



FOREST
RESEARCH
INSTITUTE





ICFRE-Forest Research Institute Dehradun

Forest Research Institute (FRI), Dehradun has its roots in the erstwhile Imperial Forest Research Institute and College established in 1906 to organize and lead forestry research in the country. Its history is synonymous with the evolution and development of scientific forestry not only in India but in the entire Indian subcontinent. The institute also administered training to forest officers and forest ranger in the country and after independence it was named as Forest Research Institute. In 1988, FRI and its research centres were brought under the administrative umbrella of Indian Council of Forestry Research & Education (ICFRE) under the Ministry of Environment, Forests and Climate Change, Government of India.

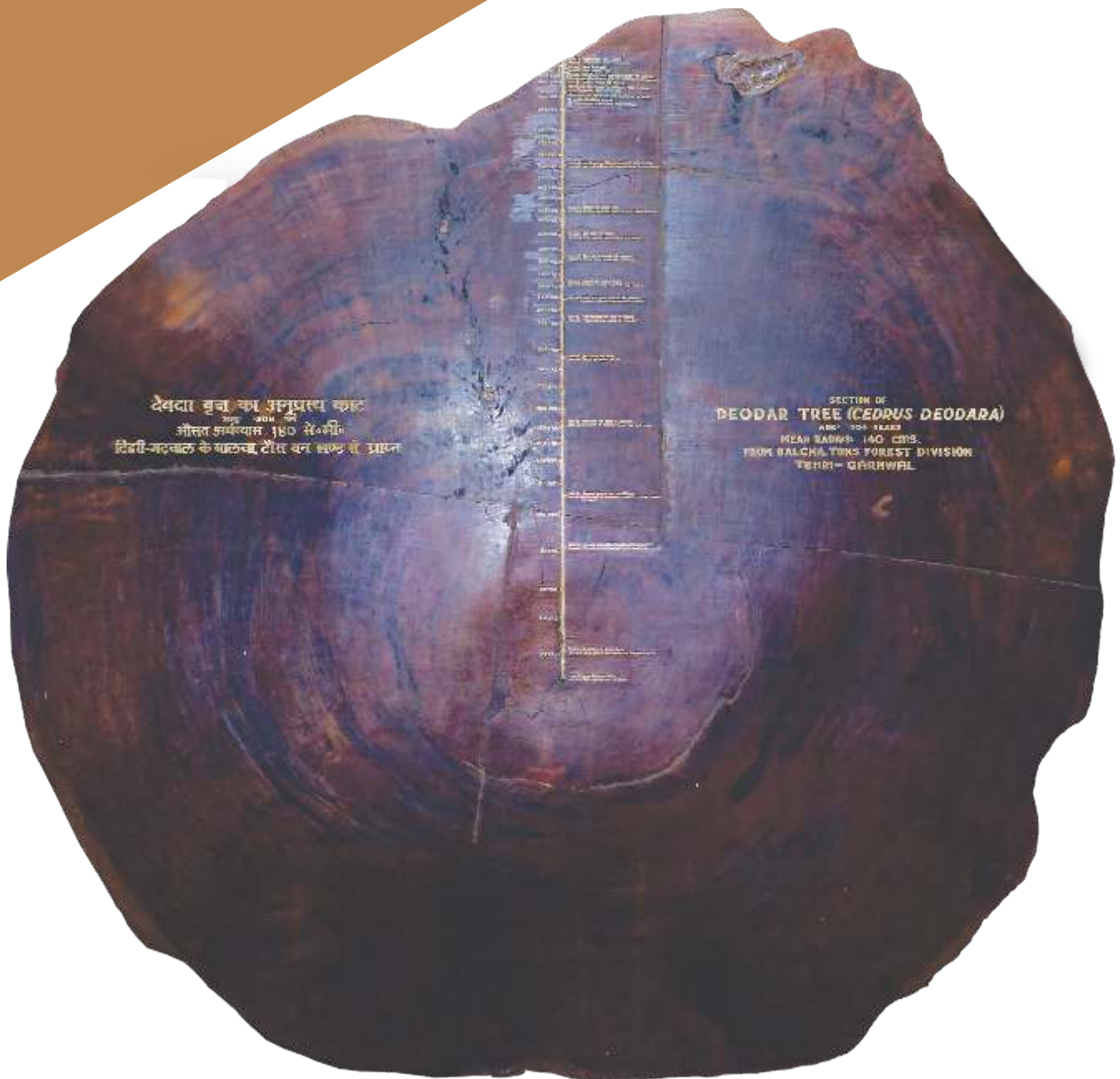
The institute, set in sylvan surroundings of the Doon Valley, has a campus spread over about 500 hectares. The main building completed in 1929, is an impressive edifice of the Greco Roman and Oriental architecture having a plinth area of 2.5 hectares, with the outer Himalayas forming its backdrop. It is a major tourist attraction in Dehradun.



CROSS SECTION OF DEODAR TREE

Age - 704 Years

Radius - 140 cm



This tree was a sapling in 1215 AD (when Qutab Minar was constructed at Delhi) and was alive till 1919. The main historical events of Indian history during its life span are indicated by a date line chronologically in cross section. The age of the tree has been estimated based on the annual rings seen in the cross section. The tree was retrieved from the Batcha Tons forest of Tehri Garhwal and is an exhibit at the Timber Museum of Forest Research Institute.

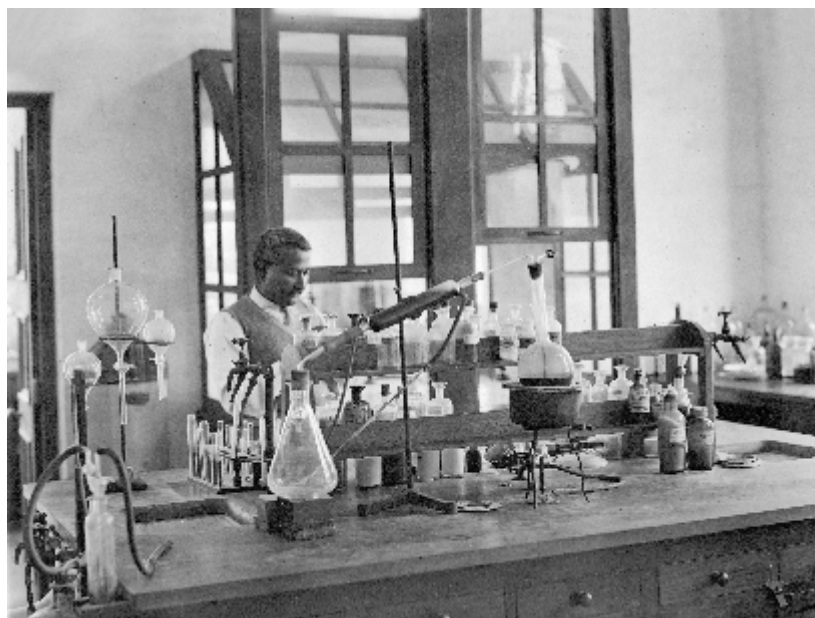


Thrust Areas

- Conservation of biodiversity
- Production, certification and supply of quality seeds of fuel, fodder and timber species
- Social Forestry/Agro forestry
- Conservation and eco-restoration of ecologically fragile and disturbed areas
- Utilization of non-conventional woods and weeds for manufacture of forest products
- Development of technology for reclamation of wastelands
- Planting stock improvement programme of different species
- Geological, geomorphological and micro-morphological studies on skeletal and sodic soils
- Reclamation and ecological monitoring of mined areas
- Development of technology for eco-friendly preservatives
- Forestry education and policy research to meet emerging challenges

Research Divisions

- Silviculture and forest management
- Chemistry and bio-prospecting
- Extension
- Forest ecology and climate change
- Forest botany
- Forest products
- Forest protection
- Genetics and tree improvement





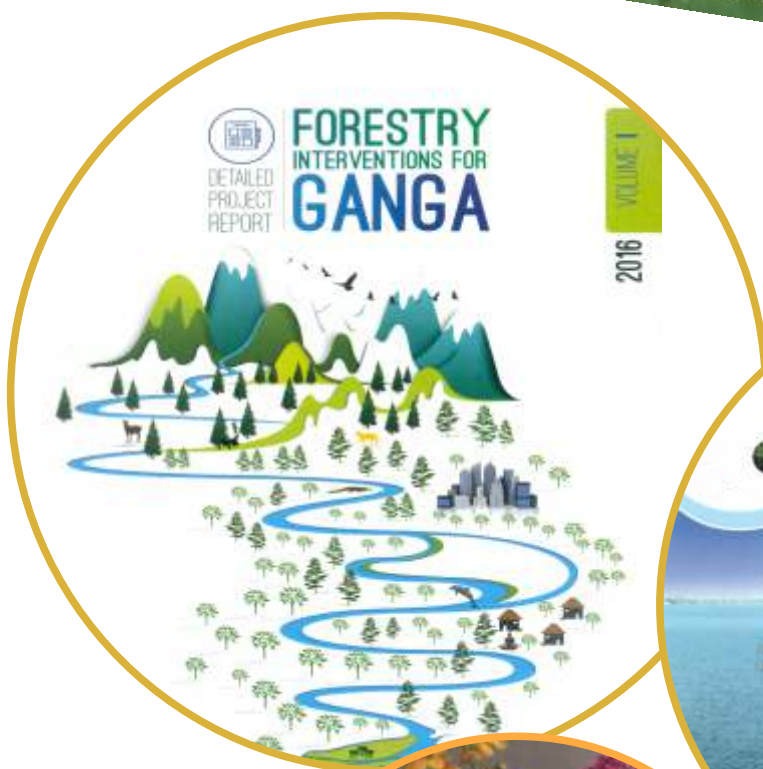
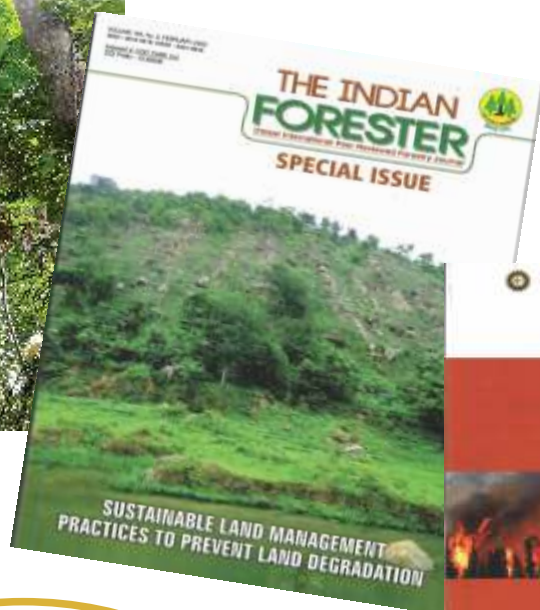
- An improved binding material for agarbatti
- Preparation of katha from *Uncaria gambier*
- Preparation of herbal gulal
- Agro-forestry models
- Bio-fertilizer application for growth enhancement in nurseries
- Weed-derived product for enhanced silk production
- Greening of barren sodic soils
- Resin tapping techniques
- ACA treatment of eucalyptus door and window sections
- Utilization of eucalyptus and poplar
- High yielding varieties of melia, neem, poplar and corymbia
- Biological control of diseases in nurseries



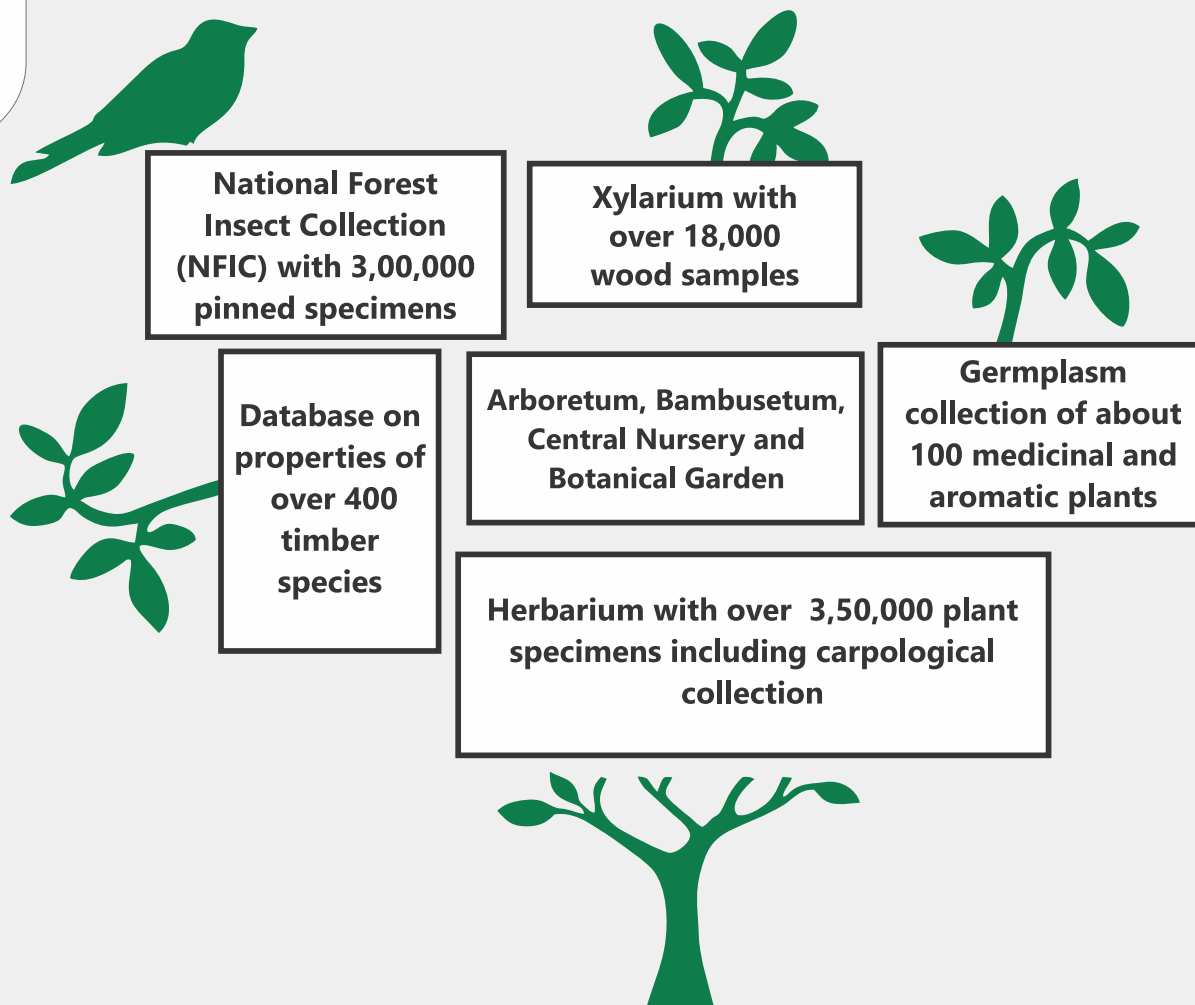
- ZiBOC-eco-friendly wood preservative
- Wood plasticization and bending through vapour phase ammonia treatment
- Vacuum kiln timber
- Rakshak - A bio-pesticide to control pests of poplar
- Rehabilitation and eco-restoration of mined lands/over burden spoils
- Reclamation of sodic soil
- Preparation of compost plant biomass
- Natural dyes from forest biomass
- Mass propagation of bamboos through macro-proliferation
- Laminated wood for door and window shutters from poplar
- Improved tools for nursery practices
- Samridhi-A process for obtaining photo ecdysteroids from weeds of Amaranthaceae for the synchronised maturation of mulberry silkworm
- Solar heated timber-seasoning kiln



- Clonal propagation of difficult to root forest species and low cost clonal propagation technologies
- Tissue culture protocol for important bamboo/tree species
- Conservation of heritage trees
- Natural durability of timber and timber products under terrestrial and cooling towers conditions
- Isolation of natural fiber from pine needles
- A process for isolation of ursolic acid from Eucalyptus hybrid leaves



Rich Repository of Biodiversity



Scientific Services Offered by FRI

Consultancy and training to industries on use of new raw materials, processing and wood utilization

Seed testing services for tree species

In-situ advice on problems of factory processes and diagnostic analysis

Seasoning, preservative treatment and sawing of wood on commercial basis

Wood identification, testing and quality control timber and timber products

Phytosanitary certificate for export of plant material

Dissemination of new important technologies and practices through training, awareness programmes and seminar/workshops/ mela in FRI and its Van Vigyan Kendras in different states under its jurisdiction

Education & Extension

- Short Term Training Courses
- Nursery and plantation technology
- Hi-tech nursery and plantation management
- Agroforestry
- Plywood manufacture
- Classification and grading of timber
- Wood Seasoning
- Urban Forestry and landscaping
- Exposure to field identification of timbers



- Eco-restoration of wastelands
- Cultivation and utilization of medicinal plants
- Skill development on commercial utilization and value addition of Non-Wood Forest Produce
- Genetically improved materials for increasing forest productivity
- Management of Forest Herbarium and Arboreta

Sponsored Training Courses

- Role of Forestry in Disaster Management
- Forest Fire Mitigation & Management
- Conservation and Management of coastal ecosystems
- Silviculture/ Forestry
- Seed & Nursery Technology



08 FRI

International Yoga Day celebration at FRI



अंतर्राष्ट्रीय योग दिवस

21 जून, 2018

वन अनुसंधान संस्थान (एफ.आर.आई.), रादून, उत्तराखण्ड





Glimpses of Visits





Excellent display of the forest management practices developed over a century ago. It showcases models and specimens on evolution of forestry in India, forests type, forestry practices, major work issues and challenges in Indian forestry. Seed and bark of trees species, tools, publications, including a corner on the Indian Forester are other attractions of the museum. Short movies on various aspects on forestry from around India are also shown.



The timber museum has exhibits of the best known and most common commercial woods of 126 commercially important species. The museum gives the visitors an insight on the characteristics of wood. The lower halves of the plants have been left in the natural state while the upper halves are oiled with linseed oil to enhance the feature of the timber. Hanging above the planks, there are photographs of the trees whose planks are displayed alongwith small maps indicating their distribution in India.

12 FRI



Excellent displays of about 2000 NWFPs classified on the basis of their usage into distinct categories viz., Drugs/Medicinal Plants, Edibles, Aromatics, Gums & Resins, Tans & Dyes, Fibre and Flosses, Bamboo & Canes and their products including handcraft items, Lac, Katha and miscellaneous items collected over a century ago and most of which are being used even today in various regions of the country.



The museum has collection of sporophores, disease affected plant parts, models, posters showing disease etiology, testing technique, etc. Fungarium houses nearly 12,000 specimens of forest diseases and fungi including edible and medicinal fungi.

14 FRI



वन कीट संग्रहालय FOREST ENTOMOLOGY MUSEUM

Excellent display of more than 3,000 of forest-insect-pest-damaged wood samples, 18,000 identified forest insect species collected over a century, 2,847 exhibits, representing the damaged caused by insect pests to seeds, seedlings, standing trees, felled timbers, bamboos and also finished products. These exhibits, models, charts and photographs have been painstakingly collected over the last more than nine decades.



The erstwhile Social Forestry Museum of the institute has been converted into Technology Demonstration Center and depicts 16 technologies developed by the Forest Research Institute (FRI) and its sister organizations like Institute of Wood Science & Technology (IWST), Bangaluru, Arid Forest Research Institute (AFRI), Jodhpur, Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore and Tropical Forest Research Institute (TFRI), Jabalpur. The technologies in the centre have been depicted through 9 models and 7 storytelling boards.





The establishment of the xylarium was initiated by Gamble in 1878. The FRI xylarium comprises over 18,000 wood specimens. 8,156 Indian samples of 1,600 woody species belonging to 105 families and 10,248 samples from foreign countries were received. Collection of authentic wood samples from India and abroad, collection of unique woods of India

depicting wood biodiversity, and collection of wood cross sectional discs depicting variation in sapwood and heartwood color is a unique feature of the xylarium. This unique collection in xylarium is rendering a great service to the entire nation through timber identification especially for Defense, Customs, Port trust of India, CBI, Anti-corruption Bureau, Police, Vigilance Department etc.

National Forest Library and Information Centre (NFLIC)



Large collection of documents on chemistry, biological sciences, agriculture etc. Excellent Reference Section stocked with encyclopedia, dictionaries, handbooks and rare books Journals etc. Besides, it maintains a grey literature collection on forestry comprising documents like thesis dissertations, research reports, conference proceedings, forest working plans, etc. which are neither formally published nor available commercially. NFLIC maintain 7,025 Ledger Files containing research and other useful articles on different forest species, subjects, and countries. The centre publishes regularly a half-yearly Forestry Bulletin ENVIS.



 <ul style="list-style-type: none"> • SECOND BIGGEST HERBARIUM IN INDIAN SUB CONTINENT • ESTABLISHED - 1808 • ARRANGEMENT - BENTHAM & HOOKER • OLDEST SPECIMEN - 1807 • TYPE SPECIMENS - 1,300 • TOTAL SPECIMENS - 3,50,000 • LARGEST FAMILY - LEGUMINOSAE (310) SPECIES • LARGEST FAMILY - PANICUM (172 SPECIES) 				
PLANT GROUP	GENUS	SPECIES	FAMILIES	LARGEST FAMILY
DICOTS	4126	27200	160	LEGUMINOSAE
MONOCOTS	924	6429	24	GRAMINEAE
Gymnosperms	37	263	08	CONIFERAE

PERIOD	NUMBER OF SPECIMENS INCORPORATED
Colonial Era (1806-1947)	252501
Post Colonial Era (1947-1992)	57679
ICRNE (1992 onwards)	19027

The Herbarium of the Forest Research Institute, Dehradun, known internationally as the Dehradun Herbarium is the second biggest herbarium and the largest forest herbarium in the country. It is composed of the Forest School herbarium started by J.S. Gamble in 1890, and the Saharanpur Herbarium started in 1816 and later merged with it in 1908. The oldest specimen housed in the herbarium dates back to 1807 collected by Dr. Hamilton from Assam. It has about 3,50,000 specimens. There are 1,400 valuable type specimens, arranged according to Banthem and Hooker system of classification. Within the family genera and species are arranged on the bases of Genera Planatarum and Flora of British India. They are also arranged on the bases of locality/place of collection viz., North west and central India, Bengal, Assam, Myanmar, South India, Asia east of India, Asia north of India, Asia west of India, Europe, America, Africa and Australia.





A unique collection of photographs and antiques showcasing history and evolutions of forestry research in India.



National Forest Insect Collection

Unique collection of holding about 3,00,000 pinned specimens
20,126 authentically identified species (including 1884 type species)

National Forest Insect Collection (NFIC) at Forest Research Institute, Dehradun is a unique and largest collection of forest insect specimens of Indian sub-continent. The collection has pride of holding about 3,00,000 pinned specimens (20,126 authentically identified species represented under 23 orders, 121 super-families, 281 families and 5589 genera). The oldest specimen in the collection dates back to the year 1858 i.e., *Hospitalitermes monoceros* (Isoptera: Termitidae). Researchers from India and abroad regularly visit NFIC to study and refer insect specimens. Insects being the most diverse group of organisms pose a challenge before the stakeholders for their correct taxonomic identification and an authenticated insect collection thus is the most important reference point for such studies.





Bambusetum

The Bambusetum of Forest Research Institute spread over an area of 4 ha. with 32 species of bamboo collected from across the country and abroad was established in 1932. It serves as a repository for the purpose of research and education on bamboo species both indigenous and exotics. This also provides planting materials to different agencies such as forest departments and other institutions for planting and research purposes. The Bambusetum is visited by students of biology, environment, forestry and research and educational institutions from different parts of the country and abroad.



The Botanical garden was established in 1925 by R.N. Parker who established seed exchange relations with a large number of institutions in India and abroad. About 500 exotics from different parts of the world are also represented. The Botanical garden covers an area of 10 ha. having plants tagged with their botanical names, family and country of origin. The garden has been divided into 8 sectors separated by the paths and avenues. Nearly 1,500 arboreal plants (Trees, Bamboos, Shrubs and Woody climbers) belonging to about 100 families, 400 genera and 700 species are growing in the garden. They include many perennials, potted plants, annuals and grasses. About 55% of the plant species in the Garden are exotics, which have been brought from more than 25 countries, majority being from Australia and South America.

FRI
20

FRI Deemed to be University



The University provides hostels, library, computer, medical and sports facilities to all its students within the campus.

COURSE OFFERED

- M. Sc. Forestry
- M. Sc. Environment Management
- M. Sc. Wood Science & Technology
- M. Sc. Pulp and Paper Technology



Doctoral Programme

FRI Deemed to be University confers PhD. Degree in various fields related to forestry, wildlife and environment. Total seventeen national institutes including ICFRE institutes located in different parts of India are research centres of FRI Deemed to be University.





ICFRE- Forest Research Institute

(Ministry of Environment, Forests & Climate Change, Govt. of India)

P.O. New Forest, Dehradun-Uttarakhand - 248 006 (India)

T.: 0135 222 4444

Website: www.fri.icfre.gov.in

