

Eco-greening

Introduction

Higher expectations on the ecological functions of greening -- both in afforestation and urban landscaping have arisen as a result of increased awareness of environmental protection and conservation in Hong Kong. Growing native plants not only beautifies the environment, but also provides suitable food and shelter to local wildlife.

Despite the short distance between the countryside and urban areas of Hong Kong, our highly urbanized living style has isolated humans and nature, and weakening our consciousness on environmental protection. If we integrate the theory of biodiversity into greening - applying the concept of "eco-greening", natural environments can be created in this concrete jungle. We may then have a refuge from the hustle and bustle of the city, and enjoy a closer relationship with nature.

Native Plant Resources in HK

The term native species can be defined as species that naturally occur in Hong Kong and adjacent areas in the same bio-geographical region (subtropical South China region). None of the original forest exists today except tiny remnants on some remote and steep ravines that may have escaped from a long history of human destruction. However, Hong Kong is still rich in native plant resources and there are

over 2100 vascular plant species, ranging from ferns to herbs, climbers, shrubs and trees. Many of them have a graceful appearance, glamorous flowers and attractive fruits. Plant species that can be used for greening are numerous. However, due to insufficient information of these plants, such rich resources have not been well utilized yet.

Why Plant Native Species?

Since exotic plants offer very little benefits to local wildlife, they have low ecological value. However, propagation techniques for exotic species are well developed and documented through years of utilization. They are thus widely used in afforestation worldwide. Native plant species are not only able to serve the same function as exotic species but may also offer food and shelter to local wildlife. Thus, they have higher ecological value.

However, several problems remain outstanding, which hinder the wider uses of native plant species in comparison with exotic ones. Firstly, only a handful of native plant species are well known and there is no large-scale commercial production of native plants in Hong Kong and South China, yet. This is partly attributed to a low market demand, which is a result of the general lack of knowledge on native plant species among landscape architects and a lack of successful showcases of using mainly native plant species. The knowledge and techniques in nursery propagation is insufficient to enable large-scale production of many native species.



Bird nest on Chinese Hackberry
(*Celtis tetrandra*)



Japanese Waxwing looking for food
on Chinese Holly (*Ilex rotunda*)

The KFBG Native Tree Nursery

Kadoorie Farm and Botanic Garden (KFBG), a local-based conservation charity, has **set up the Native Tree Nursery** and started to conduct research on native tree species with respect to seedling production and afforestation since 1997. Due to the shortage of land, urban development has been expanding into the countryside. Thus increasing the numbers of **greening** projects in urban fringe or countryside edge areas where planting native species are more preferable. However, exotic species are dominating as commercial supply of native plant materials is insufficient. As such, another aim of the KFBG Native Tree Nursery is to produce suitable native species to satisfy the needs of various sectors and develop techniques on native plant production.



KFBG Native Tree Nursery

We currently propagate around 100,000 seedlings of more than 150 native tree and shrub species in our Native Tree Nursery.

Further planting trials will be conducted as many native tree species as possible. The aim of this is to build a framework of easy to produce and propagate tree species that can even be planted on degraded land. These techniques will later be documented and available for those wishing to carry out afforestation projects.

In addition to research, we have also started to work with other organisations, including schools, NGOs and Government Departments, to plant more native tree species in Hong Kong since 1999. We have been monitoring native tree seedlings planted in the last three years to gather more information to assess their performance.

The KFBG Landscaping Section

Apart from afforestation, we are also exploring the use of native tree, shrub and herb species in urban and rural landscaping. Many native tree species such as Rhodoleia (*Rhodoleia championii*, 紅苞木), Wild Pear (*Pyrus calleryana*, 麻子梨), and Small Persimmon (*Diospyros vaccinioides*, 小果柿), are highly ornamental and useful to wildlife. After all, all cultivated plants originated from the wild.



Rhodoleia 紅苞木

In order to promote the use of native plants for landscaping purposes, we place our resources in selecting and propagating native plants with a high potential for gardening use. Starting in the year 2000, various native plant seeds and plant parts were collected and treated before propagation. So far, we have successfully propagated a number of native species including Chinese Lily (*Lilium brownii*, 淡紫百合), Hance's Ardisia (*Ardisia hanceana* 漢氏紫金牛), Hilo Holly (*Ardisia crenata* 大羅傘), Hance's Viburnum (*Viburnum hanceanum* 蝶花莢迷), Pavetta (*Pavetta hongkongensis*, 香港大沙葉), Heart-leaved Sida (*Sida cordifolia*, 心葉黃花捻), and *Strobilanthes cusia* (馬藍). We have also propagated other more commonly available native species such as Cape Jasmine (*Gardenia jasminoides* 梔子), Gordonia (*Gordonia axillaries*, 大頭茶), Hong Kong Hawthorn (*Rhaphiolepis indica* 車輪梅), Red Ixora (*Ixora chinensis* 龍船花), *Melastoma candidum* (野牡丹) *M. dodecandrum* (地蔞), *M. normale* (大野牡丹), and *M. sanguineum* (毛蔞). Gradually we plan to increase our scope of production of native species and maintain a stock of native ornamentals for future use.

Some of these newly propagated native plants have been placed in our gardens and we are monitoring their performances. Although it is too early to see whether native

plants can have a significant impact on the local “exotic plants dominant” market, we are optimistic that, through natural breeding to select good traits such as conspicuous flowers with long flowering period, they will be utilized as an alternative source for ornamental and gardening use in the future.



Pavetta 香港大沙葉



Strobilanthes cusia 馬藍

A Greener Way Forward

It is of no doubt that native **plant** species are attractive and beneficial to wildlife than the exotic ones. Afforestation and landscaping projects in suitable environments should give preference to native plant species for ecological enhancement. KFBG is dedicated to promote the planting of native species in the South China region and will be pleased to share our experiences and information with those involved in afforestation and landscaping in the region.

Kadoorie Farm and Botanic Garden
<http://www.kfbg.org>