BRIEF INTRODUCTION OF DINGHUSHAN FOREST ECOSYSTEM RESEARCH STATION

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Dinghushan Forest Ecosystem Research Station

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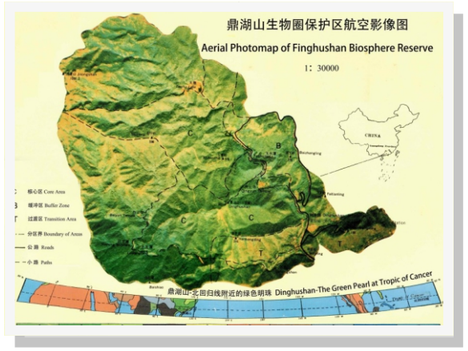
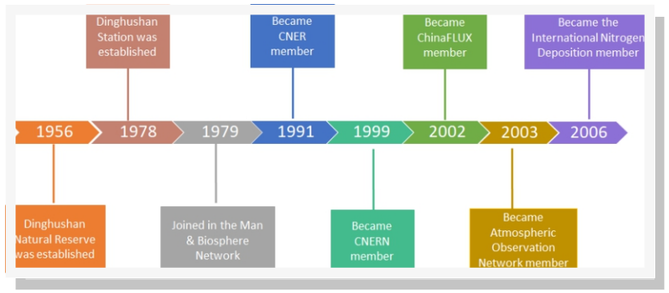


Dinghushan-The Green Pearl at Tropic of Cancer

Dinghushan Station is located in Dinghushan National Nature Reserve (112º30'39''-112º33'41'' E, 23º09'21''-23º11'30''N), with an area of 1,133 ha and an elevation ranging from 10 to 1000 . 3m above sea level. The region is characterized by a typical south subtropical monsoon climate, with annual average precipitation of 1,950 mm, of which nearly 70% falls from April to September and 30% from October to March. The annual mean temperature is 20.8ºC, and relative humidity is 80%. The predominant soil types are lateritic red-earth in the lower altitude region and yellow earth in the higher altitude region.

History of Dinghushan Station

Dinghushan Forest Ecosystem Research Station (hereafter referred to as Dinghushan Station) was established in 1978. It became a member of the Chinese Ecosystem Research Network (CERN) of the Chinese Academy of Sciences (CAS) in 1991, and became a national field scientific observation and research station in 1999. Dinghushan Station is also a key station in the ChinaFLUX Network, the Atmospheric Observatory Network of the Chinese Academy of Sciences and the International Nitrogen Deposition Network.



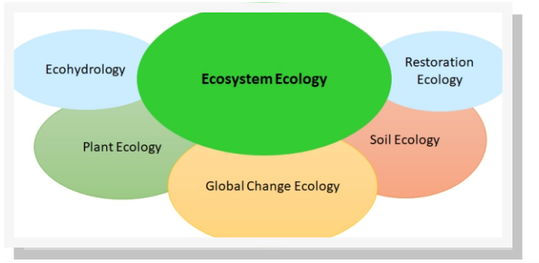
Development milestones of Dinghushan Station

Favored by the subtropical monsoon climate and long history of protection, DHS has various vegetation types and is abundant in biological diversity. There are 2291 higher plants species documented. Among the higher plants, there are 267 families and 877 genera.

Various vegetation types

Research Aims

Taking forest ecosystems in lower subtropical China as the research object and focusing on the core problems of ecosystem ecology, Dinghushan Station systematically studies the succession processes and natural course of the zonal forest ecosystem. The station has been exploring the tropical and subtropical forest ecosystem, its responses, adaptations and mechanisms of key processes such as carbon, nitrogen, phosphorus, water cycle, and their coupling to global change.



Research disciplines of Dinghushan Station

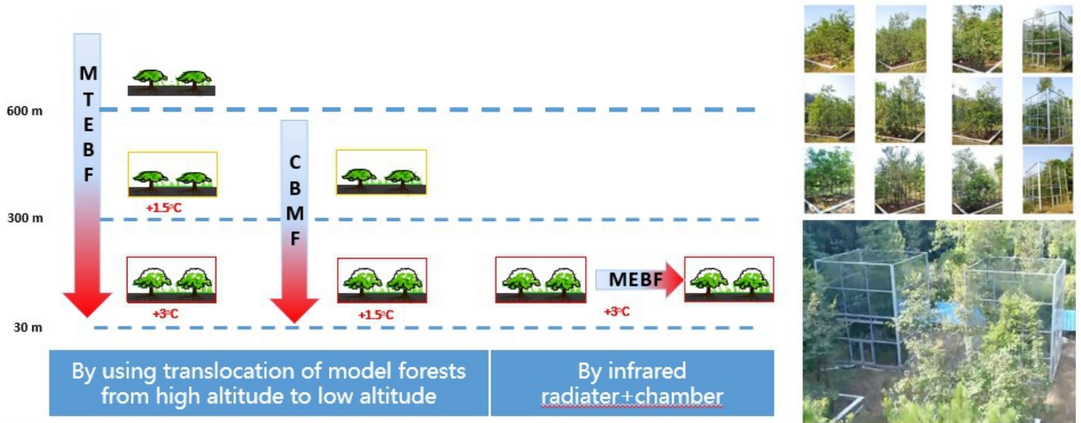
Facilities

Dinghushan Station has advanced scientific research facilities, which has greatly promoted the development of scientific research and made great strides toward the internationalization of its forest ecosystem research. There are many long-term experimental platforms, including an experimental platform of forest ecosystems transplanted along an elevation gradient, precipitation variability control experiment platform, simulated acid deposition experiment platform, simulated nitrogen deposition experiment platform and forest water use experiment platform. The station is also equipped with a series of monitoring facilities such as meteorological radiation automatic observation facilities, forest microclimate automatic observation tower, water vapor flux observation tower, canopy tower crane, atmospheric background observation, drones, and laboratory analytical instruments.

Some research facilities in Dinghushan Station

Dinghushan Station is equipped with laboratories, conference rooms, field video surveillance rooms, an off-road vehicle and a commercial vehicle, and hostels for accommodating researchers and visitors, providing researchers with suitable working and living conditions.

Laboratories, instrument and equipment



Experimental platform of forest ecosystems down an elevation gradient

Simulated acid deposition experimental platform

Precipitation variability experimental platform

Simulated nitrogen deposition experimental platform

Faculty

24 full-time scientists together with more than 50 graduate students from 5 research groups carrying out their work in Dinghushan Station.

Scientific research achievement

The research results from the Dinghushan station are particularly fruitful. The Station has published more than 1,000 papers (more than 360 SCI papers). Among them, 150 TOP30 SCI papers, which have been published in internationally renowned journals such as Science, PNAS, and Nature Communications, in various disciplines.

Dinghushan station received 27 authorized patents, including one for Japanese patents, one for new varieties, four were awarded the national invention patent, and nine patents for licensing agreements with enterprises, which promoted the transformation and application of scientific and technological achievements. Dinghushan Station won the title of “Excellent Ecological Station”, 5-year-interval evaluation of CERN three consecutive times (2001-2005, 2006-2010, 2011-2015).

2001-2005年度“优秀野外站” 2006-2010年度“优秀生态站” 2011-2016年度“优秀生态站”

Awards and patents

Cooperation

Dozens of research institutes and universities have carried out long-term research work at the Dinghushan Station. Hundreds of experts and scholars from home and abroad visit each year. Dinghushan Station has sent hundreds of researchers, graduate students to study abroad, cooperation research and so on, and has also successfully held several international and domestic academic workshops or training classes.

Public education

In the past few decades, Dinghushan Station has paid attention to public education and carried out various scientific practice activities. The exhibition hall of scientific research achievements and the opening of popular science exhibition hall have become an important science popularization and teaching practice base for the middle and primary school students in the Guangdong province.

The “Dinghushan Window”, published since 1998, has never been interrupted for the last 20 years. It has become an important information dissemination channel for Dinghushan Station.

Data collection and management system

The background investigation campaign of vegetation was launched as early as 1955. After the establishment of Dinghushan Station, it has aimed at the in-depth research of international frontier scientific issues. Dinghushan Station has set a benchmark for the construction of the field forest stations in China.

Dinghushan Station has accumulated rich data and diverse information resources, carried out the electronic management of historical data compilation and standardization, developed the field data collection and audit system, including the GIS positioning integrated information management service website, providing the public with data and other resources sharing services.