

## 香港珍稀濒危植物的分布及保育

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**摘要** 在第一批共 388 种中国重点保护的珍稀濒危植物中, 有 14 种分布于香港特别行政区。其中蕨类植物 2 种, 裸子植物 2 种, 被子植物 10 种。此 14 种珍稀濒危植物, 除了狭叶瓶尔小草外, 亦分布于广东省。而其中被列为国家级渐危种类的土沉香及白桂木, 在香港则较为常见。本文阐述了此 14 种珍稀濒危植物在香港的分布情况及其保育工作。

**关键词** 珍稀濒危植物; 植物保育; 香港

中图分类号 Q948.5

## DISTRIBUTION AND CONSERVATION OF RARE AND ENDANGERED PLANTS IN HONG KONG

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**Abstract** Of the 388 rare and endangered plant taxa included in Volume one of the China Plant Red Data Book—Rare and Endangered Plants, 14 species have been recorded in Hong Kong Special Administrative Region. Of these, 2 are pteridophytes, 2 are gymnosperms and 10 are angiosperms. Most of these 14 species are also distributed in Guangdong Province with one exception namely *Ophioglossum thermale*. Two species, *Aquilaria sinensis* and *Artocarpus hypargyreus*, which are included in the China Plant Red Data Book and classified as vulnerable, are relatively common in Hong Kong. The distribution and conservation of these 14 nationally rare and endangered plant species in Hong Kong are described.

**Key words** Rare and endangered plant; Flora conservation; Hong Kong.

The Hong Kong Special Administrative Region of the People's Republic of China is situated on the south-east coast, adjacent to the Guangdong Province. The land area totals 1 095 km<sup>2</sup>. Although urban development in Hong Kong was very rapid in the past two decades, about half of the land, with green hillsides and wooded valleys, remains virtually untouched.

A total of 388 taxa of plants is described in volume one of the China Plant Red Data Book—Rare and Endangered Plants and this constitutes the first national list of rare and endangered plants of China<sup>[1]</sup>. Of the 388 taxa, 59 species have been recorded in the Guangdong Province<sup>[2]</sup>. Indeed, the flora of Hong Kong is to a certain extent very similar to that of Guangdong Province, and this paper provides information on the nationally rare and endangered plants which have been found in Hong Kong with emphasis on their local status and conservation efforts.

## 1 Nationally rare and endangered plants in Hong Kong

Of the 388 taxa in the first national list of rare and endangered plants, a total of 14 species from 12 families, 12 genera has been recorded in Hong Kong (Table 1). Their degree of threat and grade of protection from a national context as well as their distributions in Hong Kong are shown in Table 1. Amongst the 14 species, 2 are pteridophytes, 2 are gymnosperms and 10 are angiosperms. Most of these 14 species are also distributed in the Guangdong Province with the exception of *Ophioglossum thermale* which was recorded in 1905 in Wong Nai Chung Gap (Hong Kong Herbarium Number 10014) and has never been recorded again. Although the species may be locally extinct, the

Table 1 Nationally rare and endangered plants recorded in Hong Kong

No.	Species	Family	Degree of threat <sup>[1]</sup>	Grade of protection <sup>[2]</sup>	Distribution in Hong Kong
1	<i>Alsophila spinulosa</i> (Wall. ex Hook.) Tryon (= <i>Cyathea spinulosa</i> Wall.)	Cyatheaceae	Vulnerable	1	Lantau, Tai Mo Shan, Victoria Peak
2	<i>Ophioglossum thermale</i> Kom	Ophioglossaceae	Vulnerable	2	Wong Nai Chung Gap
3	<i>Keteleeria fortunei</i> (Murr.) Carr.	Pinaceae	Vulnerable	3	Stanley Peninsula, D'Aguilar Peninsula
4	<i>Amentotaxus argotaenia</i> (Hance) Pilger	Cephalotaxaceae /Taxaceae	Vulnerable	3	Lantau Peak, Ma On Shan, Mt. Parker, Sunset Peak, Tai Mo Shan, Tai Cham Koi
5	<i>Castanopsis concinna</i> (Champ. ex Benth.) A. DC.	Fagaceae	Endangered	3	Aberdeen, Deep Water Bay, Fo Tan, Sai Kung, Tai Mo Shan, Tai Wai, Wong Nai Chung
6	<i>Castanopsis kawakamii</i> Hayata (= <i>C. greenii</i> Chun)	Fagaceae	Vulnerable	3	Shatin, Wu Kau Tang
7	<i>Tetrathyrium subcordatum</i> Benth.	Hamamelidaceae	Rare	2	Jardine Lookout, Mt. Cameron, Sunset Peak
8	<i>Ixonanthes chinensis</i> Champ.	Ixonanthaceae/ Linaceae	Vulnerable	3	Aberdeen, D'Aguilar Peninsula, Ma On Shan, Repulse Bay, Tai Po, Wong Nai Chung Gap
9	<i>Tsoongiodendron odorum</i> Chun	Magnoliaceae	Rare	2	Tai Mo Shan
10	<i>Artocarpus hypargyreus</i> Hance ex Benth.	Moraceae	Vulnerable	3	Aberdeen, D'Aguilar Peninsula, Lantau, Pokfulam, Sai Kung, Tai Tam
11	<i>Camellia crapnelliana</i> Tutcher	Theaceae	Vulnerable	2	Ma On Shan, Mt. Parker
12	<i>Camellia granthamiana</i> Sealy	Theaceae	Endangered	2	Ma On Shan, Tai Mo Shan
13	<i>Aquilaria sinensis</i> (Lour.) Gilg	Aquillariaceae/ Thymelaeaceae	Vulnerable	3	Aberdeen, Lantau, Ma On Shan, Pokfulam, Sai Kung, Tai Mo Shan, Tai Tam
14	<i>Glehnia littoralis</i> F. Schmidt ex Miq.	Umbelliferae	Vulnerable	3	Sai Kung, Ping Chau

record is indeed the southern-most distribution of the species in China. However, whether the species naturally occurs in Hong Kong or it is in fact originated from cultivation is also debatable.

*Aquilaria sinensis* and *Artocarpus hypargyreus*, which are included in the China Red Data Book and classified as vulnerable, are relatively common in Hong Kong. Hence, protection of local populations of these species will contribute significantly towards their overall conservation in a national context. *Aquilaria sinensis* is distributed near the Tropic of Cancer, and Hong Kong lies within its normal distribution range. It is believed that this species was once widely planted in Hong Kong for balm collection. Indeed, during early plant exploration in Hong Kong, this species was recorded to be common in Happy Valley and elsewhere in Hong Kong<sup>[5,6]</sup>. Although deforestation in Hong Kong was severe during and after the Second World War and plantation of the species for balm has not been practised since, populations of the species in Hong Kong have recovered naturally and are rather widespread throughout the Region. Similarly, *Artocarpus hypargyreus* is rather widely distributed in secondary woodlands and is considered to be locally common in Hong Kong by Zhuang et al<sup>[7]</sup>. *Alsophila spinulosa*, *Castanopsis concinna* and *Ixonanthes chinensis* have also been recorded in a number of locations in Hong Kong as shown in Table 1 but are not as common as *Aquilaria sinensis* or *Artocarpus hypargyreus*.

Other nationally rare and endangered plant species appear in Hong Kong in small numbers with restricted distribution. *Amentotaxus argotaenia* is confined to the peaks of Hong Kong and the few recorded localities of the species are mostly above 500 m in altitude. However, one individual has also been recorded at an altitude of 380 m at Tai Cham Ko. *Castanopsis kawakamii* (as *C. greenii*) has only been recorded once at Shatin in 1927 for the last 70 years (Hong Kong Herbarium Number 26578) and new record has only been reported recently at Wu Kau Tang. One single individual of *Tsoongiodendron odorum* has recently been discovered in Hong Kong at Tai Mo Shan and it is indeed an important addition to the Hong Kong flora.

*Tetrathyrium subcordatum* had not been known for almost one century since it was first discovered at its type locality on Hong Kong Island in 1861<sup>[5]</sup>. One larger population with approximately 80 individuals has recently been discovered at Sunset Peak on Lantau Island. The species was then recorded again in Guangxi in 1957<sup>[1]</sup> and recently in Guangdong in 1997<sup>[2]</sup>, and it is interesting to note that all these records were restricted to a narrow strip about 22°N in latitude in southern China. Moreover, this species belongs to a single species genus *Tetrathyrium* which is a relic and endemic to China. Existing populations of this species definitely deserve more scientific studies and conservation effort due to their uniqueness and rarity.

Only one single tree was found when *Camellia crapnelliana* was discovered in 1903 at its type locality at Mt. Parker<sup>[8]</sup>. One other location at Ma On Shan with over 70 trees was discovered in 1970's. Similarly, *Camellia granthamiana* was first discovered in 1955 at its type locality at Tai Mo Shan from a single individual<sup>[8]</sup>. Although more individuals were found in 1970's in the vicinity of the original locality and another population recorded at Ma On Shan in 1996, the species is still considered very rare locally and globally. This species has so far been recorded in Hong Kong and Guangdong only.

Interestingly, a self-sustaining population of *Keteleeria fortunei* has been recorded at a coastal site on Hong Kong Island and it forms a specialized vegetation type of Hong Kong<sup>[9]</sup>. Except for a few more individuals of *Keteleeria fortunei* that have been found in the vicinity, the species has not been reported at any other location within the Region. Although some researchers suggested that the population might have originated from cultivation<sup>[9]</sup>, its actual origin is yet to be found out. Another rare species, *Glehnia littoralis* has only been found in Ping Chau and the few sandy beaches at Sai Kung. These beaches are the few remaining undisturbed natural sandy beaches within the Region. This species is also distributed sporadically along the coastal sandy shore of China. Indeed, this species is likely to become endangered due to rapid development along the coast of China. Remaining populations and natural habitats of this species should be preserved as far as possible.

## 2 Conservation of rare and endangered plants in Hong Kong

Under the Forests and Countryside Ordinance, Chapter 96, damaging plant in any forest or plantation on Government land is prohibited. Some attractive species are specifically listed in the Forestry Regulations, a subsidiary legislation of Chapter 96, which further controls the sale and possession of the listed species. For instance, *Alophila spinulosa*, *Amentotaxus argotaenia*, *Keteleeria fortunei*, *Camellia crapnelliana* and *Camellia granthamiana* mentioned above are protected under the Forestry Regulations.

Other measures including designation of country parks, special areas and Sites of Special Scientific Interests (SSSIs) have also been adopted by which habitat protection for rare and endangered plants can be achieved. Country parks and special areas are designated under the Country Park Ordinance for the purpose of nature conservation, countryside recreation and outdoor education. There are now 22 country parks and 14 special areas in Hong Kong covering about 40% of the land area of the region. For example, habitats of the major population of *Camellia granthamiana* and the single individual of *Tsoongiodendron odorum* are situated within country parks' under statutory protection.

SSSIs are sites which are of special scientific interest by reason of their flora, fauna or geographical features. The listing of SSSIs is an administrative device to ensure that government departments are aware of the scientific importance of such sites and to ensure that they give due consideration to conservation when development in or near these sites are proposed. Through careful land-use planning in and around such sites, the protection of these sites can be secured. For example, Mau Ping has been listed as a SSSI in recognition of the presence of the largest population of *Camellia crapnelliana* in Hong Kong.

In addition to the protection of habitats of the rare and endangered plant species, *ex situ* conservation has also been adopted in Hong Kong. Two arboreta have been set up, namely the Shing Mun Arboretum and the Lion Nature Education Centre Arboretum in order to preserve living specimens of some important plant species as well as for educational purpose. Various methods such as seed collection and air layering have also been attempted to propagate the rare and endangered plants. The most successful examples are *Keteleeria fortunei*, *Camellia crapnelliana*, *Camellia granthamiana* and *Aquilaria sinensis*. Seeds of these species have been collected in the field and seedlings raised in nursery. The seedlings have then been re-planted to the wild and populations successfully established.

In fact, there are some other plant species in Hong Kong which are considered rare but have not been mentioned above. For instance, *Ailanthus fordii* Noot. is one of the three local species (the other two are *Camellia crapnelliana* and *Camellia granthamiana*) which are listed in the IUCN Plant Red Data Book<sup>[8]</sup>. Although the species has been artificially propagated and planted as an amenity tree, its populations in the wild is very scarce. Another rare species, *Asarum hongkongense* S. M. Hwang, was discovered at its type locality in Lantau in 1983 (Hong Kong Herbarium Number 34402) and described as a new species in 1990 by Hwang & Wong<sup>[10]</sup>. This species so far has not been found in anywhere else in the world. Moreover, *Gmelina chinesis* Benth. and *Nauclea officinalis* Pierre et Pitard which are listed as protected species in Guangdong Province<sup>[11]</sup> can also be found in Hong Kong. It is apparent that a local rare plant list is essential for the formulation of conservation strategy for Hong Kong. The specimens of the Hong Kong Herbarium are currently being reviewed and field surveys will be carried out to draw up a rare plant list for Hong Kong.

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