

**Advisory Council on the Environment
Nature Conservation Subcommittee**

**Nature Conservation Management Agreement Project –
Progress of Implementation of the
Management Agreement on the Private Land with High Conservation Value
at Fung Yuen Valley Site of Special Scientific Interest in Tai Po, Hong Kong
(2013-2016)**

Purpose

This paper updates Members on the latest progress of implementation of the Management Agreement on the private land with high conservation value at Fung Yuen Valley Site of Special Scientific Interest in Tai Po, Hong Kong (2013-2016).

Background

2. Under the Nature Conservation Management Agreement (MA) Scheme, the Environment and Conservation Fund (ECF) had approved an allocation of \$7,774,266.15 to the Environmental Association (EA, formerly named as ‘the Tai Po Environmental Association’) for a MA project entitled “Management Agreement on the Private Land with High Conservation Value at Fung Yuen Valley Site of Special Scientific Interest in Tai Po, Hong Kong (2013-2016)” (the Project) in December 2012.

3. The MA Project in the Fung Yuen Priority Site was first launched in November 2005. The Project was a continuation of previous MA projects with an aim to conserve and enhance the butterfly habitats in Fung Yuen through a partnership programme between EA and land owners. The Project includes plantation of suitable larval food plants and nectar plants for butterflies, vegetation management, species monitoring, visitor management, and butterfly conservation education activities. The current Project was launched on 1 February 2013.

4. At the ECF Committee Meeting on 4 December 2012, it was recommended that the recipient organisation should report the progress of the ongoing MA projects regularly to the Nature Conservation Subcommittee (NCSC) under the Advisory

Council on the Environment (ACE) for better monitoring of MA projects.

5. In this regard, the recipient organisation (i.e. EA) has prepared a progress report at **Annex 1** summarising their progress of the Project during the period from 1 February 2013 to 31 January 2015 (2 years). The report provides Members with information on the implementation of the Project and efforts taken to fulfil the funding requirements, including the latest findings of the biodiversity surveys; education and publicity works; problems encountered as well as remedial measures taken to overcome problems and their effectiveness.

6. As a condition for the use of the funding, the recipient organisations are required to submit a progress report with statement of accounts to the Agriculture, Fisheries and Conservation Department and the Environmental Protection Department every six months. Both departments have examined the progress reports submitted and consider that the Project has been satisfactorily implemented.

Advice Sought

7. Members are invited to give views on the implementation and progress of the Project.

Agriculture, Fisheries and Conservation Department
Environmental Protection Department
June 2015

Management Agreement on the Private Land with High Conservation Value at Fung Yuen Valley Site of Special Scientific Interest in Tai Po, Hong Kong (2013-2016)

Objectives

- to reduce and minimize the incidence of any irregularity and environmentally incompatible behaviour on the private land in Fung Yuen Valley Site of Special Scientific Interest (FY SSSI);
- to enhance and maintain the habitat quality of private land in FY SSSI as an important site to butterflies;
- to enhance and maintain the diversity of butterfly species in FY SSSI;
- to ensure providing a refuge area to butterfly's foraging, inhabiting and breeding in FY SSSI;
- to train and develop volunteer involvement and capacity building of nature personnel;
- to promote the New Nature Conservation Policy and the importance of conservation to local community in Fung Yuen and Tai Po District, students and general public of Hong Kong, and extend to overseas visitors and scholars;
- to review ecological monitoring data for adaptive management of the Fung Yuen Butterfly Reserve (FYBR); and
- to enhance the long-term sustainability of the proposed conservation project by undertaking more revenue-generating activities and exploring marketing opportunities in the FYBR.

Management Area

- Currently, around 200,300 sq. ft. (1.8 ha) of private land in Fung Yuen were under active management by EA. The management area covered abandoned agricultural fields in Areas A and B, fruit garden in Area C, as well as the FYBR centre and associated woods. An area of 23,000 sq. ft. (0.2 ha) of private land is under negotiation with the landlord for a reasonable rent.

Area	Approximate area (ft ²)	Habitat type
Area A	35,200	C (80.1%) & F (19.9%)
Area B	25,100	C (85.7%) & F (14.3%)
Area C	130,000	F (100%)

FYBR Centre and woods	10,000	/
Total	200,300	/

Note: C = abandoned agricultural field for crops; F – abandoned agricultural land for fruit plants

Biodiversity Conservation Management

Monthly Butterfly Monitoring (Feb 2013 - Jan 2015)

- Butterfly surveys were carried out monthly and led by a local butterfly expert Mr. Pun Sui Fai. Both species richness and abundance were investigated inside the Fung Yuen SSSI area.
- Generally butterfly species were more abundant inside Reserve Phase 1 (Area B) as more nectar plants were actively planted in the area and attracted many butterfly species. Koo Ka Yuen area (Area A) had less butterfly individuals recorded as the area was not actively managed and less attractive for butterfly sipping nectar, however, large number of Hesperiiidae (弄蝶科) and Satyrinae (眼蝶亞科) species were recorded as they favor habitats within shrub land.
- Two new species, *Phalanta phalantha* (珉蛺蝶) and *Catochrysops panormus* (藍咖灰蝶), were discovered in 2013 and one new species, *Notocrypta paralysos* (窄紋袖弄蝶), was discovered in August 2014. The table below shows the new species found from 2010 till now:

Year of Record	Scientific Name	Chinese Name
2010	<i>Pelopidas subochraceus</i>	近赭殼弄蝶
2010	<i>Aeromachus jhora</i>	寬鐔弄蝶
2011	<i>Caltoris bromus</i>	無斑珂弄蝶
2011	<i>Euthalia niepelti</i>	綠裙邊翠蛺蝶
2012	<i>Lethe chandica</i>	曲紋黛眼蝶
2012	<i>Catochrysops strabo</i>	咖灰蝶
2013	<i>Phalanta phalantha</i>	珉蛺蝶
2013	<i>Catochrysops panormus</i>	藍咖灰蝶
2014	<i>Notocrypta paralysos</i>	窄紋袖弄蝶

- Tangerines, the host plant of seven species of the Papilionidae (鳳蝶科) family in Hong Kong, had been actively planted during the reporting period and

approximately a 9.5% rise of tangerine-feeding Papilionidae species were recorded in the Reserve, which indicates the success of the planting strategy.

Monthly Amphibian and Reptile Monitoring (Feb 2013 – Jan 2015)

- Night-time survey of amphibians and reptiles was conducted monthly by staff to study the species richness in the area. The survey area covered the same area of the butterfly survey (i.e. Koo Ka Yuen, Reserve Phase I and Phase II). Number of species and their abundance were recorded. A total of 11 species of amphibians and 14 species of reptiles were recorded during Feb 2013 - Jan 2015. Most species found were common species, except Big-headed Frog which is listed as Local Concern by Fellowes et al. (2002), and Lesser Spiny Frog which is listed as Vulnerable under IUCN Red List.

Quarterly Bird Monitoring (Feb 2013 – Jan 2015)

- Bird surveys were carried out by the Hong Kong Bird Watching Society to investigate the species richness and abundance of birds in Fung Yuen Road, Fung Yuen Village and SSSI Area quarterly a year.
- Area along Fung Yuen Road recorded more bird species and individuals while area of Fung Yuen Lo Wai and Mak Uk had the lowest records of bird species and individuals.
- The highest species richness and abundance were yielded in winters, with high diversity of winter visitors. It indicates that Fung Yuen is an important habitat for wintering of birds.
- 8 new species were recorded during the reporting period:

Year of Record	Scientific Name	Chinese Name
2013	<i>Myophonus caeruleus</i>	紫嘯鶇
	<i>Horornis fortipes</i>	強腳樹鶇
	<i>Clamator coromandus</i>	紅翅鳳頭鶇
	<i>Acrocephalus orientalis</i>	東方大葦鶇
	<i>Zoothera aurea</i>	虎斑地鶇
	<i>Luscinia sibilans</i>	紅尾歌鶇
	<i>Pomatorhinus ruficollis</i>	棕頸鈎嘴鶇
2014	<i>Cyornis hainanus</i>	海南藍仙鶇

- Observations of bird species including *Pycnonotus jocosus* (紅耳鶇) and *Aethopyga christinae* (叉尾太陽鳥) feeding on tangerine planted in reserve and sipping nectar from nectar plants were made respectively, showing that an

actively managed area is beneficial to the bird population as it provides a feeding place for them to breed locally.

Plant Survey (Feb 2013 - Jan 2015)

- The components of the dominant original vegetation in Hong Kong were mainly evergreen broadleaf species, and Fabaceae (蝶形花科), Rubiaceae (茜草科), Euphorbiaceae (大戟科), Lauraceae (樟科), Fagaceae (殼斗科), Moraceae (桑科) and Theaceae (山茶科) were believed to be the major families in the original natural vegetation of tropical semi-evergreen forests. These families had higher species and tree abundance in Fung Yuen, indicating the plant composition is originally natural. Many of them are also butterfly food plants for example Lauraceae and Rutaceae (芸香科) are the host plants for Papilionidae (鳳蝶科), Fabaceae for Pieridae (粉蝶科), Moraceae for Danainae (斑蝶亞科), while plants from Poaceae (禾本科) are the host plants for Satyrinae (眼蝶亞科).
- Some of the newly discovered species could be accounted by the presence of their relating larval food plants as follow:

New species in last 5 years	Corresponding food plant	Location
<i>Aeromachus jhora</i> (寬鏢弄蝶)	<i>Leersia hexandra</i> (李氏禾)	Area C
<i>Caltoris bromus</i> (無斑珂弄蝶)	<i>Bambus</i> (竹)	Areas A / B / C
<i>Catochrysops panormus</i> (藍咖灰蝶)	<i>Cajanus cajan</i> (木豆)	Area C
<i>Catochrysops strabo</i> (咖灰蝶)	<i>Desmodium heterocarpon</i> (假地豆)	Areas B / C
<i>Euthalia niepelti</i> (綠裙邊翠蛺蝶)	<i>Melastoma sanguineum</i> (毛荳)	Area B
<i>Acraea issoria</i> (曲紋黛眼蝶)	<i>Dendrocalamus asper</i> (馬來甜龍竹)	Area B

- Reserve Phase 1 (Area B) had the most species of woody and herbaceous plants, while Koo Ka Yuen Area (Area A) recorded the lowest for both plant types.

Habitat Management

- During the reporting period (February 2013 – January 2015), a total of 4,221 butterfly larval food plants and nectar plants of 70 species were cultivated within

the reserve area by the volunteers and staff.

- Weed removal was conducted daily by staff and volunteers during the reporting period.

Education and publicity works & Proposed Actions

Program	Target no.	Total no.	Completion
Weekly habitat management volunteer programme	156 programmes	352 programmes (1,964 volunteers)	226%
Delivering habitat management workshops (Each workshop for 30-50 participants)	90	48	53%
Butterfly garden outreaching programme to introduce butterfly garden in schools (funded by the Quality Education Fund)	-	15 gardens	-
Delivering species conservations workshop programme (Each workshop for 30-50 participants)	90	47	52%
Running of advisory committee meetings	5-6	4	80%
Running of management committee meetings	6-8	4	67%
Production of conference	1	Oct 2015	-
Production of leaflet	20,000	20,000	100%
Book about FY	2,000	Jun 2015	-
Production of butterfly festival	1	2	200%
Monthly butterfly festival	36	24	67%
Display panels & exhibition	10 or more	18	180%
Outreaching booths	48	43	90%

Difficulties Encountered & Remedial measures

- New residents of Mont Vert will move in in 2015. There will be 1,017 apartments consisting of around 4,000 residents who will live near by the reserve area. New residents might pose pollution problems and disturbance to the reserve. Eco-tour and education will be provided to educate residents the correct attitude and behavior towards the SSSI, reserve areas and wildlife. We will contact the management office of the Mount Vert to arrange eco-tour to the residents.
- Facing of the inflation and the rise of land cost in Hong Kong, the landlords had requested for higher rent of the farmlands and education center. We had several rounds of discussion with the landlords for reasonable rents.
- Visitors ignorant attitude towards wildlife shooting affected the flora and fauna within the reserve. EA held a press conference to announce the “Guideline of wildlife shooting” (愛自然生態攝影約章) in May 2014. It educated the public about the right attitude towards the wildlife and wildlife shooting.
- There was a high turnover rate of experienced staff in view of the comparative low salary and welfare as compared to the market rate in job market in Hong Kong. We had contacted local universities to introduce Fung Yuen to undergraduate students.

Achievements of Funding Conditions:

- (a) *EA should demonstrate to ECF Committee that it has made its utmost efforts in seeking alternative funding*

EA had sought a total of \$0.4M (5% of the total funding from ECF) as alternative funding through the Quality Education Fund (\$ 250,000) and income-generating activities, i.e. entrance fee (\$150,000).

- (b) *As suggested by NCSC under the ACE, EA is advised to conduct studies in particular on the potential ecological impacts on the Fung Yuen Butterfly Reserve due to the nearby high-rise development and to think ahead of ways to engage future residents of the nearby development, with an aim of raising their awareness on the protection of butterflies in the Fung Yuen area.*

Progress of the study on the ecological impacts from the nearby development included:

- Starting from 2013, environment monitoring on water quality, air quality, noise level and luminance level had been conducted by the Hong Kong Institute of Education and the Hong Kong Institute of Vocational Education. The two institutes will continue the monitoring.
- Monthly butterfly ecological survey, quarterly bird survey, plant survey were being conducted to monitor the flora and fauna in Fung Yuen.
- Eco-tours and resident education programmes will be conducted to educate future residents regarding the objective of the SSSI and the reserve area.