

The present condition of plant conservation by Japanese botanic gardens and their provisions for the 2010 Target

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Plant Diversity in Japan

Japan has a long narrow land mass extending from north to south and its climatic diversity spreads from Sub Frigid Zone to Subtropical. It has much precipitation and great climatic difference of four seasons. Diverse natural environments are made by the landscape with a changing topography, namely rivers, plains, basins and mountains. Various plants grow in and adopt this diversity of climate and landscape. Two third of Japanese land is covered by forests. It is one of the most forested countries in the world. We have about 7,000 species of seed plants and ferns. Within the range of species about 2,900 are endemic in Japan. That means 40% of all species.

Based on the Ministry of Environment report released in 2000, 20 plant species are already extinct in Japan and 1,835 are threatened with extinction, which means 24% of the total plant species in our country (Environmental Agency, 2000).

Conservation by Japanese botanic gardens

The Japan Association of Botanical Gardens (JABG), aims to develop and disseminate services for botanic gardens and provide good communication between botanic gardens, government and civil societies. It supports the activities of research, documentation, education, exhibition and etc. by the member botanic gardens. At the moment JABG is made up of 119 Japanese member botanic gardens.

JABG has made two surveys about the condition of plant conservation in the member botanic gardens from 1999 to 2003.

More than half of botanic gardens did or are doing conservation works and/or educational activities for citizens. The main works they did and/or ready to do are as follows.

1. Collection and propagation of endangered species

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2. Conservation works *in situ*
 3. Emergency evacuation of endangered species
 4. Research on the biological property of endangered plants
 5. Educational work for the study of plant diversity and conservation for the community
 6. Support the conservation activity of NPOs (non-profit organizations - see) <http://www.jnpoc.ne.jp/English/index.html>)

However, 22% of member gardens have no programme to collect, cultivate and conserve endangered plants in their gardens. That means there are many member botanic gardens which have no facilities to work on plant conservation.

Endangered plants conserved in botanic gardens

Japanese botanic gardens keep and cultivate 695 species of the 1835 endangered plants, corresponding to 38% in 2003. However, 459 species within 695 are cultivated in less than 3 gardens. For the secure conservation of these plants, it is necessary to be cultivated by more gardens. Documents about their habitat are completed on only 29% plants kept in botanic gardens.

Our provisions for the 2010Target

1. Botanic garden network for conservation

There is no botanic garden in Japan which can conserve all the endangered plant species in one organization. In the past, each garden independently undertook conservation work, not knowing the detail of work done by other institutes. Therefore they duplicated efforts on the same activity.

To increase the number of endangered species conserved in Japanese botanic gardens and improve the quality of conserved plants, it is a necessary to establish a national network of botanic gardens, making use of the specialty of each garden and mutual cooperation in undertaking conservation work.

In 2006, JABG set up a new institution, a Network Hub of Botanic Gardens for Conservation, considering their climate, region or field of research. The regions were divided into 9, Hokkaido, Tohoku, Kanto, Hokuriku, Tokai, Kinki, Chugoku-Shikoku, Kyushu and Okinawa.

The hub botanic gardens collect and conserve mainly endangered plants which are occur in their areas and coordinate other botanic gardens in the area, local governments, NPOs and other authorities.

JABG coordinates the network totally and collects, arranges and distributes information about the plant conservation, promotes workshops and organizes the distribution of endangered seeds and plants between gardens.

One of the main activities of this system is to collect and conserve seeds from their habitat.

In addition to this networking system, the collection of information on the genome has to be maintained from four main areas: living plants, specimens, seed and DNA. By establishing the system for the conservation of total plant genomes, we are confident that our important plants will be conserved steadily and continuously.

2. Manual for the conservation of plant diversity in Japanese botanic gardens, compilation and distribution

In 2006, JABG compiled a new technical manual describing the present situation of plant conservation in Japanese botanic gardens, philosophy and technology through the financial support of BGCI, The National Science Museum and Japan Fund for Global Environment.

3. Public relations about the importance of plant conservation and the role of botanic gardens

- A travelling exhibition about the conservation of endangered plants in botanic gardens - Let's conserve our native plants: The travelling exhibition about the conservation of endangered plants is being held in botanic gardens throughout Japan, under the auspices of JABG, BGCI and the Ministry of Environment. It started in 2005 and will be held in about 30 gardens.
- An exhibition about the conservation of endangered plants in the city centre: The exhibition in botanic gardens is not enough to propagate the aim of botanic gardens for plant conservation to the public. In August 2006, the exhibition was held at the Tokyo Shinjuku city centre. Many citizens and commuters visited the exhibition.
- The Botanic Garden Symposium—Let's conserve our native plants: On March 10, 2007 a symposium was held in Tokyo to discuss the conservation work undertaken by botanic gardens and their role in the conservation of plant diversity in Japan.

Reference

Environmental Agency, 2000, *Revision, Japanese Threatened Species – Red Data Book – 8 Plants I* (vascular plants), Natural Environment Research Centre, Tokyo.