



BY E-MAIL ONLY

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17 June, 2016

Dear Mr. Siu,

Wise Land Use for River Basin in Tai Ho Outline Zoning Plan

1. Green Power is a local charitable green group with river conservation being one of our focused issues. We submitted our views and comments on the Draft Tai Ho Development Permission Area Plan (DPA/I-TH/1) on 28 May, 2014 regarding the preservation of water quality, ecology, hydrology and landscape of Tai Ho River system.
2. Herein, we would like to draw your kind attention to the environmental, ecological and hydrological impacts of land use planning in Tai Ho River Basin and Tai Ho Bay.

Why should rivers be taken into consideration for land use planning?

3. River system, which comprises mainstream and tributaries, and their whole sections of courses, estuary and river basin, is a dynamic natural system that integrates and interacts with the geological, hydrological and ecological settings holistically. Negligence in river functions and processes during land use planning will lead to depreciation and loss of favourable ecological services of rivers to community and result in adverse consequences.
4. Land use planning that wisely takes into account of the presence of rivers can
 - (a) lower the flood risk to secure the public's safety and properties.
 - (b) protect the river, marine and bathing beach water quality to avoid water pollution, odour nuisance, communal hygiene degradation and urban blight.

- (c) conserve river and estuarine ecology to protect biodiversity and fishery resources.
- (d) act as breeze corridors to disperse air pollutants, relieve heat island effect and moderate microclimate.
- (e) preserve few remaining natural river landscapes in the territory for public's appreciation, leisure and recreation pursuits, and as natural heritage.

How could rivers be taken into account for land use planning?

5. A holistic approach should be adopted for land use planning for river basins which, in principle, includes preserving:
 - (a) natural geometry and substratum of rivers courses including river banks, alignment and estuaries,
 - (b) river water quality,
 - (c) permeability of the whole river basin, and
 - (d) vegetation cover of river basin
6. Putting these holistic principles into planning practices for land use of river basins, the plan
 - (a) should retain the original natural alignments and banks of river courses and estuaries. Any zonings that initiate, facilitate and/or require disturbance and alteration to the environmental settings and landscape of natural river courses, banks and estuaries must be avoided.
 - (b) should not zone any residential areas or facilities vulnerable to flooding in vicinity to river courses and estuaries to secure public's life and properties from flooding and storm surges.
 - (c) should protect the water quality of rivers and estuaries by zoning nonpolluting land uses in the river basins and mouths. Polluting zonings, such as industry, restaurants, livestock farms and roads, should not be zoned in vicinity to river courses and estuaries.
 - (d) should not allow or facilitate direct discharge of sewage and surface runoff from buildup areas in the river basins through drains or outfalls. Unpaved, undisturbed and well-vegetated buffering zones on both sides of river courses should be designated to provide infiltration of surface runoff, retain permeability and its river landscape.
 - (e) should maintain the permeability of river basins by reserving sufficient vegetation cover and avoid extensive impermeable concrete paving.
 - (f) should preserve the hydrological and ecological continuity of river from estuary to headwater. Zonings should allow continuous flow of river water from the upper courses to estuaries without great man-made elevation drop and habitat fragmentation.

What are the adverse consequences of improper land use planning in river basins?

7. Irreversible and/or unnecessary adverse consequences have already been resulted locally by ignorance of river functions and processes in land use planning such as
 - (a) threat to public's life and loss of properties in flood-prone areas zoned for residential land use in flooding and storm surges,

- (b) increase in flood incidents as land uses in river basins involved extensive concrete paving leading to excessive surface runoff during storms.
- (c) deterioration of water quality of rivers, estuaries and/or bathing beaches as wastewater and polluted stormwater are discharged to river courses from adjoining polluting land uses through stormwater drains and surface runoff,
- (d) exacerbating urban heat island effect and air pollution due to sparse vegetation in the land uses in the river basins,
- (e) destruction of natural river courses and estuaries leading to ruin of natural river ecology by incompatible land uses along river courses and estuaries such as roads and residential developments that destroyed and fragmented the habitats, and/or obstructed the migration of aquatic wildlife by elevation drop, pollution, insufficient flow volume or decking of river channels

Green Power's concerns on Tai Ho River and Bay

8. Green Power opines that the land use of Tai Ho area must be wisely planned to protect its rich, remarkable and valueable ecology, water quality and landscape.
9. Tai Ho is officially recognized as one of the twelve Priority Sites for Enhanced Conservation by Agricultural, Fisheries and Conservation Department¹ where significant percentage of species in different taxa are recorded, especially freshwater fish (35%) and amphibians (46%).
10. According to a recent biodiversity study of Lantau², Tai Ho River is the richest freshwater species of any in Hong Kong, with a total of 46 species recorded. Tai Ho is of the well-known site in Hong Kong or Guangdong for the amphidromous Ayu, *Plecoglossus altivelis* which is of high conservation importance globally. In 2003, Ayu was recorded in another stream which drains into Tai Ho Bay and this and other streams at Pak Mong are believed to provide habitats for this species.
11. The Tai Ho River estuary provides an important corridor for other amphidromous fish species such as sicydiine gobies, a breeding ground for threatened horseshoe crabs (*Carcinoscorpius rotundicauda*) and a nurturing habitat for locally rare seagrasses (*Halophila beccarii*).
12. The ecological significance and biodiversity value of Tai Ho Bay and Tai Ho River estuary (refer to Appendix) is further confirmed by the ecological study of statutory Environmental Impact Assessment (Application No. 233/2015)³ recently.

¹ AFCD, HKSAR: https://www.afcd.gov.hk/english/conservation/con_nncp/con_nncp_list/files/tai_ho_public.pdf

² Noffke, C., Yip, P., *Lantau – Hong Kong's Jewel, A Biodiversity Study of Lantau*: https://issuu.com/conservation_lantau/docs/lantau-hong_kong_s_jewel_publish

³ *Tung Chung New Town Extension EIA report*, EPD, HKSAR:

13. In a landscape value study by Planning Department⁴, Tai Ho area has been categorized as “Good” landscape condition and scored “High” Landscape value.

Green Power’s preliminary recommendations for Tai Ho area

14. Based on the above-mentioned planning principles, practices and concerns, we would like to advise on the land use planning for Tai Ho area.

15. Any diversion of streams, filling of land/pond or excavation of land must be forbidden without approval of enforcement departments or authority in order to protect the Tai Ho Stream SSSI, Tai Ho Bay and the entire river system in the area.

16. In order to avoid pollution to the streams and SSSI from village houses sewage, “Village Type Development” should not be zoned in vicinity to the existing stream courses and estuary.

17. The boundary of “SSSI” should be extended to cover larger area of the intertidal mudflat in Tai Ho Bay, or the coast of Tai Ho Bay not covered by “SSSI” should be zoned as “Coastal Protection Area” or “Conservation Area”.

18. Only the stream channels of the mainstream and two major tributaries of Tai Ho Stream are designed as “SSSI” against incompatible development. The remaining courses in the upper reach of “SSSI” and all the stream banks of natural streams in the Tai Ho area have not received any adequate land use zonings which may be vulnerable to disturbance and/or destruction by future works and developments. Therefore, we advise to extend the “SSSI” to cover the whole stream courses and river banks of all tributaries in the area.

19. Maintaining sufficient vegetation cover and permeability is crucial to the hydrology, ecology and water quality of Tai Ho River, as permeable (not concrete-paved) and vegetated land can moderate the flow volume and purify the surface runoff. Therefore, significant portion of the land use in the river basin of Tai Ho River should be non-polluting and unpaved to prevent pollution to the stream, maintain natural hydrology and protect the delicate ecology.

20. Tai Ho Bay received all the stormwater from Tai Ho area. However, Tai Ho Bay is almost completely sheltered from the open sea by North Lantau Highway (NLH) with an outlet (of about 20 metre wide) underneath NLH. Its turnover rate of seawater is hugely plummeted. Therefore, the carrying capacity of the sheltered Tai Ho Bay to degrade pollutants collected from Tai Ho

http://www.epd.gov.hk/eia/register/report/eiareport/eia_2332015/MainV1_CH.htm

⁴ Planning Department, HKSAR, *Landscape Value Mapping of Hong Kong*:

http://www.pland.gov.hk/pland_en/p_study/prog_s/landscape/e_index.htm

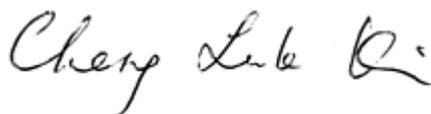
area, should be cautiously considered. And land use of Tai Ho area should not generate extra pollution that overload the self-purification capacity of Tai Ho Bay.

21. Road access will promote incompatible development, air and noise pollution, and facilitate illegal dumping and landfilling on farmlands and riverbanks. In order to prevent uncontrollable and unenforceable vandalism in Tai Ho area and other potential adverse impacts of road access, we urge the Administration to
- (a) impose traffic restriction in Tai Ho area, especially for construction trucks and machinery, and
 - (b) avoid non-essential roads access to ecologically sensitive areas such as natural coastlines, river banks, fung shui wood and other ecologically important sites.
22. Tai Ho River is one of the few remaining medium-sized natural stream courses running continuously from upland to a lowland estuary. Tai Ho River (mainstream), its estuary and the lower and middle reaches of the three major tributaries were designated as a “SSSI”. Regrettably, the unique land use characteristics of rivers are not adequately addressed in draft DPA plan published in 2014.
23. Therefore, we urge the Administration takes into account of and makes wise use of the functions and intrinsic values of river systems in the landuse planning that will not only promote sustainable development and biodiversity of Tai Ho area, but also avoid costly and irreversible environmental, economic and social burdens in the future.

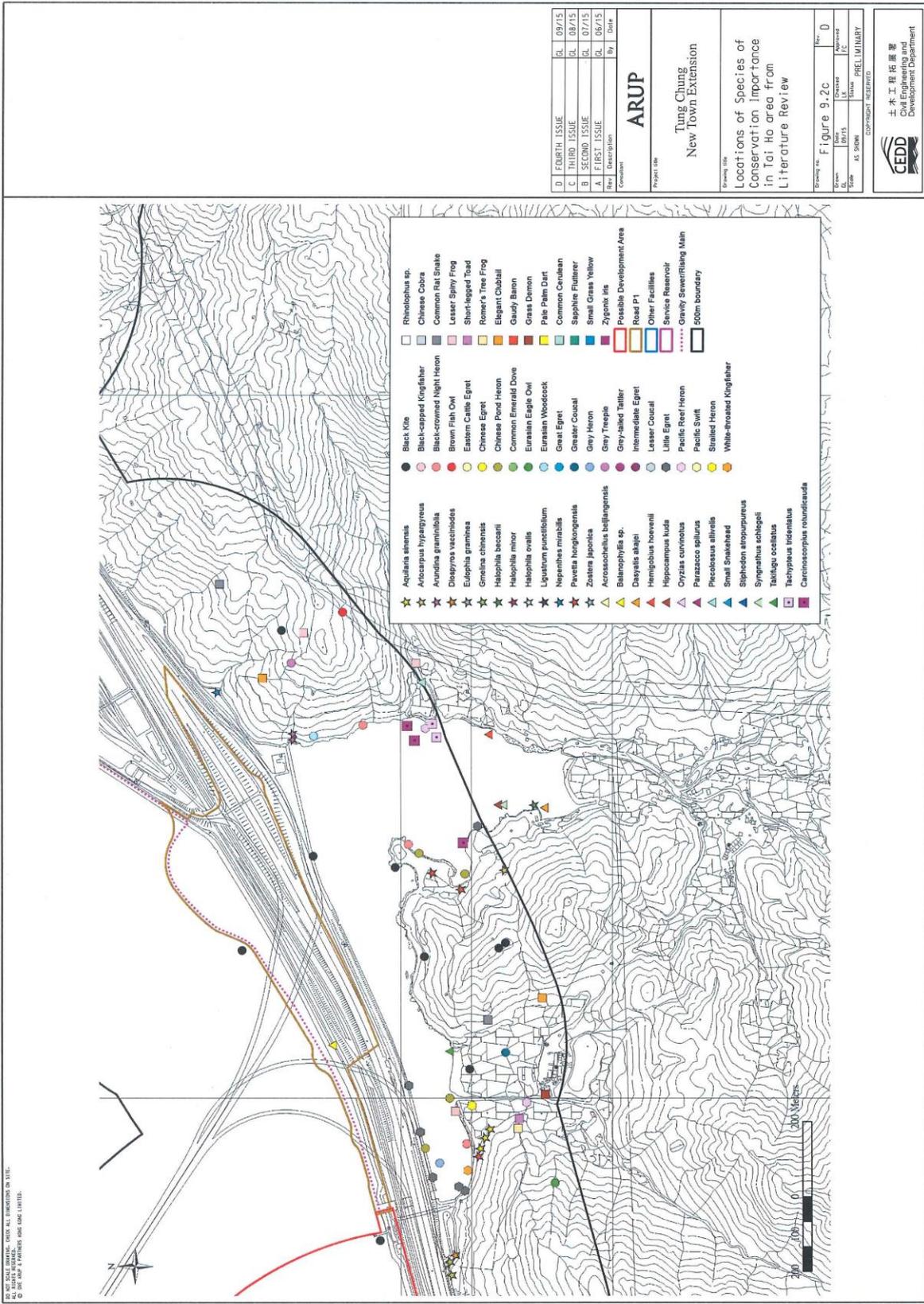
Should you have any inquiries or need further information, please contact the undersigned at Green Power (T: 3961 0200; Fax:2314 2661, Email: lkcheng@greenpower.org.hk).

Thank you very much for your kind attention and we look forward to a wise landuse plan for Tai Ho area.

Yours faithfully,



CHENG Luk-ki
Division Head, Scientific Research and Conservation
GREEN POWER



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|--------------------------------------|-----------------------------|-----------------------------|-----------------------------|
| ★ <i>Aquila ateneus</i> | ● Black Kite | □ Black-capped Kingfisher | □ Chinese Cobra |
| ★ <i>Atocarpus hypoleucos</i> | ● Black-crowned Night Heron | □ Black-crowned Night Heron | □ Common Rat Snake |
| ★ <i>Avudya granibliba</i> | ● Brown Fish Owl | □ Brown Fish Owl | □ Lesser Spiny Frog |
| ★ <i>Dendrocygna rectirostris</i> | ● Chinese Egret | □ Chinese Egret | □ Short-legged Toad |
| ★ <i>Eudiplos galinensis</i> | ● Chinese Pond Heron | □ Chinese Pond Heron | □ Romer's Tree Frog |
| ★ <i>Halophila beccarii</i> | ● Common Emerald Dove | □ Common Emerald Dove | □ Elegant Cuckoo |
| ★ <i>Halophila minor</i> | ● Eurasian Eagle Owl | □ Eurasian Eagle Owl | □ Gaudy Babbler |
| ★ <i>Halophila ovalis</i> | ● Eurasian Woodcock | □ Eurasian Woodcock | □ Grass Demon |
| ★ <i>Lipaitium punctifolium</i> | ● Great Egret | □ Great Egret | □ Pale Palm Dart |
| ★ <i>Nepenthes mirabilis</i> | ● Greater Coucal | □ Greater Coucal | □ Common Cerulean |
| ★ <i>Pavetta hongkongensis</i> | ● Grey Heron | □ Grey Heron | □ Sapphire Flutierer |
| ★ <i>Zonotrichia japonica</i> | ● Grey Tropicbird | □ Grey Tropicbird | □ Small Grass Yellow |
| ★ <i>Acrossocheilus beilungensis</i> | ● Grey-tailed Tattler | □ Grey-tailed Tattler | □ Zygocentris |
| ★ <i>Balaenophylla</i> sp. | ● Intermediate Egret | □ Intermediate Egret | □ Possible Development Area |
| ★ <i>Dayakia alajoi</i> | ● Lesser Coucal | □ Lesser Coucal | □ Road P1 |
| ★ <i>Hemigobius hoevernii</i> | ● Little Egret | □ Little Egret | □ Other Facilities |
| ★ <i>Hippocampus kuda</i> | ● Pacific Reef Heron | □ Pacific Reef Heron | □ Sewerage Reservoir |
| ★ <i>Oryzias latipes</i> | ● Pacific Swift | □ Pacific Swift | □ Grassy Sewerfalling Main |
| ★ <i>Parazacco spilurus</i> | ● Striped Heron | □ Striped Heron | □ 500m boundary |
| ★ <i>Picobesusa allivittis</i> | ● White-throated Kingfisher | □ White-throated Kingfisher | |
| ★ <i>Siphodon atropurpureus</i> | | | |
| ★ <i>Syngraphus schlegelii</i> | | | |
| ★ <i>Talkiella ocellata</i> | | | |
| ★ <i>Tachypausa indistinctus</i> | | | |
| ★ <i>Carinocentropus roundicauda</i> | | | |

D	FOURTH ISSUE	GL	09/15
C	THIRD ISSUE	GL	08/15
B	SECOND ISSUE	GL	07/15
A	FIRST ISSUE	GL	06/15
Rev.	Description	By	Date

Commission: **ARUP**

Project title: **Tung Chung New Town Extension**

Drawing title: **Locations of Species of Conservation Importance in Tai Ho area from Literature Review**

Drawing No.	Figure 9.2c	Rev.	D
Drawn	GL	Checked	GL
Scale	AS SHOWN	Status	PRELIMINARY

COMPASSIONATE RECONSTRUCTION

CEDD
 土木工程拓展署
 Civil Engineering and
 Development Department