



Local Independent Administrative Agency  
Hokkaido Research Organization

# OUTLINE



## Forestry Research Institute

Forest Research Department

Hokkaido Research Organization



## All researches are for Hokkaido

Hokkaido Research Organization (HRO) was established after the integration of a wide range of prefectural research institutes involved in agriculture, fisheries, forestry, industrial technology, the environment and geology, and architecture, with the aim of improving the lives of Hokkaido citizens and promoting industries in Hokkaido.

Among the above-mentioned institutes, the Forest Research Department, which consists of the Forestry Research Institute (in Bibai City) and the Forest Products Research Institute (in Asahikawa City), conducts extensive research and technical support for forests and forestry, forest products industry and its relevant fields.

The Forestry Research Institute proceeds with research in cooperation with administrative agencies, forest owners, corporations, and relevant businesses. The research achievements accomplished by the Institute, which have been disseminated through presentations and seminars by lecturers of the Institute and in publications, as well as by guidance organizations in forestry extension, have been utilized in



## History

1957	Established as Koshunai Sub Station of the Iwamizawa Prefectural Forest Office
1961	Hokkaido Koshunai Forest Tree Breeding Station was established.
1964	Renamed Hokkaido Forestry Research Institute
1966	Donan Research Test Station was established. (Renamed Donan Station in 1975)
1967	Doto Research Test Station was established. (Renamed Doto Station in 1975)
1970	Dohoku Research Test Station was established. (Renamed Dohoku Station in 1975)
2010	Hokkaido Research Organization (local independent administrative agency) was established after the integration of 22 prefectural research institutes. The name was changed to Forestry Research Institute, Forest Research Department.



## Propulsive categories of research

Forestry Research Institute is conducting researches based on 2 categories

### a Sound development of forestry and forest products industries by cyclical use of forest resources

- Research and development for suitable management of forest resources and optimization of production and distribution of wood
- Research and development for improving technical capabilities of timber industry
- Technological development for utilization and stable supply of renewable energy

### b Sustainable exertion of multifaceted functions of forests

- Research and development for exertion of multifaceted functions of forest and utilization of trees and minor forest products
- Research and development of regional system to maintain and revitalize regional community
- Development of emergency measures and reconstruction measures after a disaster
- Disaster damage reduction and development of disaster prevention measures





# Facilities



① Headquarters



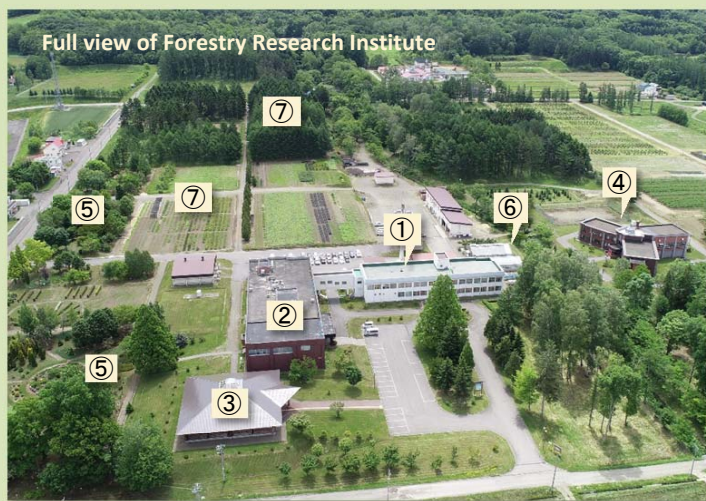
② Laboratory and training building



③ Greenery information center



④ Dormitory for trainees



Full view of Forestry Research Institute



⑤ Ornamental tree exhibition garden



⑥ Greenhouse

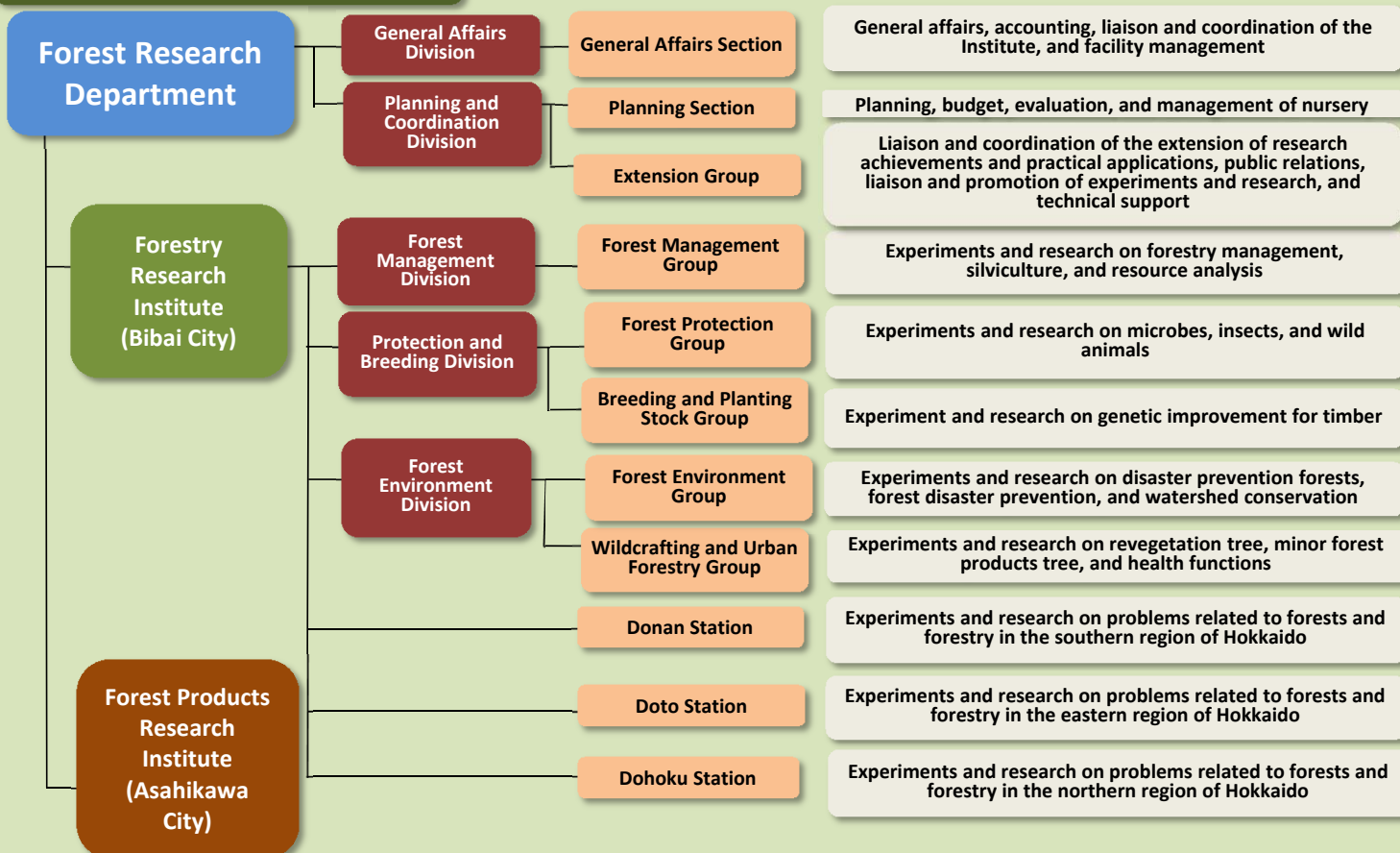


⑦ Nursery and exhibition forest



Experimental forest

# Organization





# Researches by Forestry Research Institute

## Researches for sound development of forestry and forest products industries by cyclical use of forest resources

We are engaging in various researches by utilizing advanced technology, like remote sensing by a UAV and information and communication technology. Researches involve efficient production technique of superior seedlings for steady reforestation, upgrading of management methods for planted and natural forests, development of forest practices enabling avoidance of biotic and abiotic damages, and constructing production and distribution system for optimization of supply chain from stable supply of timber to woody products.



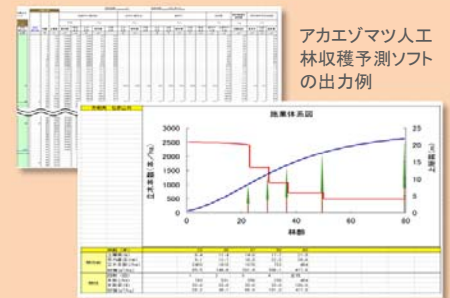
### Developing acquisition technique of forest resource information

We are developing technologies for efficient acquisition of forest resource information like stocking volume by using UAV.



### Development of technologies for mechanization and labor load reduction in re/afforestation

We are engaging in research on efficient and light labor load re/afforestation system by mechanization.



### Technologies for the silviculture of artificial forests

We are engaged in research on technologies involved in the silviculture and yield estimation of planted Japanese larch, Todo (Sakhalin) fir, Sakhalin spruce and Japanese cedar stands.



### Development of excellent cultivars

We tackle the development of forestry trees that have excellent genetic traits in terms of growth rate, wood quality and straightness.



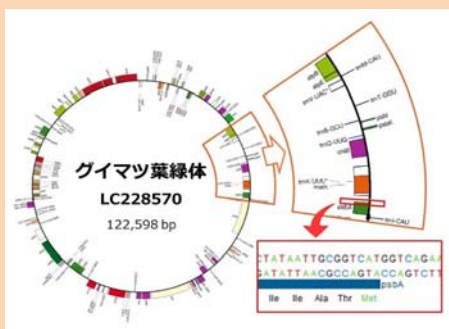
### Technologies involved in the production of seedlings in containers

We proceed with research on a production method of seedlings in containers including mechanization and labor-saving trends as well as an afforestation system.



### Effective utilization of woody biomass

We conduct research on an effective cyclic usage system for woody biomass and an appropriate collection method for the region.



### Clarification of genetic information for forest tree improvements

We perform research on genomics of Sakhalin fir and larches.



### Research on forest damage caused by insects

We perform research on the biology and control of forest insects such as larch bark beetle.



### Research on forest damage caused by sika deer

We perform research to estimate the extent of damage and to protect trees.



## Researches for sustainable exertion of multifaceted functions of forests

We are developing technologies for creation of disaster prevention forests and environmental forests, forest watershed management technologies that takes into consideration soil and water conservation and biodiversity, and utilization of health and recreation functions of forests. We are also tackling selection, propagation, management, and utilization technologies of minor forest products trees.



### Conservation of river water quality

We conduct research on the relationship between the forest watershed protection function and silviculture.



### Clarification of the functions served by inland windbreak forests and the development of technologies for the regeneration of them

We perform research to clarify the yield-increase effect of inland windbreak forests, and to develop technologies for the regeneration of inland windbreak forests.



### Development of prevention and damage control techniques of disaster caused by driftwood

We are conducting research on estimation of the amount of driftwood and controlling the driftwood outflow.



### Construction of technologies for windthrow risk management

We perform technological development reducing windthrow damage in planted forests.



### Development of vegetation restoration method on landslide slopes

We are conducting research on rapid vegetation recovery method on landslide slopes caused by Hokkaido Eastern Iburu Earthquake.



### Development of educational and welfare utilization techniques of forests

We perform research on education on forests, forestry, and wood, and forest utilization by disabled people.



### Retention experiment for plantation forestry (REFRESH)

We compare the effect of retaining some trees at harvest (three levels of dispersed retention and an aggregated retention) on biodiversity and soil and water conservation functions.



### Development of technologies for clonal proliferation

We address the development of technologies for clonal proliferation to apply to the breeding of new cultivars, the conservation of rare botanical species and the domestication of wild plants.



### Improving greenery environment of cities

We perform research on utilization of multiple use of trees (scenery, production of biomass, and suppression of rising temperature) in cities.

## Technical support Please take advantage of our services.

### Joint research

We assist private businesses, universities, and corporations to conduct their research work. **(Paid service)**

### Contracted research

We conduct data analyses based on field surveys or existing documents.

[Service representative] Planning Section, Planning and Coordination Division

### Requested review

We evaluate the actual weight of seeds and their effectiveness, and carry out other examinations that can be performed at this institute. **(Paid service)**

### Technical guidance

We will dispatch our staff members to provide technical guidance regarding forests, forestry and greenery. **(Actual expenses to be paid)**

### Dispatch of lecturers

We will provide advice from the perspective of a specialist committee member or advisor, and make presentations or deliver lectures at workshops and seminars. **(Actual expenses to be paid)**

### Technical counseling

We will provide answers or advice concerning your questions about forests, forestry, and greenery. **(Free service)**

### Requested writing

We will write articles regarding our research achievements and expertise. **(On consultation)**

### Support corresponding to issues

To enhance the effectiveness of our technical guidance, we perform simple examinations, analyses, and evaluation on a short-time basis. **(Paid service)**

### Facilities for training

Conference rooms and accommodations are available for training sessions aimed to acquire knowledge and perform practical operations concerning surveys and research conducted on forests, forestry, and greenery. **(Paid service)**

### Intellectual property rights

Intellectual property rights held by the Forestry Research Institute are available. The Hokkaido Research Organization is in charge of the contracts related to these affairs. **(Paid service)**

### Library

Data and documents at our library are available to visitors. **(Free service)**

[Service representative] Extension Group, Planning and Coordination Division

### Facility uses

Large forestry machines owned by the Forestry Research Institute are available for rent. **(Paid service)**

[Service representative] General Affairs Section, General Affairs Division

## Intellectual properties

Propagation method of larches

Improving nursery practice by rooted micro cutting

Patent No. 6896252



largely grown seedlings controlled by day length and air temperature; 70 scions can be taken from a seedlings for cuttings



# Extension of research achievements

## Periodicals (website version)

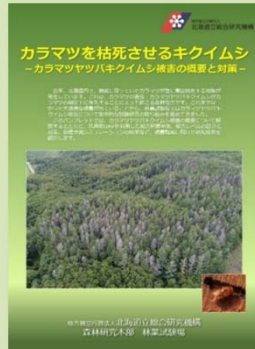
\* Bulletin of the Hokkaido Forestry Research Institute and Green Topics are also published as a booklet.

Bulletin of the Hokkaido Forestry Research Institute -----	Yearly
Annual Report by the Hokkaido Forestry Research Institute -----	Yearly
Koshunai Quarterly Report -----	Quarterly
Green Topics -----	Biannually

## Published books and pamphlets (in Japanese)



Nursery practice and carrying and planting system of container seedlings of Japanese larch



Bark beetles which attack Japanese larch



Mitigating tsunami damage caused by coastal disaster prevention forests

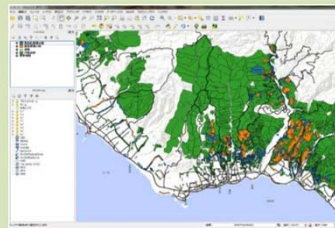


Forest management manual for planted Sakhalin spruce stands

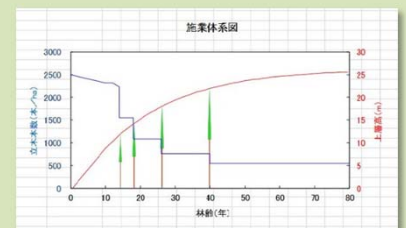
Please visit our website to see other publications than the above. These can be downloaded.

## Supporting Software

Supporting tool for consolidation of forest practices  
 Software for timber harvest forecast of planted Japanese larch stands  
 Software for timber harvest forecast of



Results by supporting tool for consolidation of forest practices



Results by software for timber harvest forecast of planted Japanese larch stands

Please visit our website to see other publications than the above. These can be

## Exhibition Facility (Greenery information center)

Information on forests and forestry, as well as research achievements are exhibited in this center. Opening hours: 9:00 to 17:00  
 Days closed: Saturday, Sunday, national holidays, and winter (Nov. through Mar.)  
 Admission fee: Free



Exhibition in Greenery information center

## Events

Events are held to disseminate research achievements and to promote understanding of forestry, forests, and trees



Presentation of afforestation achievements in Hokkaido (Forest Improvement Section)

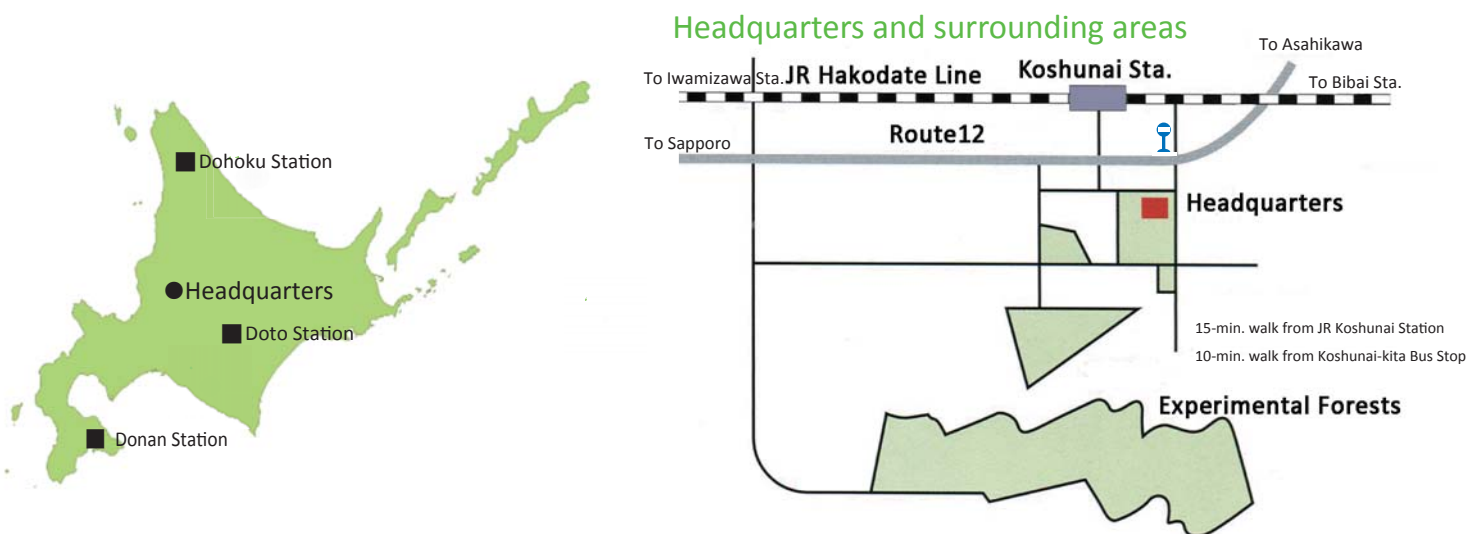


Green festival held during the summer vacation



Seminar on forest management

## Locations of headquarters and stations



■ Donan Station  
Kikyo-cho 372-2, Hakodate  
Hokkaido 041-0801  
Tel./Fax: +81-138-47-1024



■ Doto Station  
c/o Animal research center  
Shintoku-nishi 5sen, Shintoku, Kamikawa-gun  
Hokkaido 081-0038  
Tel./Fax: +81-156-64-5434



■ Dohoku Station  
Homare 300, Nakagawa, Nakagawa-gun  
Hokkaido 098-2805  
Tel./Fax: +81-1656-7-2164

Website  
<http://www.hro.or.jp/fri.html>

- Basic information: Information on the outline and history of the Institute, as well as on access and inquiry methods is provided.
- Organization: Information on research contents by groups is introduced.
- Research and development: Our major research achievements and issues currently being studied are covered.
- Technical support: Information on requested examinations, equipment usage methods and Technical counseling services is provided.
- Public relations: Information on periodicals, pamphlets, seminars, and events is offered.



## Forestry Research Institute

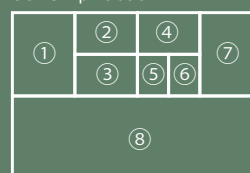
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### Cover photos



- ① Seed orchard of Japanese larch
- ② Forests after retention logging
- ③ Photographing by a drone
- ④ Clonal proliferation of cork trees
- ⑤ Female White-backed Woodpecker
- ⑥ Egg gallery and larval mines of bark beetle
- ⑦ Landslides taken with a drone
- ⑧ Forestry Research Institute