



BY EMAIL ONLY

19 July, 2018

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Dear Sirs/Madams,

**Green Power's
Lantau Odonate Survey Report 2015 – 2016**

Background

1. While most major natural rivers in the New Territories have been trained and destroyed, Lantau's streams and rivers survive and their pristine settings from river sources to mouths remain intact. Unfortunately, the Government launched *Lantau Development Public Engagement-Space for All* in January 2016 and the subsequent *Sustainable Lantau Blueprint* in June 2017. Large-scale, drastic and irreversible changes to Lantau are anticipated, which may bring about adverse impacts to the ecology, water quality and landscape of natural streams and rivers on Lantau

2. As such, Green Power, a local charitable green group focusing on conservation of local streams and rivers, has been conducting odonate (dragonfly and damselfly) survey on Lantau because odonates are important bioindicators of freshwater habitats as their occurrence reflects water quality and health of ecosystems.
3. While literatures and records regarding odonate resources on Lantau are still scarce, our survey results become integral part of reliable ecological baseline data which are essential for effective assessment of environmental and ecological impacts that Lantau's streams and rivers receive.
4. Green Power initiated an odonate study in Tung Chung River in 2012, and continued to conduct more detailed baseline surveys on this taxa group in 2015-2016 at six sites in North and South Lantau, including Tung Chung River, Wong Lung Hang, Mui Wo, Pui O, Sham Wat and Tai O.

Survey Results

5. Among them are specialists of highland forest streams and species which inhabit wetlands at lower altitudes, including Mangrove Skimmer 斑灰蜻 (*Orthetrum poecilops poecilops*) which is currently listed as "Vulnerable" on the IUCN Red List of Threatened Species, the provincially rare Fiery Emperor 黃偉蜓 (*Anax immaculifrons*) and Guangdong Hooktail 廣東彎尾春蜓 (*Melligomphus guangdongensis*), as well as the locally uncommon Hainan Hooktail 海南環尾春蜓 (*Lamelligomphus hainanensis*) and Black Riverdarter 北部灣爪蜻 (*Onychothemis tonkinensis*).
6. The 2012, 2015-2016 surveys done by Green Power recorded 67 species, which amounts to over 50% of all Hong Kong odonate species. In this survey, 15 species of odonates are new records to Lantau and they make up more than 10% of all odonate species in Hong Kong, revealing the high potential for further discoveries on the island.
7. Wong Lung Hang and Mui Wo have the highest number of new records among the sites, with each of them adding 4 new species to the Lantau list. Tung Chung and Tai O contribute to 3 and 2 new records to the species list respectively, while Sham Wat and Pui O each adds 1 new species to the records of Lantau. Among the 15 new species, Common Evening Hawker 碧翠蜓 (*Anaciaeschna jaspidea*), Hainan Hooktail 海南環尾春蜓, Black Riverdarter 北部灣爪蜻 and Eastern Lilysquatter 黑背尾蟴 (*Paracercion melanotum*) are relatively rare within the territory.

7.1 Tung Chung River

Tung Chung River is still preserved in a relatively natural state from its sources to the river mouth, which is rare among the large-scale rivers in Hong Kong. Surveys in 2012, 2015 and 2016 discovered 47 species of odonates, which account for over 35% of total number of odonate species in Hong Kong and around 65% of that on Lantau. Among them are Short-winged Shadowdamsel 黃頸原扁蟴 (*Protosticta beaumonti*), Yellow-spotted Shadowdamsel 緒方華扁蟴 (*Sinosticta ogatai*), Fiery Emperor 黃偉蜓, Blue-spotted Emperor 黑紋偉蜓 (*Anax nigrofasciatus nigrofasciatus*), Guangdong Hooktail 廣東彎尾春蜓, Hainan Hooktail 海南環尾春蜓 and Mangrove Skimmer 斑灰蜻. Yet the lower course and estuary of Tung Chung River are under threat of future new town extension. Currently river sections adjoining to villages such as Shek Mun Kap and Shek Lau Po are affected by waste water discharge and dumping activities.

7.2 Wong Lung Hang

Surveys conducted in 2015 and 2016 in Wong Lung Hang valley recorded 39 species of odonates, which account for about 30% of the total number of odonate species in Hong Kong and 53% of that on Lantau. Notable species include all of the four species of Shadowdamsel found in Hong Kong, Blue Chaser 濕地狹翅蜻(*Potamarcha congener*), Fiery Emperor 黃偉蜓, Guangdong Hooktail 廣東彎尾春蜓 and Hong Kong Clubtail 香港纖春蜓 (*Leptogomphus hongkongensis*) which is locally common but endemic to the territory. Although Wong Lung Hang holds quite a number of odonate species, its lower course is impacted by waste water discharge from Chek Lap Kok San Tsuen and channelization of the river course.

7.3 Mui Wo

Surveys conducted in Mui Wo in 2015 and 2016 recorded 38 species of odonates, which amount to about 30% of all odonate species in Hong Kong and over 50% on Lantau. These include locally uncommon species such as Black Riverdarter 北部灣爪蜻. The streams in river basin covering Mui Wo are threatened by pollution, channelization, construction works, as well as future development plans.

7.4 Pui O

Surveys conducted in Pui O in 2015 and 2016 recorded 38 species of odonates, which amount to about 30% of the total number of odonate species in Hong Kong and over 50% of that on Lantau. These include Blue-spotted Dusk-hawker 日本長尾蜓(*Gynacantha japonica*) and the four Shadowdamsels found in Hong Kong: Blue-tailed Shadowdamsel 香港鏢扁螳 (*Drepanosticta hongkongensis*), Short-winged Shadowdamsel 黃頸原扁螳, White-banded Shadowdamsel 白瑞原扁螳(*Protosticta taipokauensis*) and Yellow-spotted Shadowdamsel 緒方華扁螳. The hill streams in the upper course of the river basin in Pui O nurture a number of damselflies, and there is by far the only site in Hong Kong where all the four species of Shadowdamsel can be found at the same altitude within the same valley. Yet stream sections in the lower course and the nearby wetlands are now threatened by water pollution from domestic sources and dumping activities.

7.5 Sham Wat

The one-year survey in Sham Wat in 2016 shows the site recorded 31 species of odonates, which account about 25% of all odonate species in Hong Kong and 42% of that on Lantau. Species recorded include Common Evening Hawker 碧翠蜓(*Anaciaeschna jaspidea*), Fiery Emperor 黃偉蜓 and Dingy Dusk-hawker 細腰長尾蜓(*Gynacantha subinterrupta*). The catchwater intercepts a large portion of stream water feeding lower course of the Sham Wat river basin. The stream water is prone to pollution by villages nearby. Some areas of the seasonal wetlands at the estuary are also affected by construction work.

7.6 Tai O

The 2016 survey conducted in Tai O recorded 41 species of odonates, which account for over 30% of all odonate species in Hong Kong and 55% of that on Lantau. Records include lowland species such as Eastern Lilysquatter 黑背尾螳(*Paracercion melanotum*), Blue Sprite 綠斑螳


(*Pseudagrion microcephalum*), Mangrove Skimmer 斑灰蜻 and Ruby Darter 紅脰蜻 (*Rhodothemis rufa*). Rural development is expanding in Tai O, and the destruction to lowland habitats exacerbates. The extensive reed bed located in Leung Uk is also highly threatened.

Urge for Protection of Streams and Rivers on Lantau

8. Although the Administration commissioned a consultancy study in April 2018, namely “Ecological Study for Pui O, Shui Hau and Tai O and Neighbouring Areas-Feasibility Study”, only three sites are included in detailed study and some important sites are omitted, e.g. Tung Chung River and Wong Lung Hang. Regarding the biodiversity of odonates, different species are found inhabiting different parts of streams and rivers in the survey. Therefore, Green Power sincerely recommends the Administration to adopt our survey results so as to protect the streams and rivers on Lantau in a holistic manner that the river basins, river courses and estuaries are included.
9. The results of this survey show that there are important streams and lowland wetlands found on Lantau which nurture rich diversity of odonates, and they deserve decent and timely protection. Most hilly areas higher than 100m are within country parks and protected from major development and destruction, thus the water quality of the hill streams remains generally good. However, coastal lowland habitats are encroached and polluted by neighboring villages, and vulnerable to the expansion of new towns. To protect freshwater habitats on Lantau, the Government must:
 - i. Avoid and prohibit excavation, land filling or civil engineering works in natural stream beds and banks;
 - ii. Protect water quality of natural streams by banning connection of sewers or stormwater drains to streams and rivers, and prohibiting disposal of sewage or solid wastes into river channels or stormwater drains.
 - iii. Protect the wetlands, streams and the associated plants and hydrological systems by eliminating dumping activities which destruct the habitats.
 - iv. Consider to release stream water to natural streams that are intercepted by catchwaters.

Thank you very much for your kind attention. I look forward to your effective actions to preserve Lantau’s stream and rivers.

Yours faithfully,



CHENG Luk-ki
Director, GREEN POWER