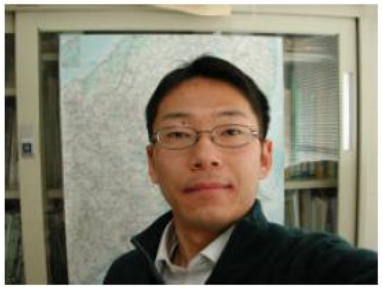
Laboratories and Faculties

Forest Ecology and Silviculture Lab

(Prof.Tatsuhiro Ohkubo, Assoc. Prof. Mineaki Aizawa)



Forest Ecology aims **to understand the life of trees and forests in global ecosystems, and their interaction with other organisms and the environment.** Silviculture is applied forest ecology; the art and science of producing and tending a forest stand. The two disciplines together tackle new topics and problems, such as forest fragmentation, degradation, and restoration, and loss of forest biodiversity, from both local and global perspectives. The main research topics and sites are conservation of fragmented forests for restoring regional forest ecosystem in temperate beech **forests in Tochigi and Yamagata, Japan, tropical rain forests in Sarawak, Malaysia and tropical montane forests in northern Thailand.**

Wildlife Management Lab
(Prof. Masaaki Koganesawa (University Forest))

The main specialty is **management of larger mammals, especially the black bear, sika deer, Japanese monkeys, and Japanese serow, and conservation of birds of prey living in forest ecosystem in Nikko National Park**, Tochigi Prefecture, Japan.

Forest Policy and Economics Lab
(Prof. Miho Yamamoto)

We specialize in all aspects of **social science related to forests and forestry.** Students learn economics, politics and historical science as tools of analysis, and also improve their communication skills through field work.

Forest Planning and Mensuration Lab (Assoc. Prof. Keigo Matsue)

Our laboratories' recent research includes forest research methods, forest growth modeling, forest planning, practical application of GIS (Geographic Information System) for the forest management, and monitoring changes in forest resources applying remote sensing techniques.

Forest Engineering Lab
(Prof.Toshiaki Tasaka, Assoc. Prof. Kazuhiro Aruga)

The aim of the Forest Engineering Laboratory is to develop engineering and technical solutions that promote sustainable forest management to meet economic, environmental, and social needs. Our studies include development of forest machinery, planning techniques for forestry operations such as timber harvesting and forest biomass harvesting, and forest road design techniques.

Forest Hydrology and Erosion Control Lab (Prof.Yasuhiro Shuin)

Our research topics are the evaluation of :
1) the effects of forests on the hydrologic cycle,
2) the effects of forests on sediment movement,
3) countermeasures to prevent or reduce sediment disasters.

Forest Product Lab (Prof.Shinso Yokota)

The Forest Products Laboratory has been established to utilize forest products, including wood and woody biomass. Our research programs are: 1) Formation and structure of reaction wood; 2) Degradation of lignin by white-rot fungi; 3) Chemical and biochemical defense mechanism of trees against pathogens; 4) Tissue culture of medicinal trees and fast-growing tree species in tropical regions; 5) Sawdust-based cultivation of some mushrooms using unutilized wood resources; 6) Conversion of woody biomass to bioenergy or biomaterials.

Wood Material Science Lab

(Prof.Kazuya Iizuka (University Forest), Assoc. Prof. Futoshi Ishiguri)

Wood Material Science is one of two laboratories involved in forest products research in the Department of Forest Science. Many research programs are collaborative with the Forest Products Laboratory. Our laboratory has the following research programs:

1) The relationship between tree growth and wood quality;
2) Wood quality of plantation wood including fast-growing tree species in tropical regions;
3) The relationship between the anatomical and mechanical properties of wood;
4) Physical and chemical changes in wood by high-temperature drying;
5) Discoloration mechanism of heartwood in Cryptomeria japonica;
6) Genetic conservation and management of coppice-forest populations.