

Collaborative Research Activities  
within Asian University Forests:  
Interim Report by Research Group 3  
(Sustainable Management)

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# Acknowledgements

- RG3 core members:
  - [UTokyo] Dr. Toshiaki Owari
  - [SNU] Prof. Pil Sun Park
  - [NTU] Prof. Biing T. Guan
  - [KU] Dr. Kobsak Wanthonchai
  - [UMS] Prof. Phua Mui How
  - [HU] Prof. Wenxing Long
  - [UGM] Dr. Widiyatno
  - [USJP] Dr. Priyan Perera
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日本学術振興会

## Research Group 3 (Sustainable Management)

- Anthropogenic interventions in Asian forests
- Long-term geospatial and management data
- Ecosystem services associated with social, economic and cultural values

# Topics

- Past activities (2019 – 2020)
  - Information sharing
  - Symposium presentations
  - Publications
  - Collaborative research
- Activity plan (2021 –)
  - Symposium presentations
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# List of major long-term experimental plots across core universities (as of July 2019)

University	Place	Forest type	Species	Number of plots	Year of establishment	Measurement	Tree ID	Tree position	Interval	Note
UTokyo	Chiba	Plantation forest	<i>Cryptomeria japonica</i> <i>Chamaecyparis obtusa</i>	10	1916, 1925, 1940	DBH, Height	Yes	No	5 years	Yoshida Plot Planted in 1900-1905
UTokyo	Hokkaido	Natural forest	Mixed conifer-broadleaved <i>Abies sachalinensis</i> <i>Picea jezoensis</i> <i>Tilia japonica</i> <i>Acer pictum</i> Other spp	96	1959-2006	Trees (DBH >= 5 cm) Species DBH Stem quality Juveniles (H >= 1.3 m, DBH < 5 cm) Number of trees by species	Yes	Yes (20 plots)	5 years	Managed under selection system Ingrowth depends on natural regeneration
UTokyo	Chichibu	Plantation forest	<i>Cryptomeria japonica</i> <i>Chamaecyparis obtusa</i> <i>Chamaecyparis pisifera</i> <i>Larix kaempferi</i>	32	1934-1970	DBH, Height (sample tree)	Yes	No	5 years	Thinning experiments Planted in 1913-1930
NTU	Xitou	Plantation forest	<i>Cryptomeria japonica</i> <i>Chamaecyparis formosensis</i> <i>Chamaecyparis obtusa</i> var. <i>formosana</i> <i>Michelia formosana</i> <i>Calocedrus formosana</i> <i>Cinnamomum camphora</i>	25	1961	DBH, Height	Yes	No	5 years	Shade tolerance study <i>Cryptomeria japonica</i> is advance growth Planted in 1961
UMS	Long Mio	Lower/Upper montane forest	Old-growth: <i>Lithocarpus</i> spp. (Fagaceae), <i>Litsea</i> spp. (Lauraceae), and <i>Syzygium</i> spp. (Myrtaceae). Disturbed: <i>Macaranga</i> spp. (Euphorbiaceae) and <i>Croton</i> spp. (Euphorbiaceae)	45	2011-2014	DBH, Height, Species (DBH≥10cm), Tree position, Crown measurement	Yes	Yes	2-7 years	Plots established for the project between UMS, UTokyo and FFPRI (2011-2015). Remeasured in 2017- 2018 (Collaboration between UMS & UTokyo).
SNU	Baekwoon	Plantation forest	<i>Cryptomeria japonica</i>	3	1918	Species, DBH	Yes	No	None	Site 6-16
SNU	Baekwoon	Plantation forest	<i>Abies firma</i>	3	1921	Species, DBH	Yes	No	None	Site 6-17
SNU	Baekwoon	Plantation forest	<i>Pinus koraiensis</i>	2	1919	Species, DBH	Yes	No	None	Site 6-21
SNU	Jiri	Natural forest	<i>Pinus densiflora</i>	1	2005	Species, DBH	Yes	Yes	5 years	
SNU	Jiri	Natural forest	<i>Quercus mongolica</i>	1	2005	Species, DBH	Yes	Yes	5 years	
SNU	Jiri	Natural forest	<i>Abies koreana</i>	1	2005	Species, DBH	Yes	Yes	5 years	
UGM	Cepu, Central Java	Plantation forest (clonal trial)	<i>Tectona grandis</i>	4	1997	DBH, Height, seed production	Yes	No	1 year	Collaboration with Research center PERHUTANI
UGM	Gunung Merapi National Park, Yogyakarta	Natural Forest after Mount Merapi Eruption	<i>Acacia decurrens</i> (as invasive species after eruption)	5	2015	DBH, Height, gummosis symptom,	Yes	Yes	2 years	Collaboration with Gunung Merapi National Park
UGM	Forest Research Station WANAGAMA, Yogyakarta	Plantation forest (clonal trial)	<i>Tectona grandis</i>	1	2010	DBH, Height	Yes	No	1 year	Response of a clonal teak plantation to thinning and pruning in Java, Indonesia

Contributed by UTokyo, NTU, SNU, UMS, and UGM.  
This list can be downloaded from the JSPS-C2C Website.



# UTFEEP

Database for the University of Tokyo Forests Experimental  
and Ecological forest Plots

東京大学演習林 毎木調査試験地データベース

[About UTFEEP](#)[Search Data](#)[Notice of data usage](#)[Contact](#)

## About UTFEEP:

UTFEEP is an abbreviation for "Database for the University of Tokyo Forests Experimental and Ecological forest Plots". The database includes metadata and measurement data of experimental and ecological forest plots (or long-term research plots) located in The University of Tokyo Forests (UTF).

UTF consists of seven branch forests, in which baseline data has continuously been collected for research and education. At UTF, the Forest Growth Survey Division, the Committee on Fundamental Data organizes online publication of metadata (each plot and measurement), measurement data and related materials such as survey notes and maps.

Here, forest experimental and ecological plots refer to those plots having tree census data such as DBH (diameter at breast

# 1<sup>st</sup> International Symposium of Long-term Forest Monitoring Research in Asia, China, Nov 2019



Photo by Dr. Toyama



# Presentations in the RG3 Session (1)

- Long-term monitoring sites of Seoul National University Forests (by Park)
- Academic utilization of various records in the University of Tokyo Chiba Forest (by Toyama)
- Growth prediction variability according to observation period of long-term data in old Sugi (*Cryptomeria japonica*) planted stands (by Hiroshima)
- Long-term growth trends of *Cryptomeria japonica* plantations at The University of Tokyo Forests and National Taiwan University Experimental Forest (by Owari)
- An experiment of mixed deciduous-coniferous forests to rehabilitate *Cryptomeria japonica* plantations (by Wang)

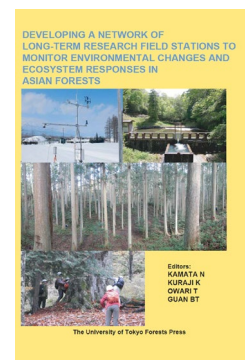
## Presentations in the RG3 Session (2)

- Enrichment planting increases genetic diversity of secondary lowland *Dipterocarp* forests In Indonesia (by Widiyatno)
- Genomic diversity of *Acacia mangium* and *Acacia auriculiformis* natural germplasms using SNP markers (by Maid)
- Prescribed fire behavior and management in Khuan Khreng peat forest, Nakhon Si Thammarat Province, Thailand (by Wanthongchai)
- Ensuring the sustainability of Sri Lanka's wood-based industries for a circular bio-economy (by Perera)

# Excursion in Diaoluoshan Nature Reserve, Hainan

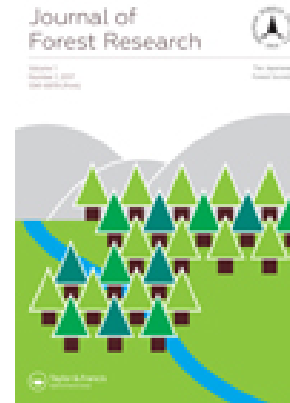


## Book publication (RG3)



- Long-term growth records of *Cryptomeria japonica* plantations at the University of Tokyo Forests, Japan (by Owari et al.)
- Long-term growth records of *Cryptomeria japonica* plantations at Taiwan National University Experimental Forests, Taiwan (by Cheng et al.)
- Long-term growth records of *Cryptomeria japonica* plantations at Nambu University Forest, Seoul National University, Korea (by Jung et al.)
- Dendrochronological cross-dating assessment and evidence for climate influences on tree growth at highland plantations in Chiang Mai Province, Thailand (by Lumyai et al.)
- Use of remote sensing to support forest resources monitoring in tropical forests (by Wong et al.)

## JFR Special Feature (RG3)



- Modeling stand basal area growth of *Cryptomeria japonica* D. Don under different planting densities in Taiwan (by Lam & Guan)
- Long observation period improves growth prediction in old Sugi (*Cryptomeria japonica*) forest plantations (by Hiroshima, Toyama, Suzuki, Owari, Nakajima & Ishibashi)
- Predicting individual tree growth of high-value timber species in mixed conifer-broadleaf forests in northern Japan using long-term forest measurement data (by Moe & Owari)
- Evaluating relationships of standing stock, LAI and NDVI at a subtropical reforestation site in southern Taiwan using field and satellite data (by Wei, Chen, Chen, Yu, Cheng, Lai, Chiang, Hong, Tsai & Wang)

# Collaborative Research Activities

- Sugi (*Cryptomeria japonica*) Integrated Stand Dynamics System (Lam, Guan (NTU), Owari, Toyama (UTokyo))
- Reconstruction of Sugi stand growth using aerial photos (Owari (UTokyo), Cheng, Tsao (NTU), Park (SNU))
- Wood density of tropical forests (Phua (UMS), Tsuyuki, Hiroshima (UTokyo))
- Postgraduate Summer School in Sabah (Phua (UMS), SNU)
- Tropical tree biodiversity analysis (Phua (UMS), Lam (NTU))

# Research Meeting at NTUEF, Taiwan, Oct 2019



Photo by Dr. Toyama

# Field Work at SNU Nambu Forest, Korea, Feb 2020





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# Symposium Presentation & Publication Plan

## Presentations

- 2nd & 3rd International Symposium of Long-term Forest Monitoring Research in Asia (UGM, USJP)
- 11th SAUFC (NTU)

## Publications

- Special Issue in *Remote Sensing?* (Topic Editor: Owari)

# Collaborative Research Activity Plan

- Field work and research meeting on Sugi plantation (UTokyo, NTU, SNU)
- Workshop and field visit/excursion (UMS, UTokyo)
- Forest Restoration and carbon offset development (USJP)
- Mangrove Conservation and Restoration Project and the proposed Mangrove Resource Center (USJP)
- Growth and yield analysis of Teak plantations (?)
- Preparatory research meeting (UFES, UTokyo)