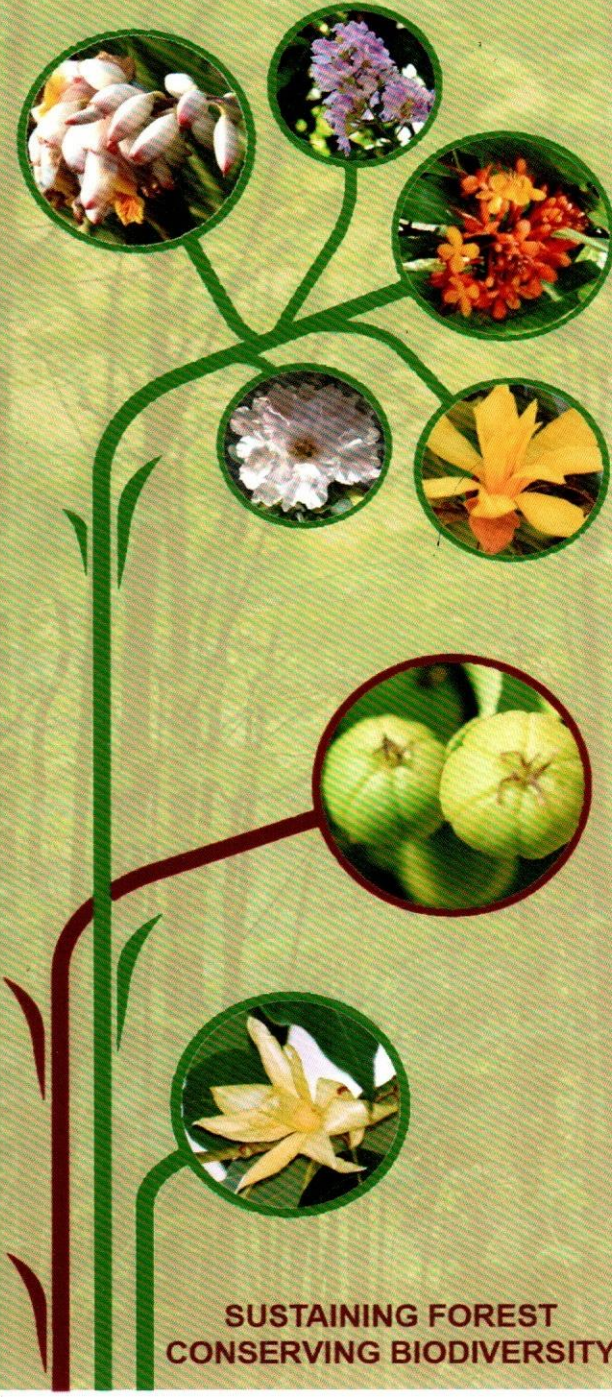


# PROMINENT RESEARCH PROJECTS

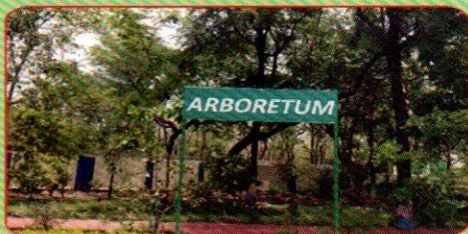


SUSTAINING FOREST  
CONSERVING BIODIVERSITY

**UTTARAKHAND FOREST  
RESEARCH INSTITUTE HALDWANI**

- ARBORETUM** **MEDICINAL HERBS AND SHRUBS** **FIGATUM** **PINETUM** **OAK SPECIES** **RHODODENDRON SPECIES** **BAMBUSETUM** **RINGAL SPECIES**
- WILD CLIMBERS** **CANETUM** **AROMATIC PLANTS** **TULSI** **TANNIN SPECIES** **GUM SPECIES** **GRASS SPECIES** **FERNARY**
- RAIPARIAN** **ORCHIDS** **PALMATUM** **CYCADS** **CACTUS & SUCCULENTS** **MOSS GARDEN** **LICHENS** **INSECTIVOROUS PLANTS**
- WILD EDIBLE** **ALPINE FLOWERS** **BRAHMA KAMAL** **WILD FLOWERS** **AQUATIC SPECIES** **WILD MUSHROOMS** **OTHERS** **BIODIVERSITY PLOTS**

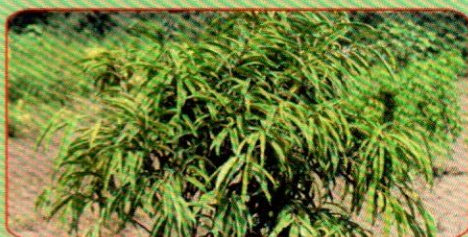
## Group Specific Projects



**01. Arboretum:** Established in Gaja and Haldwani. Arboretum in Gaja houses 185 and the one in Haldwani houses 128 tree & Shrubs species respectively.



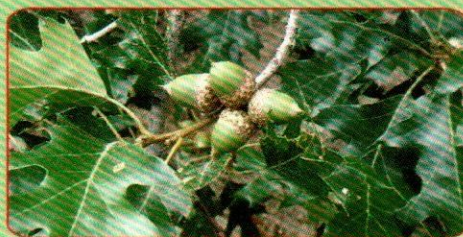
**02. Medicinal Herbs and Shrubs:** Across 8 ranges around 80 species of herb and shrub of medicinal value conserved.



**03. Ficatum:** Established in Lalkuan in an area of 3 hectare. At present it houses total 104 species.



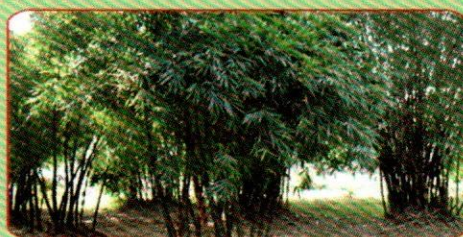
**04. Pinetum:** Established in Ranikhet in an area of 21.57 hectare. At present it houses 20 species of Pine.



**05. Oak species:** It was established in Kalika range and houses 8 species.



**06. Rhododendron species:** It is established in Pithoragarh range in an area of 1 hectare and houses 6 species



**07. Bambusetum:** Established in 2 ranges- Lalkuan range housing 25 species & Haldwani range housing 23 species.



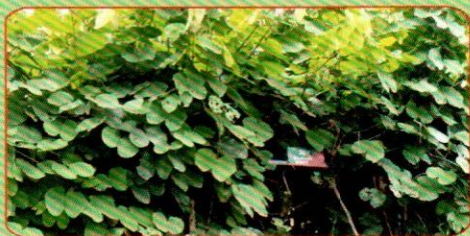
**08. Ringal species :** Rhizome bank of Ringal species is established in Gopeshwar range . At present it houses 4 species.

ARBORETUM [MEDICINAL HERBS AND SHRUBS] FICATUM [PINETUM] OAK SPECIES [RHODODENDRON SPECIES] BAMBUSETUM [RINGAL SPECIES]

WILD CLIMBERS [CANETUM] AROMATIC PLANTS [TUSSI] TANNIN SPECIES [GUM SPECIES] GRASS SPECIES [FERNARY]

RAIPARIAN [ORCHIDS] PALMATUM [CYCADS] CACTUS & SUCCULENTS [MOSS GARDEN] LICHENS [INSECTIVOROUS PLANTS]

WILD EDIBLE [ALPINE FLOWERS] BRAHMA KAMAL [WILD FLOWERS] AQUATIC SPECIES [WILD MUSHROOMS] OTHERS [BIODIVERSITY PLOTS]



**09. Wild Climbers:** It is established in Haldwani range in an area of 0.12 hectare and houses 32 species.



**13. Tannin species:** Established in Lalkuan Range in an area of 1 hectare, and houses 12 different species.



**10. Canetum.** It is established in Haldwani Range and houses 6 species



**14. Gum species:** Established in Lalkuan Range in an area of 1 hectare housing 9 different species.



**11. Aromatic plants:** Established in 2 ranges- Lalkuan houses 61 aromatic plants species and Bhujiaghat houses 35 spp.



**15. Grass species:** It is established in Kalika range, and houses 47 different species.



**12. Tulsi:** Established in Lalkuan and Dehradun range, housing 12 and 17 different species of Tulsi respectively.



**16. Fernary:** Established in Gaja & Kalika Ranges- Gaja houses 25 species and Kalika houses 54 species.

FERNARY

GRASS SPECIES

GUM SPECIES

TANNIN SPECIES

TULSI

AROMATIC PLANTS

CANETUM

WILD CLIMBERS

INSECTIVOROUS PLANTS

LICHENS

MOSS GARDEN

CACTUS & SUCCULENTS

CYCADS

PALMATUM

ORCHIDS

RAIPARIAN

OTHERS

WILD MUSHROOMS

AQUATIC SPECIES

WILD FLOWERS

GRAHMA KAMAL

ALPINE FLOWERS

WILD EDIBLE

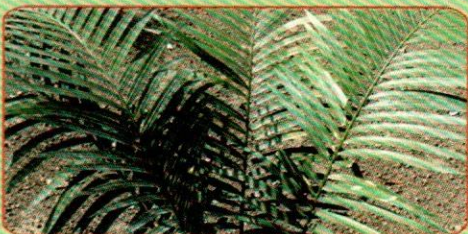
BIODIVERSITY PLOTS



**17. Raiparian:** Established in Shyampur in an area of 5 hectare. It houses total 30 species- 17 trees, 7 shrubs, 4 herbs and 2 climbers.



**18. Orchids:** Ex-situ conservation site of orchids in Mandal, Gopeshwar range houses 35 species and Gaja range houses 5 species. In-situ conservation area in Lumti has 40 species, while Mandal has 16 species.



**19. Palmatum :** Established in Haldwani in an area of 1.0 hectare. It houses 60 spp. of palm



**20. Cycads:** Established in Haldwani in an area of 0.5 hectare. It houses 6 spp. of cycads.



**21. Cactus & Succulents:** Established in Haldwani in an area of 0.5 hectare. It houses 61 species of cactus and 89 species of succulents.



**22. Moss garden:** It is established in Gaja range and houses 25 spp.



**23. Lichens :** It is established in Munsyari, Pithoragarh range (24 spp.) and Deoban in Kalsi range.



**24. Insectivorous plants:** It is established at Mandal, Gopeshwar range and has 4 species.

INSECTIVOROUS PLANTS

LICHENS

MOSS GARDEN

CACTUS & SUCCULENTS

CYCADS

PALMATUM

ORCHIDS

RAIPARIAN

BIODIVERSITY PLOTS

OTHERS

WILD MUSHROOMS

AQUATIC SPECIES

WILD FLOWERS

BRAHMA KAMAL

ALPINE FLOWERS

WILD EDIBLE



**25. Wild Edible Items-** It is established at Gaja range in an area of 0.75 hectare. It houses 4 spp. of berries, 17 spp. of fruits and 7 spp. of spices.



**26. Alpine flowers:**  
It is being established in Gopeshwar range in an area of 0.5 hectare and houses 12 species of alpine flowers



**27. Brahma Kamal:**  
It is being established in Mana, Gopeshwar range. At present it houses 2 spp.



**28. Wild flowers:** It is established at Gaja range and houses 23 spp.



**29. Aquatic species:** It is established in Haldwani range and houses 22 aquatic species.

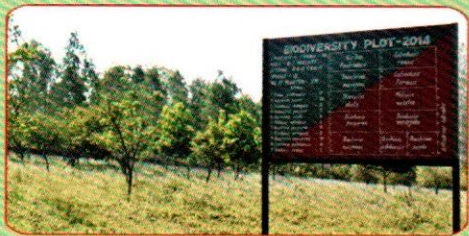


**30. Wild mushrooms:** Studies have been conducted in Deovan and Munsayri, where 14 and 13 species are being studied respectively.



**31. Others:** Around 2 species of liverworts has been conserved in Gaja Range and 1 species of Algae has been conserved in Haldwani range

## Biodiversity Conservation



**01. Biodiversity plots:** These house various important species from biodiversity point of view . The sites are at Lalkuan (12 spp.), Haldwani (20 spp.), Kalsi (12spp.) and at Shyampur (30spp.) .



**02. High Altitude RET plots:**

These sites are located in Mana Van panchayat, Chamoli (15 spp.), Harkot Van panchayat, Pithoragarh (25 spp.), and at Deoban (18 spp.), in Dehradun range.



**03. Preservation plots:**

For certain important species, total 41 preservation plots have been established across 8 research ranges.



**04. Ginkgo biloba (Living fossil) :**

It comes under the category of Living Fossil, dating back to Dianosaur era. Conservation site of Ginkgo biloba has been established in Kalika Range.

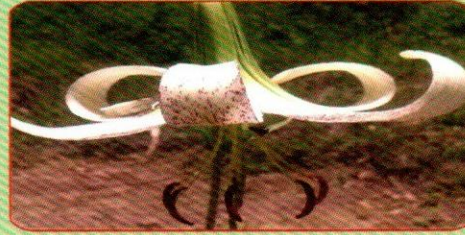


**05. Olea cuspidata:**

It is a rare species found in and around Chakrata area of Dehradun Range. The conservation plot is at Kalsi, Dehradun Range



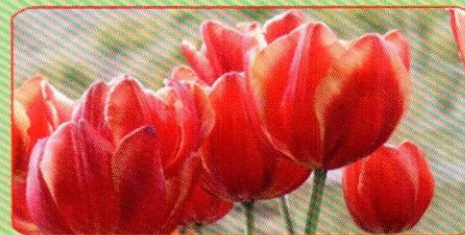
**06. Carallia integerrima:** It is a rare species found along river site in marshy areas in Haridwar. The conservation plot is at Gola tapad in Dehradun Range



**07. Ashtavarga:** It consists of 8 rare herbs found at high altitude. It is being established at Mana van panchayat Chamoli; Harkot Van panchayat Pithoragarh, and at Deoban, in Dehradun range



**08. Buddh Vatika:** Established in Haldwani, showcasing 13 Species of different trees and their place at different stages in life of Buddha .



**09. Tulip Garden:** Tulip gardens are being established in Haldwani & Pithoragarh ranges after successful field trial.

BUDDH VATIKA DASHMOOL GARDEN ZODIAC SIGN & ASTROLOGY JURASSIC GARDEN CHHARAT VATIKA SARV DHARMAVATIKA CLIMATE CHANGE YARSAGUMBA

MIYAWAKI PLANTATION ANR SAL LANDSLIDE TREATMENT ABIES PINDROW SPECIES MIGRATION FLYING SQUIRREL SEED PLOTS STATISTICAL PLOTS

Uttarakhand Forest Research Institute



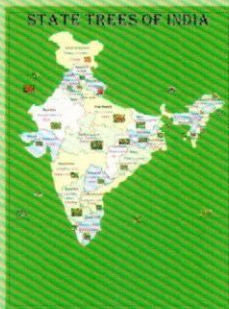
**10. Dashmool Garden:** Dashmool garden has been established in Lakluan range in an area of 1 ha. All 10 constituent species of Dashmool i.e. 5 trees & 5 shrubs has been planted in the garden.



**11. Conservation of biodiversity based on Zodiac sign & astrology:** Raashi Vriksh Vaatika and Nav Graha Vaatika have been established in Haldwani range, which attempt to conserve biodiversity by linking it to astrology.



**12. Jurassic Garden:** Vegetation found in the Jurassic area – Ginkgo, conifers, Fern, Moss, bryophytes, cycads, are being conserved in 0.3 hectare area.



**13. Bharat vitika:** Established in Haldwani, showing all State tree of different States



**14. Sarv DharmVaatika :** Established in Haldwani, in which various historical trees of religious importance, are being propagated by seed/vegetative propagation method, apart from traditional trees important to various religions

### Other Projects



**01 Climate change experiments:** To study the impact of climate change on the life cycle of plants, Phenology of R.ellipticus is being studied in Kalika and Phenology of R.aboreum is being studied in Gaja range, Nainital.



**02. Yarsagumba (Ophiocordyceps sinensis):** Studies are being conducted on socio-ecological and policy/ regulatory aspects of Kira jadi extraction in State .



**03. Miyawaki Plantation :** Miyawaki method of plantation, is being experimented in Haldwani & Kalika range to restore the natural forest and also to have a comparative analysis of different methods of restoration of natural forest.

MIYAWAKI PLANTATION | ATR SAL LANDSLIDE TREATMENT | ABIES PINDROW | SPECIES MIGRATION | FLYING SQUIRREL | SEED PLOTS | STATISTICAL PLOTS

Uttarakhand Forest Research Institute



**04. Assisted Natural Regeneration of Sal:** It was initiated in Shyampur in an area of 10 ha. The aim of the project is to study the contribution and impact of Sal associates in the regeneration of Sal.



**05. Landslide Treatment:** This was started in Khurpatal in Gaja range in 0.5ha area to check the land slide occurrence by use of vegetative methods.



**06. Natural regeneration of Abies pindrow and Abies spectabilis:** This project has been initiated in Gopeshwar to study the status of natural regeneration in Abies pindrow. and of Abies spectabilis in Munsyari



**07. Species migration:** Project to study species migration have been initiated in 6 hectare area of LIP in Gopeshwar range.



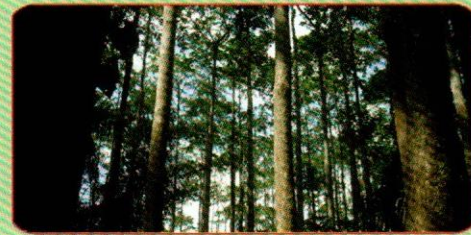
**08. Flying Squirrel:** Project to study habitat distribution, threat and conservation strategy of different species found in State



**09**

**SEED PLOTS**

There are 238 Seed Plots of 65 species, 569 Seed Stands of 44 species and 32 Seed Production Area of 15 species



**10.**

**STATISTICAL PLOTS**

There are 442 Sample Plots, 33 Linear Increment Plots, 31 Tree Increment Plots and 2 Continuous Inventory Plots.

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BIODIVERSITY PLOTS

HIGH ALTITUDE RET

PRESERVATION PLOTS

GINKGO BILOBA

OLEA CUSPIDATA CARALIA INTEGRIRIMA

ASHTAVARGA

TULIP GARDEN

BUDDH VATIKA DASHMOOL GARDEN

ZODIAC SIGN & ASTROLOGY

JURASSIC GARDEN

CHARAT VITIKA SARV DHARMAVATIKA

CLIMATE CHANGE YARSAGUMBA

MIYAWAKI PLANTATION ANR SAL

LANDSLIDE TREATMENT

ABIES PINDROW

SPECIES MIGRATION FLYING SQUIRREL

SEED PLOTS STATISTICAL PLOTS

Uttarakhand Forest Research Institute