

Botanical Gardens and Their Role in Conservation of Nature

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Abstract

A botanical garden or botanic garden[nb 1] is a garden dedicated to the collection, cultivation and display of a wide range of plants labelled with their botanical names. It may contain specialist plant collections such as cacti and other succulent plants, herb gardens, plants from particular parts of the world, and so on; there may be greenhouses, shadehouses, again with special collections such as tropical plants, alpine plants, or other exotic plants. Visitor services at a botanical garden might include tours, educational displays, art exhibitions, book rooms, open-air theatrical and musical performances, and other entertainment.

Introduction

Botanical gardens are often run by universities or other scientific research organizations, and often have associated herbaria and research programmes in plant taxonomy or some other aspect of botanical science. In principle, their role is to maintain documented collections of living plants for the purposes of scientific research, conservation, display, and education, although this will depend on the resources available and the special interests pursued at each particular garden.

The origin of modern botanical gardens is generally traced to the appointment of professors of botany to the medical faculties of universities in 16th century Renaissance Italy, which also entailed the curation of a medicinal garden. However, the objectives, content, and audience of today's botanic gardens more closely resembles that of the grandiose gardens of antiquity and the educational garden of Theophrastus in the Lyceum of ancient Athens.[1]

The early concern with medicinal plants changed in the 17th century to an interest in the new plant imports from explorations outside Europe as botany gradually established its independence from medicine. In the 18th century, systems of nomenclature and classification were devised by botanists working in the herbaria and universities associated with the gardens, these systems often being displayed in the gardens as educational "order beds". With the rapid rise of European imperialism in the late 18th century, botanic gardens were established in the tropics, and economic botany became a focus with the hub at the Royal Botanic Gardens, Kew, near London.(1,2)

Over the years, botanical gardens, as cultural and scientific organisations, have responded to the interests of botany and horticulture. Nowadays, most botanical gardens display a mix of the themes mentioned and more; having a strong connection with the general public, there is the opportunity to provide visitors with information relating to the environmental issues being faced at the start of the 21st century, especially those relating to plant conservation and sustainability.

The Botanic Garden was founded in 1621 with a mission *To promote the furtherance of learning and to glorify nature*. In the almost 400 years since then, although many people and plants have been involved in the history of the Garden, we continue to educate as many people as possible about the importance of plants, to help conserve plants around the world and to support teaching and research at the University

and beyond.

Visit inspiring herbaceous borders, glasshouses that take you around the World or simply relax in the oldest Botanic Garden in Britain. The Botanic Garden is the most compact, yet diverse collection of plants in the World right in the heart of the city centre and is open throughout the year for you to visit and enjoy.(3,4)

List of botanical gardens in India

Name	State	[hide] Details
Assam State Zoo -cum-Botanical Garden, Guwahati	Assam	
Sanjay Gandhi Biological Park, Patna	Bihar	
Panjab University Botanical Garden	Chandigarh	http://www.bgci.org/garden.php?id=929
Botanical Garden Sarangpur , Sarangpur	Chandigarh	
Gujarat Technological University, Ahmedabad	Gujarat	
Botanical garden Vaghai, Saputara	Gujarat	
R. B. Botanical Garden and Amusement Park	Gujarat	

The GarçaBrancaAyurvedic Botanical Garden, Loutolim	Goa	
Cubbon Park, Bangalore	Karnataka	
Curzon Park, Mysore	Karnataka	
Pilikula Arboretum, PilikulaNisargadhama, Mangalore	Karnataka	Also known as Pilikula Botanical Garden
Regional Museum of Natural History Mysore, Mysore	Karnataka	
University of Mysore Botanic Garden, Mysore	Karnataka	
Prof. Nagaraj botanical garden in Botany department G U KALABURGI	Karnataka	
Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Trivandrum	Kerala	Biggest in India and conserves the largest number of plant species in Asia
Vellayani Agricultural College , Trivandrum	Kerala	
Empress Garden, Pune	Maharastra	Empress Garden, Pune

Odisha State Botanical Garden, Nandankanan, Bhubaneswar	Odisha	Odisha State Botanical Garden Nandankanan, Bhubaneswar, Odisha
Botanical garden Guru Nanak Dev University, Amritsar	Punjab	
Botanical garden Punjabi University, Patiala	Punjab	
Auroville Botanical Gardens, Auroville	Tamil Nadu	1 2
Botanic Gardens - Tamil Nadu Agricultural University, Coimbatore	Tamil Nadu	
Government Botanical Gardens, Ootacamund, Nilgiris district	Tamil Nadu	
The Institute of Forest Genetics and Tree Breeding, Coimbatore	Tamil Nadu	1
Semmozhi Poonga, Chennai	Tamil Nadu	
Botanical Garden, Hyderabad	Telangana	
NTR Garden, Hyderabad	Telangana	

Aligarh Fort , Aligarh	Uttar Pradesh	Maintained by the Department of Botany, AMU
Botanical Garden of India Republic , Noida	Uttar Pradesh	
Jhansi Botanical Garden , Jhansi	Uttar Pradesh	
Saharanpur Botanical Garden, Saharanpur	Uttar Pradesh	
Acharya Jagadish Chandra Bose Indian Botanic Garden, Shibpur, Kolkata	West Bengal	
Agri Horticultural Society of India, Alipore, Kolkata	West Bengal	
Garden of Medicinal Plants, North Bengal University	West Bengal	
Lalbagh , Bangalore	Karnataka	
Lloyd's Botanical Garden , Darjeeling	West	

Malampuzha Garden, Palakkad	Kerala	
Mysore Zoo, Mysore	Karnataka	
Narendra Narayan Park, Cooch Behar	West Bengal	

Conservation impact of botanical gardens

Botanic gardens have collectively accumulated centuries of resources and expertise that now means they play a key role in plant conservation. Many of these activities contribute to *ex situ* conservation, but botanic gardens also play an important role in *in situ* conservation.

Botanic garden activities that are used for plant conservation:

- Horticulture and cultivation skills allow us to grow plants that might be lost in nature, which means that species diversity can be conserved in the gardens, but also allows us to consider restoration and rehabilitation of degraded habitats.

Living collections

- of plants collect species under various groupings, to maintain a living store of genetic diversity that can support many activities in conservation and research.

Seed banks

- and collections of living plants allow species to be safeguarded. Plants must be carefully collected stored to ensure maximum genetic diversity is retained, and much research is required to determine the best way of storing each species. This is the conservation of plant diversity *in situ*, and botanic gardens are key to this strategy's capacity and success.
- Research and development into plant taxonomy and genetics, phytochemistry, useful properties, informing selection of plants that can withstand degraded and changing environments (especially important in face of the threats posed by climate change).
- Education is a strength of botanic gardens that allows them to communicate the importance of conserving plants, reaching out to diverse audiences, and also to communicate how this may be achieved.

Linking plants with the well-being of people,

- and also helping conserve indigenous and local knowledge, to encourage the sustainable use of plant resources for the benefit of all, as part of sustainable development. (5,6,7)

There is a wide variety in the size and types of botanic garden, in all regions of the world, working together in networks to share information and expertise. You can use our Garden Search Database to search for botanic gardens by keyword or country.

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References:

1. Spencer & Cross 2017 , p. 56
2. Bailey & Bailey 1978 , p. 173
3. Huxley 1992, p. 375
4. Wyse Jackson & Sutherland 2000, p. 12
5. Wyse Jackson 1999, p. 27
6. The History of Botanic Gardens". BGCI.org, BGCI. Retrieved 8 November 2011.
7. East Asia Botanic Gardens Network, Archived from the original on 23 January 2008. Retrieved 8 November 2011.