

# Kadoorie Farm and Botanic Garden

ANNUAL REPORT 2015



To harmonise our relationship with the environment





# Contents

About KFBG	02
KFBG Mission and Vision	03
Foreword	04
Sustainable Living	06
Holistic Education	16
Nature Conservation	24
Holistic Estate Management and Minimal Eco-Footprint	34
An Evolving Organisation	38
Members of the Board and Senior Management	45
Appendix	46

## Kadoorie Farm and Botanic Garden Annual Report 2015

**Publisher:** Kadoorie Farm and Botanic Garden Corporation

**Date of Publication:** October 2016

No article or photograph in this publication may be reprinted or reproduced without the written permission of the publisher. All rights reserved.

**Cover photo:**

The Green Hub (the Old Tai Po Police Station) was officially opened on 6 November 2015.

# About KFBG

Kadoorie Farm and Botanic Garden (KFBG) is situated in the rural New Territories, on the northern slopes of Tai Mo Shan, Hong Kong's highest mountain. Two steep spurs enclose its deep-set valley. Within KFBG are streams, woodlands, orchards, vegetable gardens, walking trails, live animal exhibits, floral exhibits, sustainable agriculture demonstration plots, art exhibits, a wild animal rescue centre, a native tree nursery, and, other conservation and education facilities.

In the post-war years, Hong Kong was flooded with destitute immigrants. Many had traditional knowledge of crop production and livestock farming but no stock, others had land but no experience. They required support to rebuild their lives. In 1951, in response to these pressing human needs Lawrence and Horace Kadoorie established the Kadoorie Agricultural Aid Association (KAAA), which became a key partner of the Hong Kong Government in devising and implementing a plan to help Hong Kong feed itself. The Kadoorie brothers, part of a well-established business family, saw wealth as a sacred trust to benefit mankind. With such aid, thousands of people received agricultural training; thousands of pigs, chickens and ducks were bred and given to farmers or sold to them on credit; thousands received micro-loans; and numerous wells, irrigation channels, roads, footpaths, bridges, pigsties and farm houses were built. The farm site at Pak Ngau Shek was established in 1956 as a base for livestock breeding and distribution, agricultural research, farmers training, public education and recreation. The barren slopes were terraced and planted with orchards and vegetable gardens. The development of the botanic garden began in 1963 and the plant conservation programme from 1972.

On 20<sup>th</sup> January, 1995, the Legislative Council of Hong Kong passed an Ordinance (KFBG Chapter 1156) incorporating KFBG as a non-profit corporation designated as a conservation and education centre with a new mission. It is a unique public-private partnership, for while the KFBG Corporation is a public organisation, it is privately funded by the Kadoorie Foundation (over HKD 100 million per year); these funds are supplemented by small donations from the public and occasional project-related Government grants that enable us to extend our work.

Since 1995, KFBG has been conducting a wide range of nature education, nature conservation and sustainable living programmes both on-site, and, throughout Hong Kong and South China.

In a time of severe global crisis – including the inter-related issues of widespread disconnection from nature, each other and self; the ever-increasing exploitation of, and unwise over-reliance on the world's dwindling resources to support unsustainable lifestyles; climate change; shrinking of natural habitats and species loss – KFBG, as an organisation, raises awareness, undertakes rigorous science-based species conservation and ecosystem restoration, and offers new ways of thinking and living to respond to the world's problems. Hence, our work brings hope and improvement by focusing on nature conservation, sustainable living and holistic education that re-connects people with nature. By working together with the public, Governments, academia, NGOs and businesses, we can protect our common future.

# Mission and Vision

## MISSION

To harmonise our relationship with the environment.

## VISION

A world in which people live sustainably with respect for each other and nature.

## VALUES

### Sustainable Living

Appreciating the impact of our actions with regard to current and future generations.  
Having awareness of our connection with the environment. Valuing simple and responsible lifestyles.

### Justice

Being fair and accountable. Valuing socially equitable systems that protect the health of the planet, the people and their way of life. Protecting future generations.

### Love

Having self-awareness and understanding of the inter-relationship of all things.  
Having compassion and respect for all life. Recognising that outer discord is a reflection of inner discord. Striving for inner silence.

### Participation

Engaging mentally, physically, emotionally and spiritually; fostering respect for different viewpoints, openness, dialogue and teamwork.

### Professionalism

Being a role model of caring, integrity, commitment, professional standards and best practices for partners, organisations, individuals and communities.

### Learning

Being adaptive and flexible to changing circumstances. Having a holistic outlook.  
Being practical, objective, creative and insightful.

### Happiness

Appreciating that our happiness lies in creating and sharing happiness with others.

# Foreword

In August 2015, after five years of planning and renovation, in partnership with the HKSAR Government's Development Bureau, we proudly opened the Green Hub at the Old Tai Po Police Station. This lovely heritage site gives a new dimension and added depth to our sustainable living programme.

The various programmes run at the Green Hub stimulate the local economy, build community spirit, open hearts and minds to a climate-friendly diet, and teach how to live more sustainably and with more self-sufficiency. Many of the staff members at the Green Hub are both local to Tai Po and volunteers; they generously give their time and energy, and help to spread good practices and ideas throughout the community.

Having sustainable living skills and a supportive community will become increasingly more important as the effects of climate change, over-population and resource depletion compromise the comfortable and rather wasteful lifestyle of many Hong Kong people.

The leader of the Green Hub project is Idy Wong, head of KFBG's Sustainable Living and Agriculture (SLA) Department. I remember Idy and I, on a study tour to the UK in the summer of 2009, sitting planning in a hotel bar in Totnes, Devon, having just finished a meeting with the awesome teacher and writer Dr. Satish Kumar at the nearby Schumacher College, in which we had explored how to build a closer collaboration between our two organizations.

By coincidence, Totnes happens to be the incubator town of the global Transition Town Movement, which organizes energy-descent initiatives; and our trip had included participating in a 'Train the Trainer' course with this group. In early 2009 we had invited the Transition Training team of Sophie Banks and Naresh Giangrande over from Totnes to deliver a workshop for us in Hong Kong. Some of their ideas and methods inspired us, particularly cultivating the inner-resilience of individuals. We decided then to expand our existing programmes to reach out into the community more. An idea started to emerge: establishing a dedicated facility within an urban community to run courses, demonstrate sustainable alternatives and, more importantly, to serve as a hub to catalyze the transformation process and promote a local economy.



That night in the hotel bar in Totnes, inspired by Satish, Idy and I drew a mind-map of the programmes we could offer to the people of Hong Kong and beyond, based loosely on the operation of Schumacher College and some aspects of the Transition Town Movement; if only we could win the right to renovate and operate the Old Tai Po Police Station, which we knew was soon to be offered for revitalization by the Development Bureau. With the support of the KFBG Board, the Trustees of the Kadoorie Foundation and our consultants we applied, and were fortunate enough to be selected to renovate and operate this fantastic heritage site.

When I visit the Green Hub and observe the programmes now, six years later, I am amazed and moved by how beautiful the building and the grounds have become, and at how so much of the detail of that Totnes mind-map has become reality, only even better than we had imagined. That is due to the insight, dedication and love of the Green Hub team, the professionalism of Head of Facilities, Denis Ng, the expertise of our green architects, the support of the Commissioner for Heritage's Office, and the participation of our local partners.

It will be an emotional moment for us when Satish stands up in November 2016 to teach his first residential course at the Green Hub.

In 2015 we also started filming for our six-part TV documentary series, through which we hope to show the public some of the wonderful work our staff are doing in the conservation of animals and plants in Hong Kong and South China, sharing ideas and connecting people more deeply with nature.

**Andy Brown**

*Executive Director*



# Sustainable Living

**K**adoorie Farm and Botanic Garden was initially established partly to help Hong Kong's farmers to create a sustainable living from the land and this initiative is still relevant and important today. In March 2015 our submission to the Food and Health Bureau's New Agriculture Policy on '*Sustainable Agricultural Development in Hong Kong*' called for the conservation of farmland.

**N**ovember's Official Opening Ceremony for our new Green Hub facility ranks as one of our most exciting moments of recent times. The historic buildings and landscape of the Old Tai Po Police Station were sensitively restored under the Government's Revitalising Historic Buildings through Partnership Scheme. The site serves as a hub for developing the local economy, and sharing sustainable living practices. Programmes include transformative education courses, networking and re-skilling activities, a vegetarian restaurant, a community market and a heritage exhibition.

**D**uring the year, we increased the scale of our aquaponics operation, production of fish and vegetables in a complimentary system. The new system is used for educational demonstration and to increase our food production.

**I**n tandem with our introductory courses for city farmers, we delivered new courses to help existing farmers develop additional practical skills. These courses are designed to enhance sustainable food production.

## Providing Input into the Government's Agriculture Policy

Responding to the public consultation by the Agriculture, Fisheries and Conservation Department (AFCD) on the Food and Health Bureau's *New Agriculture Policy: Sustainable Agricultural Development in Hong Kong*, our staff attended forums hosted by the Hong Kong Institute of Planners, the Heung Yee Kuk, green groups and Universities. We compiled and submitted our official response in March. Our Sustainable Living and Agriculture (SLA) department called for farmland to be conserved and released for production, and argued against covering farmland with concrete in order to undertake indoor, high cost, energy-intensive high-tech food production.

## Reskilling for Sustainable Living

Reskilling remains an important part of our strategy for encouraging public participation in sustainable agriculture. This year, we ran an extensive range of courses designed to educate the general public, students and farmers on different aspects of revitalising local food production in an urban context.



The Farmer Reskilling Course featuring aquatic crops.

## Sustainable Farming Courses and Workshops Organised in 2015:

Course Title	Date	Number of Courses	Venue	Number of Participants
Three-day Introductory Course on Sustainable Agriculture for City Farmers	Mar-Apr, Sep-Oct	3	KFBG	75
One-day course on Urban Farming	19 Sep	1	KFBG	8 participants from Renaissance College
Half-day Farmers' Reskilling Workshop	7 Aug, 16 Oct, 4 Dec	3	KFBG	77
Planting Vegetables in Synchrony with the Seasons of the Year (two-day course)	16 & 17 May	1	KFBG	41
Permaculture Design Certificate Course	1 May – 14 Jun	1	KFBG	28
Soil Management and Composting	24 Oct	1	KFBG	30 participants from Sustainable Ecological Ethical Development Foundation
Beekeeping Training Course – Working with the Native Bee for Sustainable Honey Production	27 & 28 Jun	1	KFBG	20
Sun-dried Vegetable Making at Harvest Festival	28 & 29 Nov	2	KFBG	49



## Public Workshops and Talks Organised in 2015:

Event	Date (and number of workshops)	Venue or Organisation	Number of Participants (estimated)
Good Life Sundays	8 Feb (1)	Central Star Ferry Pier	20
growFOOD@HOME workshop	17 Jan (1)	Renaissance College	20
	18 Jun (1)	Housing Department	24
Low-carbon Diet talk	10 Jan, 7 and 8 Feb	Hong Kong Girl Guides' Association	78



The participants of the Beekeeping Training Course.



A group photo of the Permaculture Design Certificate Course participants.



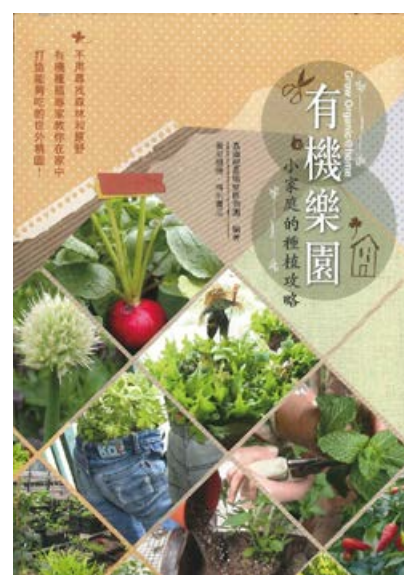
The larger aquaponics systems.

## Sustainability in Action

In May, in addition to the existing working models, we established a much larger aquaponics operation, comprising five one-cubic-metre fish tanks and eight two-square-metre planting beds, designed for food production and as a teaching resource. We ran two two-day **Aquaponics Workshops** in April and November.

Another one-day course was organised at the request of the Macao Association for Promotion of Science and Technology. In this we organised knowledge-transfer trips to local HK aquaponics farms.

Since its first operation on 28<sup>th</sup> June 2010, SLA's bio-charcoal operation processed 12.261 tonnes of wood to produce 2.4 tonnes of bio-charcoal. Its role has now been taken over by a larger bio-charcoal system, which is necessary to handle the large volume of wood-waste from old trees that is being produced in the long-term forest enhancement project at KFBG.



A new edition of the Grow Organic book was published in December to boost support for urban agriculture.



## Fostering Collaboration

We held a two-day training camp in July for a delegation of twenty-six local and mainland Youth Ambassadors and Centre for Environmental Education and Communication (CEEC) officials. The group then worked with us to deliver a series of training workshops at the Green Hub and at a local community farm for sixty participants from the Salvation Army Tai Po Elderly Centre, Tai Po Market Public School and the Hong Kong Federation of Women.



**Our team helped the Hong Kong Baptist University set up a roof-top farm at the College of International Education.**



**Local and mainland young environmental ambassadors' community service at a Tai Po community farm.**

The Sustainable Living and Agriculture Department collaborated with the Hong Kong Baptist University's College of International Education (CIE) to set up a rooftop farming project in September and October (before which the University's Structural Engineer had verified that the roof could take the extra loading). We also sponsored a seminar for 200 people, titled Urban Agriculture at CIE in November. Our work has enabled CIE to subsequently organise several Open Days, workshops and public events to promote urban farming.

In November we financially supported both the Philippine Permaculture Association and Cabiokid Foundation, Philippines-based permaculture organisations, to host the second South East Asian Bioregional Permaculture Convergence at Ilagan City, Philippines. At the event we conducted permaculture training modules and made a presentation.



**Sustainable Living and Agriculture presented at the second South East Asian Permaculture Convergence (SEAPC) in the Philippines.**



**SEAPC participants visited the Green Star Project run by the Philippines Military in Ilagan to promote sustainable agriculture as a response to challenges from climate change.**

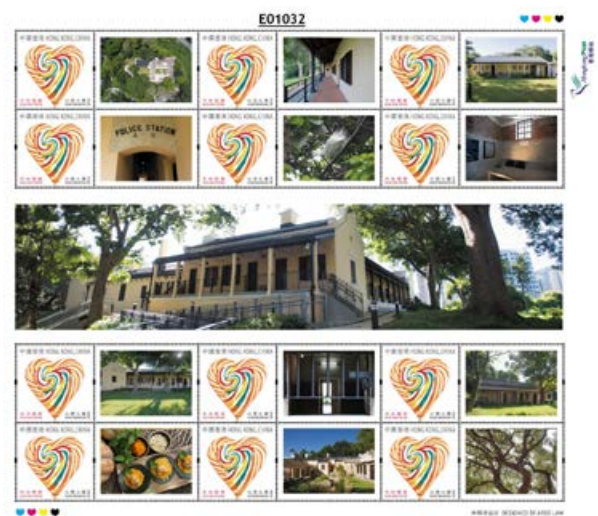


# THE GREEN HUB

## Restoration of the Old Tai Po Police Station

Under the **Revitalising Historic Buildings through Partnership**, the Development Bureau of the Hong Kong Special Administrative Region has collaborated with KFBG to transform the Old Tai Po Police Station, a Grade 1 monument in the New Territories, into a community hub to promote and demonstrate low-carbon living.

We had submitted an application for the building in 2009. After five years of hard work, we had a 'soft opening' in August 2015. The Official Opening Ceremony was held in November, attended by over 200 guests and KFBG staff and volunteers.



A set of special event stamps was produced to mark the opening of the Green Hub.



KFBG Executive Director Andy Brown (second from left) and Board member Ruy Barretto SC (second from right) officiated at the ceremony with the HKSAR Chief Executive, the Secretary for Development and the Chairman of the Advisory Committee on Revitalisation of Historic Buildings.



An aerial photo of the Green Hub.



Long before 2009, as far back as 2003, we had held a series of strategy-planning sessions involving all officers, Heads of Department and Board Members. One ground-breaking decision made back then was to look into the 'root causes' of the global crises, which seemed to us to be: individuals' fear of being inadequate, and a common belief, supported by advertising, that the fear could be overcome, and happiness achieved, by more consumption; the global economic system that requires endless growth in order to service debt; and an increasing disconnect between people and mother nature. We felt (and still feel) that these factors, drive climate change, and massive depletion of species of animals and plants and their habitats. Over the following years the Sustainable Living and Agriculture Department (SLA) ran a wide range of programmes promoting sustainable living, at KFBG, and off-site. The key strategies included arousing awareness, providing re-skilling training, bridging collaboration between various NGOs and the public, developing applicable technologies and multipliable models that could be picked up and run by local groups. We felt that we needed an urban education centre from which to do this work, hence the application for the Old Tai Po Police Station.

After the award of the site in 2010, KFBG sensitively restored the buildings and landscape of the Old Tai Po Police Station, conserving **historical, architectural, cultural and ecological** features whilst transforming the site into a place for sustainable living education.

Special features of the Police Station like the armoury, cells and report room now house a heritage display that shows how the site played a key role in the relationship between the colonial government and rural villagers from the late 1800s onwards. The revitalising work not only restored the fabric of the buildings but in some instances their architectural function, too: features included in the design by the British in 1898 to help to cool the building in the hot and humid sub-tropical weather of Hong Kong have been restored. The naturally ventilated Police Officers' dormitories have been transformed into guestrooms for visitors.



Two heritage tours are organised daily for the public, free of charge.



High ceilings, verandahs, window-blinds and large windows are 'green' design features for regulating the micro-climate.





The old canteen block has been converted into a vegetarian cafe and a cookery classroom for visitors to learn about a low-carbon diet, either by dining in or taking a 'slow food' cookery course. The canteen menu depends upon the seasonal produce received from local organic farmers. Additionally, a food 'waste' collection system is in operation to compost any surplus and eventually return the nutrients to the garden. The **'Eat Well Ambassador Scheme'** introduced in August 2015 offers on-the-job training to people interested in learning how to run a restaurant in a low carbon way.



Regular Eat Well Workshops are organised for participants to experience the different stages of bringing food 'from field to table'. Participants enjoy a light meal and then learn how to process kitchen waste.



All ingredients come fresh from local organic farms.

Surrounded by trees, the Green Hub is often described by visitors as an oasis in our city. The project team carefully designed the project to minimise any negative impact upon the trees, especially the two 'Old and Valuable Trees' growing there. Over twenty invasive exotic *Leucaena leucocephala* trees have been removed, and the gardens have been brought back to life under different themes to enrich the habitat for wildlife and people.



The Inner Courtyard, once occupied by out-buildings, has now been transformed into an Enchanted Garden.





The Kitchen Garden is an open-air classroom for food growing - supplying fresh, organic ingredients to our Eat Well Canteen, which is just a few steps away.

Adjacent to the Green Hub is the **Tai Po Market Egrettry** where egrets nest during the summer breeding season. During our restoration work we were careful not to disturb the breeding pairs and we strive to live in harmony with them in the future. The number of nests in the Tai Po Egrettry has increased from 34 in 2010, before renovation started, to 152 when the Green Hub commenced operation in 2015.



This Camphor Tree *Cinnamomum Camphora* is one of the Old and Valuable Trees at the Green Hub.



Egrets nesting at Tai Po Market Egrettry.



Volunteers collecting reeds from Mai Po Nature Reserve, to be reused as a screen at the Green Hub to protect the local egrets from disturbance by people.





The Green Hub seeks to ‘walk the talk,’ serving as a showcase of how to harmonise our relationship with the environment. **The Community Market** runs every Sunday and we are experimenting with a small-scale Community Currency. A wide range of transformative education courses led by respected local and international thinkers and teachers have already been organised to teach and empower individuals to advance the sustainability movement. Please refer to the section about Holistic Education for more information.

Month	Programme Nature	Organisation/ Institute
September	<i>Economics of Happiness</i> , 2-day transformative workshop by Helena Norberg-Hodge	EDU
October	<i>When Quantum Physics Meet Daoism</i> , 5-day transformative workshop by Shantena Augusto Sabbadini	EDU
October	<i>Herbal Experience</i> , 2-day residential workshop by Green Hub staff	Public
	<i>Cultivating Competencies and Resilience for Healthy Living</i> , 2-day residential workshop	University of Macau
December	<i>Small is Beautiful</i> , 5-day transformative workshop by Keibo Oiwa	EDU



Two community workshops were organised to mark the International Yoga Day in June.



Eleven local artists were engaged in the Wood Art Project to transform waste wood into art pieces.



The soap-making workshops bring participants together to learn how collaboration makes low carbon alternatives more affordable.

## Working Demonstrations of Sustainability

In 2015, the following agricultural produce was harvested at HFBG:

Type of Produce	Eggs (pcs)	Fruit (kg)	Vegetables (kg)	Coffee (kg)	Green Tea (kg)	Chrysanthemum (kg)	Dried Roselle (kg)	Fruit Tree Seedlings	Potted Plants	Compost (kg)	Honey (litre)
Yield	148,406	11,213.2	21,049.8	10	30.8	34.1	6.9	614	4,606	57,940	91.8

### Sustainable Agriculture Pioneers (SAP) Scheme:

In collaboration with the local NGO Health Culture Revival (HCR), the Kadoorie Conservation China Department (KCC) organised a training course titled *Improving Organic Vegetable Production with a Mulch-No-Dig System* in Chongqing in January. Thirty participants, mostly organic farmers, attended and formed an informal group that has now grown to 70 members. Our demonstration farms - three years in the making - played an important role in the success of this workshop.

In April, HCR in Chongqing together with KCC produced an introductory video on the Mulch-No-Dig System. HCR uses this PCD-funded (Partnerships for Community Development, our sister organization) video during training. To scale-up adoption, KCC - together with the Sichuan Academy of Agricultural Sciences - organised a conference, also titled *Improving Organic Farming with Mulch-No Dig System* in Chengdu in April. The conference was attended by 90 people including agricultural scientists and government officials. The results of the experiments were presented and experiences shared. It was concluded that it is realistic to 'go organic' while maintaining yields, enhancing community life, increasing biodiversity, and conserving the environment.

Bitter cardamon (*Alpinia oxyphylla*), a medicinal plant native to Hainan, is in demand but in short supply. In May, KCC contracted two wardens from Bawangling and Yinggeling Nature Reserves to produce 20,000 seedlings to be planted in our Hainan rubber agroforestry project. Planting bitter cardamon under rubber, especially in combination with agarwood (*Aquilaris sinensis*), improves diversity, enhances the ecological services of rubber plantations and provides an alternative income source for farmers.



Participants of the KCC training were impressed by the results of the soil tests they conducted. The tests indicate "mulch, no-dig plot" has high soil binding effect of organic matter and is comparable to soil of a secondary forest.



Field visit to see the benefits of mulch-no dig farming during the "Improving Organic Farming with Mulch-No Dig System" conference co-organised by KCC, Sichuan, April.



Bitter cardamon (*Alpinia oxyphylla*) planted under rubber trees in Yuanmen, Hainan. The farmer is also a Yinggeling warden, and is collaborating with KCC in a rubber agroforestry project to produce seedlings of this highly sought-after medicinal plant.



# Holistic Education



**F**or the first time, KFBG ran *In Touch with Nature* summer and winter day camps, whereby children deepened their relationship and experience with nature, in five-day non-residential camps.

**O**ur transformative education programme continues to attract members of the public keen to enhance their understanding and motivation to live a more simple life, as demonstrated by the enthusiastic reception given to Keibo Oiwa, the founder of The Sloth Club and renowned teacher and documentary filmmaker. Keibo conducted the five-day workshop titled *Slow is Beautiful - Learning Ecological Wisdom from Asian Traditions*, at the Green Hub.

**O**nce again we welcomed Italian physicist and Taoism scholar Shantena Sabbadini, who presented his unique five-day transformative workshop *When Quantum Physics Meets Daoism - Holistic Thinking in Caring for Planet Earth*, also at the Green Hub.

**W**e continued our tradition of attracting talented artists to celebrate nature, when the Asian Young Musicians' Connection played traditional Japanese and Korean instruments at KFBG for the public in a beautiful outdoor experience.

## Special Programmes

Our ***In Touch with Nature*** five-day summer camp for three groups of children ran over three consecutive weeks in July. Led by education officers and interns who took on the role of camp counsellors, 137 primary school children enjoyed a range of activities. They participated in a treasure hunt, hiking, an interactive drama performance, a chalk workshop, the 'little farmers' experience' and spent quiet time connecting to nature.

During December, 49 children explored KFBG at our three-day *In Touch with Nature* winter camp. The seven to ten year-olds took part in fun and experiential activities such as hiking, art in nature, and interactive drama workshops. Thanks to the positive feedback we received from children and parents the camps will be held and expand in the coming years.



Children hiking on the Sky Trail during the 3-day Winter Camp.



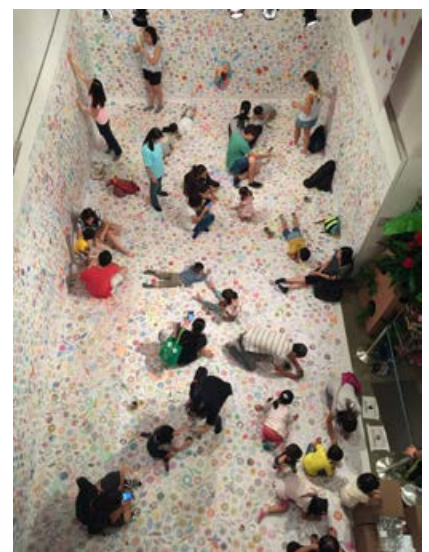
Children re-creating a still frame from a memorable scene of the drama performance they were involved in.



Living displays for the special orchid exhibition **Nature's Nobility – Discovering the Wonders of Orchids** in JCCAC.



A child experiences what happens when a flower is pollinated by an insect in our popular "Sliding into an Orchid" game during the Orchid Exhibition in JCCAC.



**Colouring in Silence** was the most popular activity in **Nature's Nobility – Discovering the Wonders of Orchids** Exhibition and Art Workshop at the JCCAC.

The Jockey Club Creative Arts Centre (JCCAC) in Shek Kip Mei, Kowloon was the venue for our ***Nature's Nobility – Discover the Wonders of Orchids*** exhibition and art workshops in July. The exhibition attracted a record 10,400 visitors. The activities included painting on Chinese fans, making orchid handicrafts, art, musical performances, storytelling, expert presentations and learning facts about orchids. Young children had fun playing *Sliding into an Orchid*, a game that simulated the pollination process carried out in real life by insects. Plant-lovers enjoyed the beautiful biodiversity-themed flower display in the Central Courtyard of the JCCAC. Our Flora Conservation Department staff were on hand with orchid-growing tips at the Orchid Repotting Workshop, and the *Colouring in Silence* activity zone proved a popular place to become mindful – participants coloured in a whole room twice over during the two weeks.



## Visitor Activities

KFBG welcomed some 160,019 visitors to our main site in 2015, a decrease of 6,651 compared to the previous year. The busiest month was March with 26,778 visitors. The decline in visitor numbers - mainly from schools, commercial and NGO groups - resulted, perhaps, from an increase in admission fees for children from \$0 to \$15 from 1<sup>st</sup> July 2014. The very hot weather in May and June 2015 may also have contributed to the decline of group visitor numbers. May 2015 was the fourth hottest May, while June 2015 was the hottest June, in Hong Kong since records began in 1884. However, the increase in the general adult admission fee (from \$20 to \$30) and the hot weather did not make a big impact on general visitor numbers (+5.8%).

Our **Animal Keeper Talks** are very popular with young children and are a marvellous way for them to have a safe close encounter with some of the animals living at KFBG, such as birds of prey, pythons, macaques and mules. KFBG's animal keepers delivered 74 informative and interactive talks to a total of 2,514 walk-in visitors in 2015.

Our *Sunday Animal Encounters* programme allows participants to get up close to some of the animals at KFBG, while our Animal Keepers, assisted by trained volunteers, provided 35 Animal Encounter sessions in 2015 for 3,634 people in prearranged groups.

Our **Discovery Table**, run by trained volunteers, displayed confiscated bird, reptile and mammal specimens to visitors at a number of sites around KFBG on selected Sundays throughout the year.

Many visitors also joined one or more of our wide range of organised activities. We operated 165 general tours throughout the year, attended by 5,966 people who were able to benefit from interacting with our education staff and nature education volunteers. Our guided visits covered experiential and mindfulness activities such as animal talks, pot-planting, quietly observing nature, and art workshops.

There were also formal visits by groups from various community organisations, government departments and local and overseas institutions. We hosted 32 such special visits in 2015 for around 1,094 people.



Our animal keeper introduces our ball python and conveys its stories.



A Discovery Table exhibits a variety of confiscated animal specimens, including birds, reptiles and mammals, on the first Sunday of the month.





Approximately 100 students from the Japanese International School joined the Nature's Paint Brush art activity on 4 November.

Some new and innovative arts and crafts activities, held in the Art House and gardens of the Lower Area, were made available to walk-in visitors. These included the **Healing Leaf** and **Nature's Paint Brush** art projects, in which visitors were invited to create art using organic materials such as leaves and twigs, found in the gardens. Some pieces created by visitors are exhibited in the Art House with the respective visitors' consent.



An overseas visitor participating in the Healing Leaf art activity.



Nature tree ring painting.

The **Art of Tree Rings** is a new year-round *Art in Nature* programme launched in Autumn 2015 that enables students from Primary and Secondary Schools to explore and appreciate nature through Tree Rings, employing observation, contemplation and art activities. The programme attracted 193 students from four schools from October to December 2015.



Tree ring art work by one of the participants.



Embracing the tangible relationship between music and nature, we invited the Asian Young Musicians' Connection (AYMC) to perform contemporary music in our beautiful natural environment in October. Using traditional Japanese and Korean instruments, they interacted with the audience by making natural sounds to create 'a musical dialogue with nature'.



Asian composers and professional musicians performed newly composed works with Japanese and Korean traditional musical instruments.



A child drawing creatively on a tree trunk at the Harvest Festival.



Our Horticulture Officer Alice Hui shared useful tips of growing plants at home during the annual Harvest Festival.



Fingerstyle Guitar Performance at the Harvest Festival.

Some 3,168 visitors, mostly families, attended our Harvest Festival at KFBG in early November. The event included a wide range of activities including tours, yoga in nature, art workshops, pot planting, music performances and various classes.



## Exhibit Changes

Monkey Haven and the Stream-Life Display were renovated. The new **Stream-Life Display** features landscaped aquatic tanks, which provide generous accommodation for the fish, while improved signage informs visitors about stream ecology.



New Streamlife exhibit representing Lam Tsuen river ecology.

## KFBG Media Exposure

We have maintained a lively dialogue with the public via the Hong Kong media throughout the year. In Hong Kong, some 222 articles about KFBG's programmes were published in local newspapers, while 35 articles appeared in local magazines, ten television stories and 17 radio programme interviews were broadcast, while 64 on-line media articles were uploaded.

In China, 87 articles mentioned the Kadoorie Conservation China Department's work. The rediscovery of the Marbled Cat in Yunnan was reported by 56 China news media outlets.

During the year, we added 3,101 new 'Friends of KFBG,' bringing the total number to 6,545, all of whom receive special notifications about events and activities. We also maintained a vibrant KFBG Facebook page, with almost daily posts. During 2015, 8,202 new Facebook users liked our page making a total of 16,756 people who follow our posts.

In late 2014, we embarked upon a six-part documentary film project to give the public a behind-the-scenes view of our work. Following a rigorous selection process, we awarded the contract to Michael Pitts and his crew. Michael is a renowned producer and cameraman with over 20 years' experience of making wildlife and science documentaries for the BBC. His work on David Attenborough's acclaimed BBC documentaries *The Private Life of Plants* and *The Blue Planet* earned him prestigious Emmy awards for cinematography. The series will explore different aspects of our conservation, sustainable living and nature education work. It is anticipated that the film series will be finished in 2017 after which we will be talking to TV channels.

Launched in March, our new website features a blog section, video library, interactive map, photo gallery, online booking system, with payment processing via PayPal and online volunteer registration.



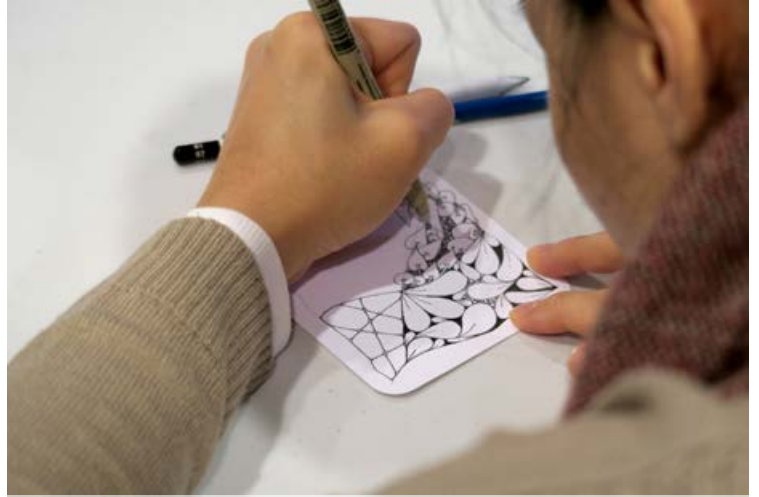
We were invited to share conservation messages in a regular column in the **Junior Standard**, a newspaper for young learners of English.



## Transformative Workshops and Events

We developed a number of new holistic education programmes in 2015, and continued with well-proven programmes for educators and school children.

In 2015, new transformative workshop **Zentangle in Nature** (Mindful drawing in nature) was launched, and 14 workshops were held throughout 2015, enabling some 186 participants to experience nature and a peaceful mind through creating lovely art.



Without any art background, anyone can enjoy the Zentangle in Nature drawing process and create beautiful graphics easily.



At the workshop, 'Economics of Happiness—Global Vision for Local Action', participants watched Helena Norberg Hodges' film and then took part in a lively Q&A session with Helena.

Helena Norberg-Hodge - producer of the award-winning film **The Economics of Happiness** - led a two-day transformative workshop titled *Economics of Happiness - Global Vision for Local Action* at the Green Hub with 27 participants in September. Helena explained how globalisation threatens social justice, risks environmental pollution and encroaches upon traditional cultures. As part of the programme participants visited the O-Farm at Hok Tau and the Sunday Farmers Market in Tai Wo.



Many of the Energy of Nature workshop participants said they now felt more in touch with nature, more relaxed and more open-minded.

Dr. Claire Elouard's five-day **Energy of Nature** - Level 1 workshop was held in October. Claire taught 15 participants how to use their senses and intuition to experience and build a connection with trees. The workshop was oversubscribed within two weeks of being announced.



Also in October, Shantena Augusto Sabbadini hosted the five-day workshop ***When Quantum Physics Meets Daoism - Holistic Thinking in Caring for Planet Earth***. Shantena, who is a renowned physicist who contributed to the first identification of a Black Hole, and is also a Daoist scholar, explained and demonstrated to the 18 participants that there is no separation between the subjective dimension of the mind or consciousness and the objective dimension of matter. Exploration of this concept is important if we are to create sustainability in the world.



The workshop provided a good platform for people to exchange ideas.

In December, the founder of The Sloth Club in Japan and documentary filmmaker Keibo Oiwa presented ***Slow is Beautiful - Learning Ecological Wisdom from Asian Traditions***. The 21 participants on this five-day workshop came from a range of backgrounds including finance, teaching, law, and social work. Keibo talked about his projects, such as the Slow Small School, and related movements and projects in Japan and Bhutan. Participants also enjoyed different activities such as *Zentangle* and a hike to Lai Chi Wo.



Keibo in traditional Japanese kimono, giving lectures to the participants at the Green Hub.



Outing to Hakka village, Lai Chi Wo and making Hakka rice cake in the five-day transformative 'Slow Is Beautiful' Workshop in December.





# Nature Conservation

**P**rotecting threatened animal and plant species, as well as their natural habitats, is one of our three core strategic directions. Throughout 2015, we funded and engaged with research projects to address the specific needs of different plants and animals, developing and implementing key conservation activities.

**W**e had some encouraging results in our captive breeding programmes in 2015. We had a 100% survival rate for the twenty-five hatching critically endangered **Golden Coin Turtles** hatched in our facility at KFBG and the eleven Critically Endangered Yunnan Box Turtles (*Cuora yunnanensis*) at our partner's site in Yunnan.

**A**s well as caring for rescued animals in our Wild Animal Rescue Centre (WARC) at KFBG, we have continued to advocate for changes to tackle the illegal trafficking of wildlife and the role Hong Kong plays as an illegal wildlife trade hub. Along with local academics and conservation NGOs we lobbied for a review of the law that would recognise the wildlife trade as a commercial crime, carried out for huge profit by organised crime, requiring magistrates and judges to recognise the true cost of the international wildlife trade, and enabling them to hand down more appropriate penalties to criminals.

**O**ur Kadoorie Conservation China Department (KCC) and the Bawangling National Nature Reserve (BWL) of Hainan organised a tree-planting event in September in the Qingsong area, home to the Hainan gibbon. In an impressive co-ordinated effort, villagers, local government representatives, BWL, and KCC staff planted over 1,200 saplings from native tree species in an area occupying approximately 6,400 square metres of eroded hillside. This stands as a good example of how we work together with local communities for Win/Win solutions.

## Protecting Species and Ecosystems

A newborn barking deer was discovered by the Flora Conservation team members on the KFBG hillside near the Signpost Corner. Fauna staff provided food to the fawn left her in the wild, and kept an eye on her. After several days of observation it was clear that the infant was not receiving any maternal care. She was taken into captivity and named Di Di. She quickly gained weight and has become quite tame. As she cannot survive in the wild she is now housed with another rescued deer 'Sa Sa' in the Parrot Sanctuary.

A juvenile hair-crested drongo - the first to be received by the Wild Animal Rescue Centre (WARC) - arrived in July. It was found to be in good health and fed well during its short stay before being ringed and released in KFBG a few days later.

One of our display **Leopard Cats** passed away on 4<sup>th</sup> December. She was over 14 years' old and displayed signs compatible with spinal degeneration. In an exceptional case two female, captive-born, leopard cats in need of a home were donated by Singapore Zoo as replacement animals for the exhibit. The animals arrived in good health on 15<sup>th</sup> December 2015 and underwent four months' quarantine at the rescue centre before being introduced to the Leopard Cat Exhibit. The two females were the offspring of rescued leopard cats and would not survive in the wild.

A further Leopard Cat received by the rescue centre in July was fitted with a GPS collar in collaboration with the AFCD and released at the beginning of December. Although the collar became detached, we were able to establish that the cat survived for at least one week after release, and we therefore assume that it could have survived in the long-term.



The young orphaned Barking Deer Di Di.



Hair-crested drongo's arrival at the rescue centre. The first bird of this species to be handled by the rescue team.



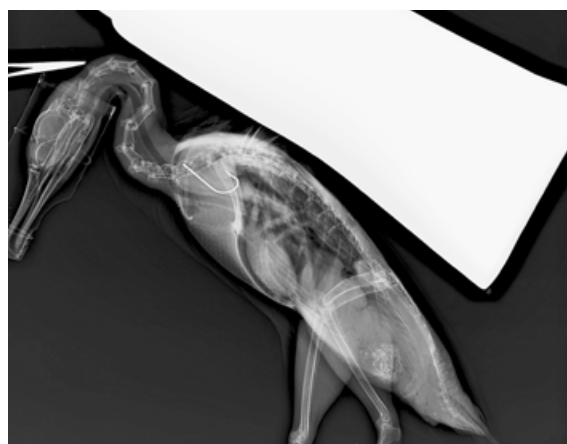
Young Leopard Cat from Singapore after arrival in Hong Kong.



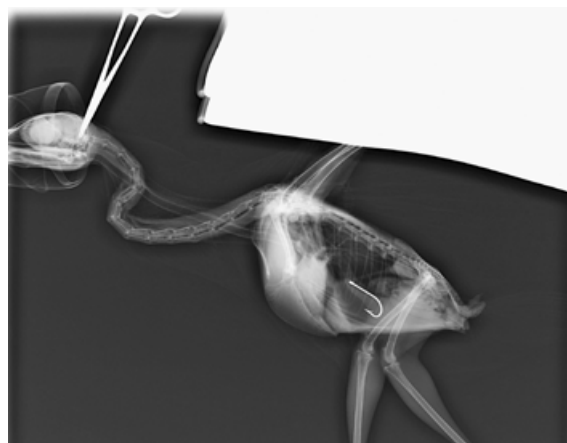
A different, wild leopard cat settling into the 'hack' cage prior to release.



Two fish hook casualties, a great cormorant and a black-crowned night heron, were received and in both cases the hooks were successfully surgically removed. Although the cormorant unfortunately did not survive, the night heron recovered well and was released.



Great Cormorant x-ray showing the ingested fish hook.



Night Heron x-ray showing the ingested fish hook.



### Total Number of Animals Received by the Wild Animal Rescue Centre from 1994 to 31 December, 2015

Mammals	743
Birds	3,632
Reptiles (excluding snakes via HK police)	25,983
Stray Snakes (via HK police up to 31 December 2015)	7,322
<b>Grand total</b>	<b>37,680</b>

### The Status of Animals in the Collection and Received by the Wild Animal Rescue Centre, 1 January to 31 December, 2015

	Total in Collection at 1 January, 2015	Received/ Captive Bred	Released/ Relocated	Died/ Euthanised	Total in Collection at 30 December, 2015
Birds	89	669	265	400	93
Mammals	110	76	31	48	107
Reptiles*	1,367	710	414	600	1,198
Stray Snakes and Lizards (mostly snakes)	0	1,059	995	64	0
Amphibians	4	593	456	91	1
Fish	51	326	47	76	250
<b>Total</b>	<b>1,622</b>	<b>3,022</b>	<b>1,838</b>	<b>1,244</b>	<b>1,649</b>

\* Excluding stray snakes received from the HKSAR Police.



One of two Brown Wood Owl chicks discovered having left their nest in woodland at KFBG. A first breeding record of this rare species for our hillside.

In May we found the first evidence of brown wood owls inhabiting our forest. The first breeding record of the species in our woodland was also made when a young owl was seen. In order to minimise disturbance to the owls the road near the site was closed off to vehicular and foot traffic for a few weeks. The discovery of the brown wood owl nesting in KFBG woodland is a sign of the maturity of the forest and testament to the protection of the hillside for many decades. There are believed to be less than ten pairs of this species in Hong Kong.



Big-headed Turtles rescued.

The final captive group of rescued Madagascan ploughshare tortoises (the world's rarest tortoise) was rehomed to a conservation project in California (The Turtle Conservancy) in January. The ten critically endangered tortoises have entered a breeding project.

In mid-March, the Fauna Team were called upon to assist in the rescue of wildlife, resident within reservoir number 3 (Magnolia Falls) in the upper stream. Routine maintenance required draining and de-silting of the reservoir. At least two species known to inhabit the reservoir are of conservation significance and are locally protected, one of which, the **Big Headed Turtle**, is both locally and globally protected by an IUCN (International Union for the Conservation of Nature) critically endangered rating.



Three bags of frogs and a bag of turtles for mercy release were found near the Lam Tsuen River opposite KFBG.

'**Mercy Release**' activities, involving exotic animals (often purchased from pet and food markets) being released into the wild by well-meaning but seriously misguided members of the public, continue to present problems, especially since the stream opposite KFBG has become a regular release site for them. KFBG has been in dialogue with the authorities and clearly this practice, which is still legal but causes a lot of animal suffering and possible negative impact upon the stream ecology, will not easily be resolved. KFBG staff are working with AFCD to develop more educational materials and determine other ways to discourage this practice. Ultimately legislation and enforcement must be brought in to stop this practice.

Kadoorie Conservation China had its most successful year for Yunnan Box Turtle rearing, in collaboration with the Kunming Institute of Zoology. A total of eleven Critically Endangered Yunnan Box Turtles (*Cuora yunnanensis*) were hatched and survived in a secure breeding facility in Kunming, Yunnan this year.

2015 was also a very good year for the Golden Coin Turtle breeding project at KFBG. A record high of 25 Golden Coin Turtle hatchlings were produced this year with a 100% survival rate. The project's managers decided early in the year to minimise disturbance to the eggs while in incubation and this, with a new enriched dietary regime, seems likely to have contributed to the positive outcome.





The overview of the site after the tree planting.



The coconut mats and jute mats were applied to prevent growth of weeds.

## Reforestation

As part of our long-running experimental project to reforest the upper slopes of KFBG's land with native trees, some 193 KFBG staff participated in a team tree-planting activity on **Earth Day**, 22<sup>nd</sup> April. A total of 1,280 seedlings from 20 species were planted in four experimental plots at the Tai Mo Shan tree-planting site. In July, a contractor planted an additional 640 seedlings from 37 species in two additional plots. We also tested the effect of different weeding mats and grass-cutting upon the survival and growth rates of 20 native tree species.

The survival and growth rates of trees planted in 2013 were measured. It was found that 90% of the seedlings survived and that the height of saplings protected by a tree guard was more than double the height of trees without protection. We assume that wind desiccation, grazing by animals and strong sunshine are responsible for the retarded growth of the unprotected saplings. The results are currently being prepared for scientific publication and clearly show that it's better to plant fewer seedlings and put more effort into protecting each one.

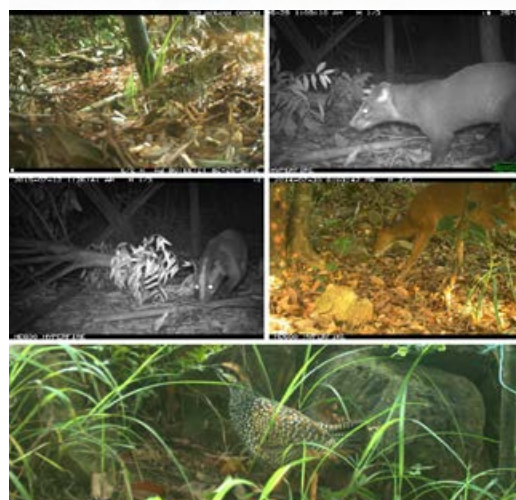
A collaborative analysis between KFBG and the HK Polytechnic University regarding a series of aerial photographs and satellite images taken between 1945 and 2014 revealed that in the wake of World War II less than 1% of the surface area of Tai Mo Shan was covered with forest. In 1945 two patches of Shing Mun fung shui woods were the only fragments of closed-canopy forest, and even the remotest ravines had no closed canopy. The photo series shows that forest recovery after the war started gradually, first in ravines and then slowly enveloped the slopes.

Consequently, most of the forest cover on Tai Mo Shan is still very young. These results are important for conservation and explain why Hong Kong's biodiversity is concentrated in ravines, which must have acted as 'refuge' areas during times of complete forest loss due to fire. The findings have been published in a scientific journal.

Our partner Dr. Billy Hau from Hong Kong University completed his survey of Tai Po Kau's 20 hectare forest plot and submitted the data compilation to us for further analysis. The forest in Tai Po Kau is around 70 years old and developed naturally after World War II. Preliminary results revealed that more than 170 different woody species can be found within the plot, primarily comprising pioneer species with relatively few later successional species. The data clearly shows that natural succession is a slow process and that 70 years is not long enough for later successional species to colonise a newly-established forest.



Staff were planting along the main road.



Native wildlife caught by our camera traps located at the experimental plots on Tai Mo Shan.

More than 50 surveys were conducted in Hong Kong's **Feng Shui Woods** in 2015, where it was also observed that many rare late-successional species are restricted to small fragments of the forest and have not spread into the newly developing secondary forests. Previous publications by scholars suggested that such species may be 'dispersal limited' - possibly because of the extinction of large birds and mammals in Hong Kong that previously helped disperse the seeds of certain tree species. These results are very important for the planning of our restoration and forest enhancement work at KFBG and in Hong Kong since we cannot surmise that certain species will necessarily colonise our evolving woodlands by natural means. Active planting will be necessary to increase the abundance of such rare species.

## Influencing Policy

KFBG's Ecological Advisory Programme team (EAP) continued to monitor and challenge inappropriate development, that can have a devastating impact on the natural environment and its wildlife. EAP submitted papers with updated ecological information, collected on-site by KFBG's experts and gleaned from literature reviews, to the Planning Department and the Agriculture Fisheries and Conservation Department (AFCD) to highlight the ecological and conservation importance of the Country Park Enclaves. This information was also shared with other environmental NGOs. Our team welcomed the authorities' plans to restrict Village Type Developments (V) in most of the enclaves to within the existing village settlement boundaries. This will greatly reduce the negative ecological impact.

After several years' lobbying alongside other environmental NGOs, we have been successful in convincing the Planning Department to provide the ecologically important areas in Tung Chung valley with 'Conservation Area' zonings, and not to develop the highly sensitive Tung Chung Bay area.

The Fauna Conservation Department, as one of the members of the Government's Animal Welfare Advisory Group, is pleased to report that a code of practice (COP) related to husbandry and care of reptiles in the pet trade is being developed. This will put pressure on traders and importers to follow improved standards of care and welfare for the reptiles, also taking guidance for international best practice.

The Fauna Conservation Department, along with other NGOs, submitted a position paper to the authorities in December urging government departments to recognise Hong Kong's role as a trade hub for trafficking of wildlife, both legal and illegal, and to step up measures to tackle the **illegal trade**. These would include the provision of more resources for enforcement teams to pursue and convict the criminal leaders behind wildlife crime. A Wildlife Trade Working Group has been established, and our staff will work in tandem with other NGOs and academics to highlight these issues in future.

Several KFBG departments and the EAP team were heavily involved through focus groups in drafting reports for the Hong Kong Biodiversity Strategy and Action Plan (BSAP) process. The Convention on Biodiversity (CBD) was extended to Hong Kong in 2011, and an important immediate action is for the Hong Kong Government to develop a BSAP. This work will result in a 5-year plan focusing on biodiversity protection and the sustainable use of natural resources, both in Hong Kong and globally.

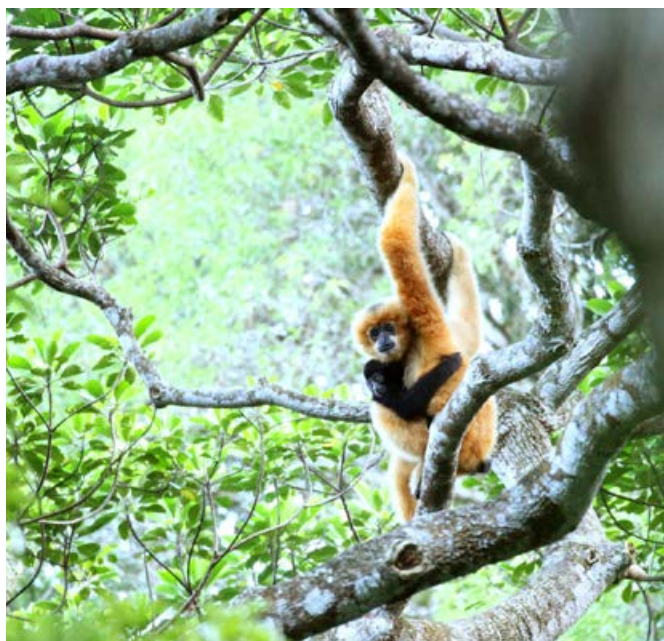
EAP conducted fish surveys in Mai Po and Pak Nai in order to contribute to an updated fish species list for these areas. This enhanced the knowledge of fish distribution patterns as a contribution to the 'red listing' of local fishes.

The Flora Conservation Department (FLO) submitted a proposal to the Hong Kong Census and Statistics Department in May for the addition of customs Harmonized System (HS) codes to monitor the trade of medicinal orchids (genera *Denbrobium* and *Gastrodia*), medicinal tree (*Eucommia ulmoides*), and timber rosewood (*Dalbergia spp.*). This is part of a larger initiative by FLO to improve the Harmonised System globally. A high profile article was published in the journal *Science* arguing the need to add digits to the current code system to enable better distinction of traded species.



The infographic showing Hong Kong's role as a trade hub for trafficking of wildlife and what actions the authorities should take.





A female Hainan Gibbon and her infant from the newly-formed Group D photographed during the comprehensive gibbon census organised by KCC and Bawangling National Nature Reserve in October.

## Engaging Communities in Conservation

The Kadoorie Conservation China Department (KCC) and Hainan Bawangling National Nature Reserve (BWL) organised a tree planting event in September in the Qingsong area of the gibbon habitat. Villagers, representatives from local government, BWL and KCC planted over 1,200 saplings of five native tree species, whose fruit will be eaten by the gibbons, in an area occupying approximately 6,400 square metres of hillsides previously damaged by typhoons.

At the end of September KCC led the community gibbon monitoring team to collect data, for the first time, on the sleeping patterns of **Hainan Gibbons**. The department then worked with BWL to organise a comprehensive gibbon census at the end of October. A total of 59 people spent five days in the forest and four groups totalling at least 25 gibbons were located. It is the first time that four groups of Hainan Gibbons had been recorded in a single survey.

In December, three volunteer certified arborists from Hong Kong constructed canopy bridges, re-connecting a forest gap used regularly by a gibbon group which had been damaged by a landslide.



A tree planting event in September by KCC together with Bawangling National Nature Reserve.



One of the nine basecamps set up during the annual comprehensive gibbon census organised by KCC and Bawangling National Nature Reserve in October.

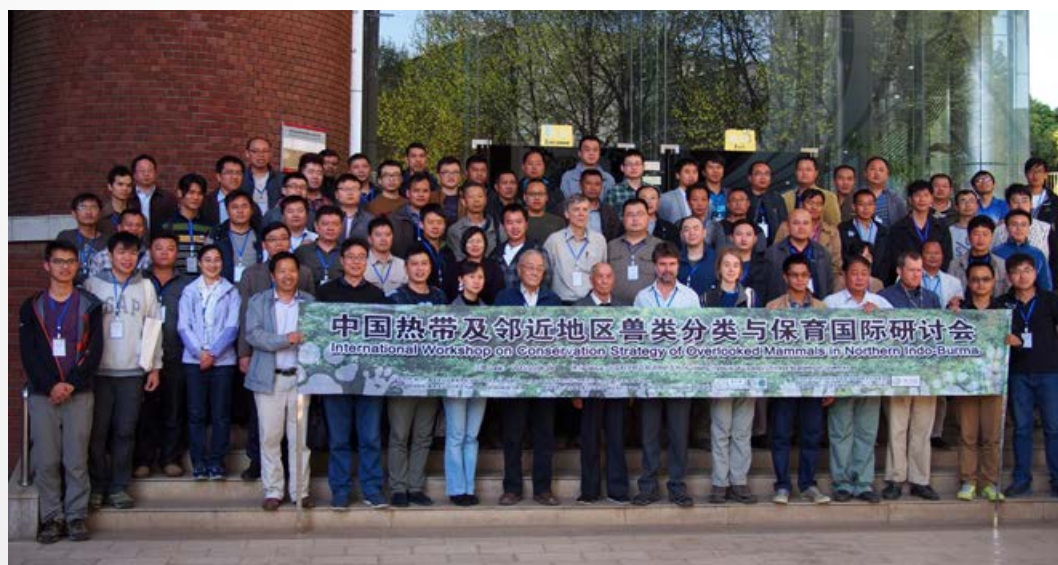


In March, we were delighted to win the Gold Award for Outstanding Exhibit for our display at the 2015 Hong Kong Flower Show. Titled **Cultivating Compassion for Nature**, the display reminded visitors that conscientious growers should only buy sustainably-propagated orchids, and not specimens that had grown and had been taken (often illegally) from the wild. Our team provided tips on how to distinguish the source of plants.

In March, KCC and the Kunming Institute of Zoology, CAS co-organised the *International Workshop on Conservation Strategy of Overlooked Mammals in Northern Indo-Burma in Kunming, Yunnan*. The workshop was supported by the IUCN Species Survival Commission and brought together a total of 76 participants, including international experts, researchers, reserve staff and NGO representatives from tropical China, Myanmar, Laos and the UK to share their expertise and experience.



The arrangement of trees, shrubs, potted and orchids were well presented in a multi-faceted display at the Hong Kong Flower Show 2015.



KCC co-organised a workshop on "Conservation Strategy of Overlooked Mammals in Northern Indo-Burma" with the Kunming Institute of Zoology.

In collaboration with the Hainan Provincial Forestry Department and other environmental NGOs, the **Rainforest Ambassadors** of KCC co-organised the *World Wetland Day* event in Hainan on 1<sup>st</sup> February. More than 1,000 citizens participated in the event, which was widely reported by the local media. The event also enhanced the working relationships of KCC with other parties.

KCC co-organised the 3<sup>rd</sup> Dongzhaigang Birdwatching Festival in Haikou, Hainan in November. The event, the theme of which was *Wetlands, Mangroves and Birds*, attracted the participation of 120 people in the bird race and over 3,000 members of the public attended the event.



Children visiting the games and displays during the 3<sup>rd</sup> Dongzhaigang Birdwatching Festival in Haikou in November co-organised by KCC.



## Building Conservation Capacity

At the end of March, KCC representatives attended the **Asia Pacific Chapter Meeting of Association for Tropical Biology and Conservation** (ATBC) held in Phnom Penh, Cambodia to deliver presentations about KFBG's work. Head of Kadoorie Conservation China, Dr. Bosco Chan, who is ATBC's China Representative, participated in drafting the ATBC Declaration on enhanced planning for the conservation of critical wildlife habitats in Eastern Cambodia, and was re-elected as the China representative of the ATBC.

The Fauna Conservation Department (FAU) was asked to conduct a lecture on bat ecology and to develop a night walk activity in the Asia Society Hong Kong Centre, Admiralty. Around 40 society members joined these events.

Flora Conservation Department (FLO) staff visited the Biotechnology and Ecology Institute in Laos on two occasions, in July and November, to nurture our collaboration with our Government partners for improved capacity for plant conservation. Laos lies at the heart of the **Indo-Burma Biodiversity Hotspot** but remains poorly documented in terms of its botanical heritage. Laos under increasing pressure of commercial exploitation and land conversion. On the first trip, we held a two-day workshop to train local staff of the National Botanic Garden in Vientiane in horticultural practices, and oversaw the commencement of construction of a new orchid nursery, which was funded by KFBG. The nursery will be ready to house a new national orchid collection for ex-situ conservation in mid-2016. Field surveys of a number of sites in central and northern Laos revealed several orchid species not previously known to occur in the country.

In September, FAU's Paul Crow and Tamari Yu travelled to Beijing to deliver training lectures to staff of Chinese wildlife rescue centres under the purview of the China Wildlife Conservation Authority (CWCA) and Beijing Wildlife Rescue and Rehabilitation Centre (BWRRRC). Topics presented included *Wildlife Rescue and Rehabilitation – Global Approaches and Volunteer Management*. Representatives from 16 wildlife centres across China attended. In November, the department hosted a return visit for six staff from four mainland China wildlife centres. Four days were spent observing animal care encompassing acceptance of animals, animal intake, rehabilitation, husbandry, handling, identification and release.



Mak Chi Fung giving a presentation on KCC's work of Hainan Gibbon during the ATBC meeting in Cambodia, 31<sup>st</sup> March.



Participants being instructed in the use of bat detectors to search for bats during the night walk activity organised for the Asia Society at the Hong Kong Centre, Admiralty.



We held a two-day workshop entitled Orchid Living Collections Management to raise capacity of staff who work Biotechnology and Ecology Institute of the Ministry of Science and Technology, Vientiane, Laos.

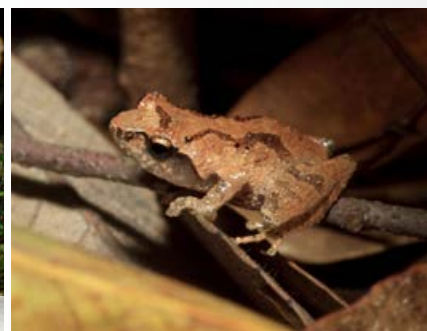




KCC recently described a new-to-science cave gecko, *Goniurosaurus kadoorieorum*, in honour of the Kadoorie brothers, Sir Horace and Lord Lawrence.



*Goniurosaurus kwangsiensis* is another new to science cave gecko recently described by the KCC team.



*Liuxalus feii*, a new tree frog species recently described by Yang Jianhuan of KCC and collaborators. It is one of the smallest amphibians in China.

## Research for Conservation

The KFBG Conservation Genetics Laboratory is employing DNA forensics to help tackle the illegal wildlife trade, which is causing a biodiversity crisis. In 2015, we developed a DNA method to estimate genetic variation of pangolin scales confiscated by the Hong Kong Government and to identify the scales to species. The techniques confirmed that the majority of the confiscated scales belonged to the Sunda Pangolin (*Manis javanica*) widely poached in South East Asia and, sadly, included unidentified scales perhaps belonging to an isolated group of pangolins. A report on the potentially new species, or distinct variety of pangolin, was published in a scientific article. The methods developed can be used by authorities to investigate other confiscations and to monitor the illegal wildlife trade.

Two 'new-to-science' cave gecko species were described in June by Yang Jianhuan and Bosco Chan of KCC. One of the new species was given the common name **Kadoorie's Cave Gecko** in honour of the Kadoorie brothers, Sir Horace and Lord Lawrence, for their support of biodiversity research and conservation in southern China. KCC's Yang Jianhuan co-authored a paper to describe two 'new-to-science' frog species from southern China. Both species were first discovered and documented during KCC's rapid biodiversity assessments. One of them - *Liuxalus feii* - is one of the smallest amphibians in China.

In November, KCC conducted a Participatory Rural Appraisal (PRA) in villages around the hornbill habitat of Yingjiang County, Yunnan. The results of the PRA were presented in the hornbill conservation workshop in December.

In December, KCC and the government of Yingjiang County, Yunnan co-organised the 2<sup>nd</sup> International Workshop on Conservation of Hornbills in China. More than 60 delegates, including renowned hornbill experts Professor Pilai Poonswad and Dr. Vijak Chimchome of Thailand and Dr. Aparajita Datta of India, joined. We presented KCC's hornbill work in Guangxi, and led the discussion about drafting a conservation action plan for saving China's hornbills.

Scientific publications of KFBG staff and partners for 2015 are listed in Appendix 2. Our services were also sought for conducting peer reviews of papers submitted to many scientific journals, including *Journal of Plant Ecology*, *Cambodian Journal of Natural History*, *Zootaxa*, *Small Carnivore Conservation*, *Chelonian Conservation and Biology*, *Avian Research*, *BirdingASIA*, *Systematic Botany*, *Science*, *Journal of Biogeography*, *Scientific reports*, *Technical Report*, *Global Ecology and Conservation*, *Biochemical Systematics and Ecology*, *Primates in Peril: The World's 25 Most Endangered Primates*.



Raising Romer's Tree Frog tadpoles in captivity.



Forests along the Myanmar border in Yingjiang, Yunnan, important hornbill habitat is threatened by expansion of black pepper plantations.



The 2<sup>nd</sup> International Workshop on Conservation of Hornbills in China was attended by more than 60 delegates from China and overseas.



# Holistic Estate Management and Minimal Eco-Footprint



**D**uring 2015, we adopted significant new measures to safeguard our vulnerable incense trees; trialled new bedding to improve the wellbeing of our piglets; and installed a custom-built biochar machine specifically designed to recycle felled timber - the biochar will help to enrich depleted soil on slopes and terraces and locks carbon into the soil.



## Managing KFBG's Themed Gardens and Natural Forests

Our long-term project to restore native forests continued this year. Created in 2014, KFBG's zoning map provides the basis for decisions on changes in land use. More than 2,000 native trees and shrubs have been planted in the existing forest and gardens to improve the ecological integrity. A mixture of native and ornamental plant species set in roadside planters provides both aesthetic improvement as well as shelter for wildlife.

In themed gardens such as the Walter Kerr Garden, Fern Walk and Ilex Garden, we have planted native trees, which enhance the canopy, provide blossom for visitors to enjoy, and food for wildlife. Seeds of very rare native species, including fruit trees, are collected from our **Seed Garden** and germinated for later planting in our ecological restoration programmes.

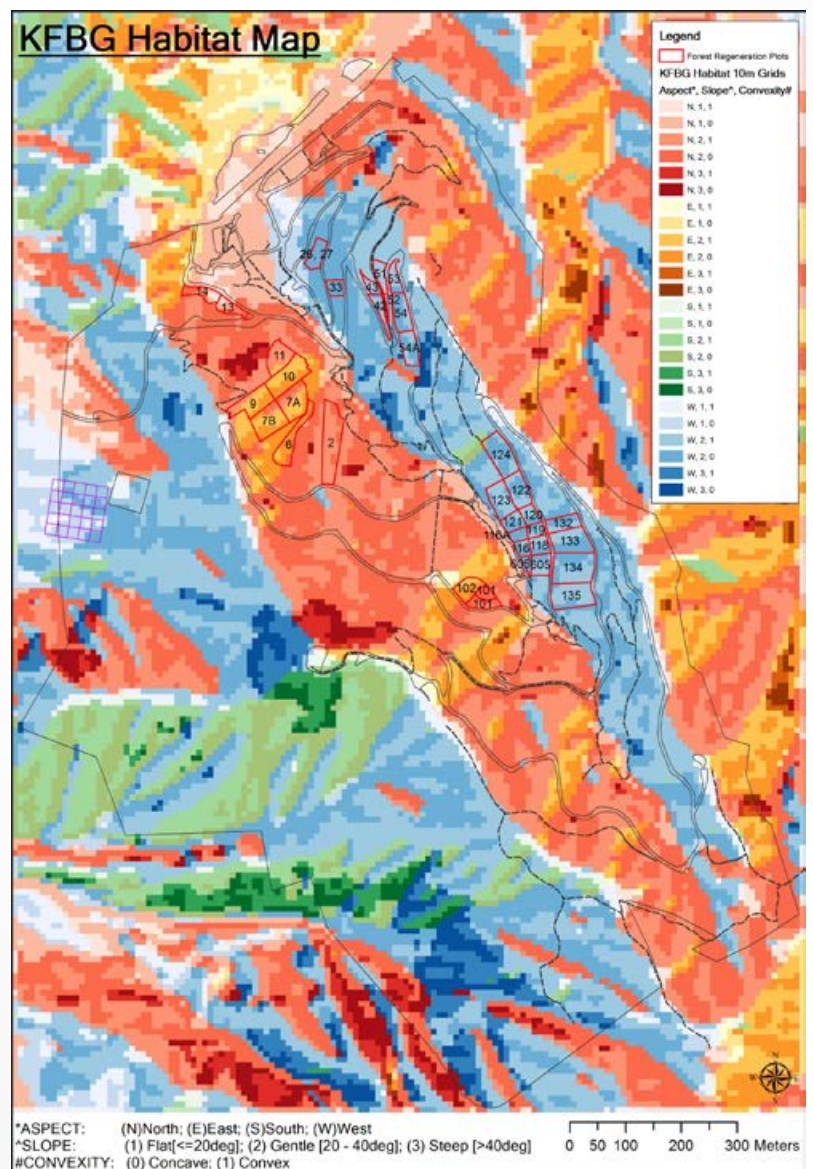
KFBG's natural secondary forest, which has evolved from the early 1950s, is a mixture of planted and early successional pioneer species. Canopy diversity is poor and we have embarked upon trials with seeds and small and larger saplings (up to one metre in height) to find the best way to enhance tree diversity.

It has been proven that a diverse mix of species makes the forest more resilient to climate change, stabilises the slopes, stores water more efficiently and provides more habitat and food for wildlife.

Some wild Macaques have become fond of agricultural products and the food they can steal from our staff and visitors. The forest can actually support the Macaques year-round and we have implemented a wide range of measures to stop the animals bothering humans.



Native seedlings were planted in new planters outside the Owl Sanctuary as part of the living plant collection.



A habitat map of KFBG in 10x10m resolution was created based on aspect, slope and convexity.



## Animal and Visitor-Friendly Estate

The work at KFBG requires constant vigilance. In 2014, our **incense trees** (*Aquilaria sinensis*) came under attack by poachers. Consequently, we installed wire mesh fencing to protect them. In 2015, we reinforced the protection measures by erecting warning signs and hi-tech monitoring equipment in the forest and increasing the daily patrols of the protected area. So far the poachers have not returned.

The **Tree Management Team** spent a full three days removing the problematic Chinese hackberry (*Celtis sinensis*), a large invasive tree which had grown up close to the Art House. Many other trees were pruned or felled as necessary for safety reasons.

Our Da Hua Ba pigs have become irritated by sand. To overcome this, we installed foot-friendly soft deep litter bedding in the Piggery this year.



A tree worker removing a hazardous *Acacia Confusa* next to Wild Animal Rescue Center.



Feet-friendly deep litter bedding in the Piggery.

## Reducing Waste, Saving Energy

Burning organic matter, such as felled timber, in the absence of oxygen at 500 degrees Celsius produces a special kind of charcoal called **biochar**. When mixed with compost, to load the millions of microscopic holes in the charcoal with micro-organisms, we create a sustainable and extremely effective fertiliser that can be used to greatly improve degraded soils for organic farming, gardens, and reforestation.

Biochar's large surface area binds water and nutrients, releasing them slowly over time. This improves the soil structure and provides niches for fungi and microorganisms to grow. Moreover, biochar offers a means of carbon sequestration as the process prevents the organic material from releasing carbon into the atmosphere. This is a promising development in mitigating against climate change because it takes the carbon that trees and other plants have taken out of the atmosphere and locks into the soil, where it will stay forever.



The hot biochar cooling down in the dunk tank.



**Our new state-of-the-art biochar machine and wood drier.**



**About a tonne of biochar is produced in one cycle.**

In July, our biochar production took a huge step forward when we upgraded our biochar programme by installing a new state-of-the-art model. Custom-built in Australia, it is the size of a shipping container, can handle up to ten tonnes of wood per eight-hour operation and has almost zero emissions. We continue to fine-tune the operation of the machine.

One of our goals is to minimise energy consumption on the KFBG estate. In 2015, the Mule Team helped to achieve that goal by shifting 11,088 kg of compost and visitor rubbish over an estimated 297 km. The mules also carried the planting materials and seedlings up to the tree planting site for the Earth Day event. They are a good alternative to driving trucks.

## Herbarium Upgrade

In March we completed the renovation of KFBG's herbarium, which will eventually house more than 50,000 plant specimens. Currently, we have around 15,000 specimens, some of which date back several decades.

All specimens have now been arranged in cabinets according to the latest taxonomic understanding of plant family relationships.

Our collections are important records of Hong Kong's, and particularly KFBG's, naturally-occurring flora. These records are essential if we are to reintroduce species and restore the ecological integrity and diversity of the region. Otherwise, climate change, human disturbance and natural disasters may cause plants to disappear without trace.

## New Office Building and Lower Area Upgrade

We have started the process of developing a new office building to replace our aging building. We are also planning to change the use of some buildings in the Lower Area and adjust some of the paths to improve the visitor experience in the coming years.



**All of the herbarium specimens have been moved into the newly renovated herbarium on 4 March 2015.**



# An Evolving Organisation

**K**FBG reached a milestone in 2015: the celebration of 20 years since the establishment of the Kadoorie Farm and Botanic Garden Corporation (KFBGC).





## Celebrating Two Decades at KFBGC

On 20<sup>th</sup> January 1995, the Legislative Council passed an Ordinance that established the Kadoorie Farm and Botanic Garden Corporation (Under Cap 1156). This effectively created a new organisation with a new mission that lead to a range of new programmes. Whilst the spirit of Sir Horace and Lord Lawrence Kadoorie were retained, the programmes changed completely in 1995. On 20<sup>th</sup> January 2015, the day of **KFBGC's 20<sup>th</sup> anniversary**, all staff assembled for a day of activities to celebrate the organisation's progress. Each department had created a timeline showing its major developments and achievements, and how it had evolved over the past 20 years. These are now on display in the Museum and on our website.



A group photo taken on 20<sup>th</sup> January to celebrate the 20<sup>th</sup> anniversary of the establishment of KFBGC.



Staff gathered at the Plaza to view the timelines made by each department.



Staff trying hard to match the animal footprints with correct habitats in China – an activity organised by KCC on 20<sup>th</sup> January.





Delicious potluck lunch at July's 'From Farm to Fork' volunteer gathering and celebration.

KFBG has a large and dynamic workforce of around 240 people. Over the course of 2015 we recruited forty-two new members of staff, while thirty-seven staff left the organisation.

A total of 50 trainees were selected from more than 300 applicants to join The **Nature Education Volunteer Training Course**. The course included an overview of the KFBG education programme, followed by training in leading guided tours, organic farming, mindfulness practice, experiential learning activities, art workshops, and night walk activities. Forty-six candidates completed the course passed the exam and are now working as volunteers with KFBG.



Fauna conversation volunteers training as guides for our Animal Encounters programme.

In addition, 33 volunteer recruits were trained as Fauna Outreach Volunteers in June and July. Of this number, 23 recruits passed the training. They were recruited from various Hong Kong tertiary education institutions via their departmental professors, faculty members or student unions. These volunteers provide invaluable help with Animal Encounters and Discovery Tables activities. We are grateful to them and all our other volunteers who help us deliver our programmes throughout the year.

To help everyone to be as effective as possible, new and existing members of staff were offered a range of internal and external training sessions, refresher courses, talks and workshops.

For example, three KCC staff attended a half-day camera-trap database workshop, held prior to the ATBC (Association for Tropical Biology and Conservation) Asia Pacific Chapter meeting in March. The training has equipped us to improve how we organise and analyse large amounts of camera-trap data. In September, a special one-day teambuilding programme was held for all officers and Department Heads. It took place at the Sai Kung Jockey Club Outdoor Training Camp and was led by experiential learning expert Professor Colin Beard from the UK.



KCC members attending the Camera-trap database workshop conducted by Dr Jim Anderson (first on the left) prior to the ATBC meeting in Cambodia, 30<sup>th</sup> March.

In October and November we provided three internal training lectures to fauna keepers. Topics included reptile and amphibian husbandry, aquarium and fish care, and general animal handling and restraint techniques.



The winner of Men's Section was Mr. Yuen Wan Ho.

The **21<sup>st</sup> Kadoorie Brothers Memorial Race** was held on 20<sup>th</sup> December, organised this year by the Flora Conservation Department. We received over 230 applications and eight of our staff joined the race from our Administration Offices in the Lower Area to the Kadoorie Brothers Memorial Pavilion. The women's champion completed the race in 39'22", while the men's champion's time was 29'14".



The winner of Women's Section was Miss Tse Suk Fun.



## Governance

We periodically review and update our internal policies to ensure compliance and best practice with relevant regulations.

The financial year-end audit for 2014/2015 was conducted in August 2015.

We thank our numerous partners for their ongoing collaboration.

We thank the KFBG Board for their continued selfless support and wise advice.

We thank the Trustees of the New Kadoorie Foundation for their support of the work of KFBG.

We also thank our public donors for their contributions to our work.

And we thank the public for their interest in connecting to the nature and learning.

## Number of Visitors to HFBG over the Past Five Years:

	2011	2012	2013	2014	2015
School groups	48,430	47,385	49,212	44,611	35,749
Commercial groups	22,283	13,032	9,834	10,347	7,616
NGO groups	19,373	19,154	18,809	16,748	8,868
Individuals	66,281	76,070	79,752	94,964	107,786
Total	156,367	155,641	157,607	166,670	160,019

## Financial Figures (excluding depreciation):

Expenditure (HK\$)	*Year ended 31.3.15 (audited)	**Year ended 31.3.16 (unaudited)
Capital	32,252,246***	21,081,000
Operating	78,921,151	86,908,000
Total	111,173,397	107,989,000

Income (HK\$)	Year ended 31.3.15 (audited)	Year ended 31.3.16 (unaudited)
New Kadoorie Foundation	89,000,000	109,500,000
Shop Sales	2,221,538	1,861,700
Government and other funding (see breakdowns below)	28,719,231	4,743,392
Entrance fees	2,653,950	2,554,455
Workshop fees	1,198,522	1,962,081
Public donations (see breakdown 3)	54,231	66,223

\* From Audited Accounts (expenditure includes commitments accrued and not yet settled).

\*\* From Management Accounts (expenditure includes commitments accrued and not yet settled).

\*\*\* Expenditure includes the commitments of previous years which are settled during the year.

## Breakdown 1. Government Funding

Government Funding	Year ended 31.3.15	Utilised by KFBG to provide:	Year ended 31.3.16	Utilised by KFBG to provide:
Development Bureau (Green Hub)	28,056,642	Revitalising Old Tai Po Police Station.	4,743,393	Revitalising Old Tai Po Police Station.
Macau Government	228,000	Community Garden Consultation, Bat Book and Natural Education projects in Macau.	Nil	N/A
<b>Total</b>	<b>28,284,642</b>		<b>4,743,393</b>	

## Breakdown 2. Other Funding

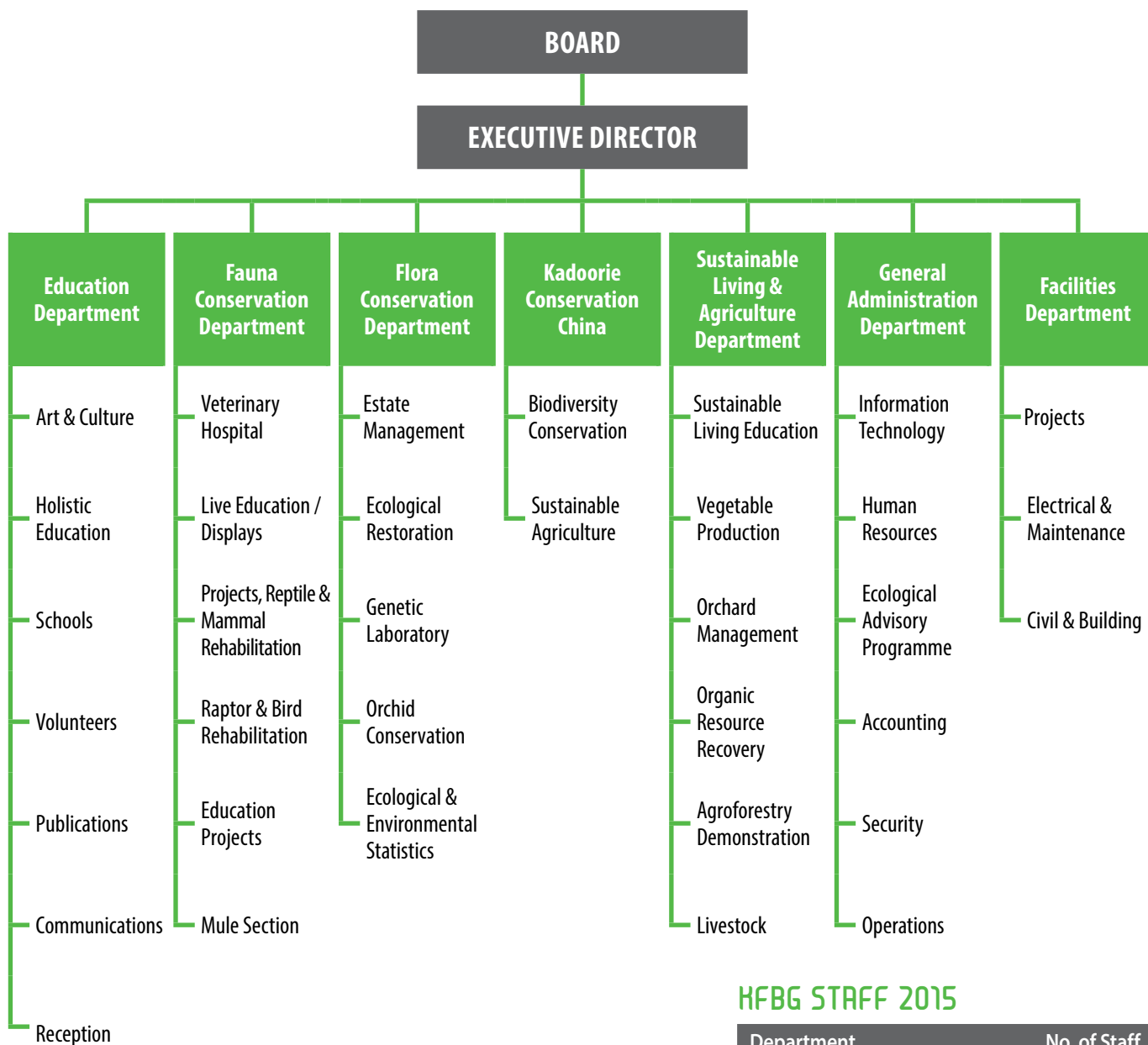
Other Funding	Year ended 31.3.15	Utilised by KFBG to provide:	Year ended 31.3.16	Utilised by KFBG to provide:
Bank of China Charitable Trust	215,000	Annual Mainland China national youth education project.	125,000	Annual Mainland China national youth education project.
Critical Ecosystems Partnership Fund	196,189	In-country administration of small grants for conservation projects.	Nil	N/A
Andrew Sabin Family Foundation	23,400	Camera traps to carry out a security role on our stream at KFBG.	Nil	N/A
<b>Total</b>	<b>434,589</b>		<b>125,000</b>	

## Breakdown 3. Public Donations to our General Conservation Fund and Usage

General Conservation Fund	Year ended 31.3.15 (audited)	General Conservation Fund	Year ended 31.3.16 (unaudited)
Opening Balance B/F:	113,447	Opening Balance B/F:	88,678
Utilised funds: - Sponsorship for Project: Facilitating reproduction for the last pair of captive refetus in China and searching for wild specimen in Yunnan Province 2014	(79,000)	Utilised funds: - Utilised in Golden Coin Turtle project - Utilised in restoration and canopy bridge at Bawangling, Hainan - Utilised in tree planting event	(33,513) (21,899) (30,000)
Public donations	54,231	Public donations	66,223
Closing Balance C/F:	88,678	Closing Balance C/F:	69,489



# HFBG Organisation



## HFBG STAFF 2015

Department	No. of Staff
Executive Director's Office	2
Education	14
Fauna Conservation	28.5
Flora Conservation	60
Sustainable Living & Agriculture	54
General Administration	28.5
Facilities	20
Kadoorie Conservation China	8
<b>Total Number of Staff</b>	<b>215*</b>

Note: \*As at 31<sup>st</sup> December, 2015.

# Members of the Board

## of the Kadoorie Farm and Botanic Garden Corporation

**Andrew McAulay** (*Chairperson*)

**Dr Lawrence Lee**

**Deborah McAulay**

**Ruy Barretto, S.C.**

**Daniel R. Bradshaw**

**Andrew Brandler**

# Senior Management

## of the Kadoorie Farm and Botanic Garden Corporation

### **Executive Director**

**Andy Brown**

### **Heads of Department**

General Administration Department

**Florence Au**

Fauna Conservation Department

**Dr Gary Ades**

Kadoorie Conservation China

**Dr Bosco Chan**

Education Department

**Joshua Chan**

Flora Conservation Department

**Dr Gunter Fischer**

Facilities Department

**Denis Ng**

Sustainable Living & Agriculture Department

**Idy Wong**



# Appendix 1

The following table lists HFBC activities through 2015 aimed at building capacity in community organisations and partnerships for sustainable living.

Partner Organisation	Date	Programme Title/Details	Location
Chinese Ministry of Environmental Protection's (MEP) Centre for Environmental Education and Communication	16 <sup>th</sup> July	"1000 Environmental Friendly Youth Ambassadors Action" cum "Low Carbon Recipe Design Competition" Award Ceremony 2015	Ma On Shan Plaza
Bank of China (BoC) Charitable Foundation	March to July	Champion of Change	KFBG
A delegation of 26 local and mainland Youth Ambassadors and Centre for Ecology, Evolution and Conservation (CEEC) officials	14 <sup>th</sup> to 16 <sup>th</sup> July	A two-day training camp	KFBG & Green Hub
Philippine Permaculture Association and Cabiokid Foundation, Philippines-based permaculture organisations	21 <sup>st</sup> to 23 <sup>rd</sup> November	The 2 <sup>nd</sup> South East Asian Bioregional Permaculture Convergence	Iligan, Philippines
Hong Kong Architecture Centre (HKAC)	28 <sup>th</sup> November	<i>Architecture x Dining-together</i>	Green Hub
Hong Kong Architecture Centre (HKAC)	19 <sup>th</sup> December	<i>Heritage Walk</i>	Green Hub

# Appendix 2

Specialist scientific publications from HFBG staff and collaborators/project executants for 2015 are listed as follows: (HFBG staff in bold)

Title	Authors	Journal/Publication
A taxonomic note on <i>Erionota acroleuca</i> (Wood-Mason & de Nicéville, 1881) stat. rest. ( <i>Lepidoptera: HesperIIDae</i> )	Guo-Xi XUE & <b>Yik Fui Philip LO</b>	<i>Zootaxa</i> 3926 (3): 445–447
Habitat enhancement project for the Critically Endangered Hainan Gibbon and its implications for large-scale forest restoration in Indochina.	<b>Bosco P.L. Chan &amp; Mak Chi Fung</b>	
Saving Hainan Island's Yangshan landscape through citizen science.	<b>Lu Gang &amp; Bosco P.L. Chan</b>	
Current distribution, status and conservation challenges of the Asian Water Monitor <i>Varanus salvator</i> on Hainan Island.	<b>Jian-Huan Yang &amp; Bosco P.L. Chan</b>	Abstracts of 2015 Asia-Pacific Chapter Annual Meeting of ATBC, published in the Special Issue of the <i>Cambodian Journal of Natural History</i> (March 2015, Vol. 2015, No.1)
Conserving the Oriental Pied Hornbill <i>Anthraceros albirostris</i> in Guangxi, China.	<b>Yik Fui Philip Lo</b> , Lichu Nong, <b>Lu Gang</b> , <b>Li Fei &amp; Zhao Jiangbo</b>	
Protecting an unprotected area: a case study of conserving a tropical limestone forest on Hainan Island, China.	<b>Li Fei, Lo Yik Fui Philip &amp; Li Shining</b>	
To unlock the conservation deadlock? Use a blog.	<b>Anny Li</b>	
A recent record of Stripe-backed Weasel <i>Mustela strigidorsa</i> from Yunnan province, China	<b>Bosco Pui-Lok Chan, Jiang-Bo Zhao</b>	<i>Small Carnivore Conservation</i> 51: 74–75.
A new species of the genus <i>Gekko</i> Laurenti, 1768 (Squamata: Sauria: Gekkonidae) from Guangxi, China	<b>Jian-Huan Yang</b>	<i>Zootaxa</i> 3936 (2): 287–295.
Conservation Status of Freshwater Turtles in Hainan Island, China: Interviews and Field Surveys at Yinggeling Nature Reserve	<b>Jay P.H. Wan, Bosco P.L. Chan</b> , Changle Liao, Hongxu Mi, <b>Michael Lau</b> , <b>Fei Li</b> , Hesheng Wang, <b>Yik-Hei Sung</b>	<i>Chelonian Conservation and Biology</i> , 14(1): 100–103.
Two new species of the genus <i>Goniurosaurus</i> (Squamata: Sauria: Eublepharidae) from southern China	<b>Jian-Huan Yang, Bosco P.L. Chan</b>	<i>Zootaxa</i> , 3980 (1): 067–080



Title	Authors	Journal/Publication
Identification of coastal wetlands of international importance for waterbirds: a review of China Coastal Waterbird Surveys 2005- 2013	26 authors, including <b>Lu Gang</b>	<i>Avian Research</i> (2015) 6:12
New avifaunal records for Hainan Island, China 2003-2013	<b>Lu Gang, Li Fei, Lee Kwok Shing, Bosco P.L. Chan, Sung Yik Hei</b>	<i>BirdingASIA</i> 23 (2015): 122-123
A new species of the genus <i>Liuixalus</i> (Anura: Rhacophoridae) from southern China	<b>Jian-huan Yang</b> , Ding-qi Rao, Ying-yong Wang	<i>Zootaxa</i> , 3990 (2): 247-258
A new species of the genus <i>Odorrana</i> (Amphibia: Ranidae) and the first record of <i>Odorrana bacboensis</i> from China	Ying-Yong Wang, Michael W.N. Lau, <b>Jian-Huan Yang</b> , Guo-Ling Chen, Zu-Yao Liu, Hong Pang, Yang Liu	<i>Zootaxa</i> , 3999 (2): 235–254.
Population genetic structure in wild and hatchery populations of white cloud mountain minnow ( <i>Tanichthys albonubes</i> ): Recommendations for conservation	JZ Luo, HD Lin, F Yang, ZS Yi, <b>Bosco P.L. Chan</b> , J Zhao	<i>Biochemical Systematics and Ecology</i> , 62: 142–150
Hainan Gibbon <i>Nomascus hainanus</i> (Tomas, 1892)	<b>Bosco P.L. Chan</b>	<i>Primates in Peril: The World's 25 Most Endangered Primates 2014–2016</i> , pp. 67-69
Studies in Asian <i>Nervilia</i> (Orchidaceae) V: <i>Nervilia futago</i> , a Cryptic New Species from Southwest Japan Confirmed by Morphological, Cytological, and Molecular Analyses.	<b>Gale, S.W.</b> , Li, J., Kinoshita, A. & Yukawa, T.	<i>Systematic Botany</i> 40: 413–425.
Improve customs systems to monitor global wildlife trade.	Chan, H.K., Zhang, H., Yang, F. & <b>Fischer, G.</b>	<i>Science</i> , 348(6232), 291–292.
Phylogenetic structure and ecological and evolutionary determinants of species richness for angiosperm trees in forest communities in China.	Qian, H., Field, R., <b>Zhang, J.-L.</b> , Zhang, J. & Chen, S.	<i>Journal of Biogeography</i> , (on line preview, DOI: 10.1111/jbi.12639).
Closely-related taxa influence woody species discrimination via DNA barcoding: evidence from global forest dynamics plots.	Pei, N., Erickson, D.L., Chen, B., Ge, X., Mi, X., Swenson, N.G., <b>Zhang, J.-L.</b> , Jones, F.A., Huang, C.-L. & Ye, W.	<i>Scientific reports</i> , 5. 15127 (doi:10.1038/srep15127)
Live Animals in Illegal Trade: A review of selected holding and repatriation costs with enforcement outcomes for local confiscations (Nov 2015)	<b>Gary Ades, Paul Crow and Yorkie Wong</b>	<i>Technical Report No.12</i>
Molecular tracing of confiscated pangolin scales for conservation and illegal trade monitoring in Southeast Asia	Zhang, H., Miller, M.P., Yang, F., Chan, H. K., Gaubert, P., <b>Ades, G.</b> , & <b>Fischer, G. A.</b>	<i>Global Ecology and Conservation</i> , 4, 414–422





**Kadoorie Farm & Botanic Garden**

Lam Kam Road, Tai Po,  
New Territories, Hong Kong

**Tel:** (852) 2483 7200

**Fax:** (852) 2488 6702

**Email:** [info@kfbg.org](mailto:info@kfbg.org)

**Website:** [www.kfbg.org](http://www.kfbg.org)

