butterfly data in the long term for analysis and comparison. Since ancient time, the solar terms have been used by traditional farmers to predict climate and crop harvest. The butterfly survey is carried out during the solar terms to record the number of butterfly species and investigate any changes and correlation.

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