

Summary of Research Group Session 3: Management (RG3)

26th June, 2018
Xitou Experimental Forest, NTU

Toshiaki OWARI (UTokyo)

Using historical management records and past aerial photos to reconstruct long-term growth of *Cryptomeria japonica* plantations

Summary

- Introduction of the new research project
- Using historical data such as past aerial photos, trying to reconstruct past growth of Sugi
- Data introduction of each University forest joining in this research
- Aerial photo investigation

- (Aerial photos exist during this 40 yrs in Taiwan. Obtained by NTU)

Takuya HIROSHIMA (UTokyo)

Local growth variations in Sugi plantations

Summary

- In UTCBF plot, 33 Sugi cultivars were planted in 1931 in line
- Height growth difference between 15 cultivars was examined, considering slope location
- Cultivars were classified into several groups with close growth patterns

- (Q. Difference of tree shape? A. Yes.)
- (Q. Competition between lines? A. Yes, especially DBH is severely affected)

Keisuke TOYAMA (UTokyo)

Long-term Sugi growth at The Univ. of Tokyo Chiba Forest

Summary

- UTCBF Sugi & Hinoki permanent plots mainly since 1916
- Growth (DBH, H, V) has not been declined yet
- This suggestion should be examined carefully, considering such as lack of data in previous studies and high stand densities in UTCBF

Jong Bin JUNG (SNU)

Radial growth response of *Cryptomeria japonica* to air temperature and precipitation in SNU Nambu University Forest, Korea

Summary

- Sugi in Korea: mainly in warmer southern part of Korea with enough precipitation. Global warming may expand the planting range
- 1958~: Records by SNU
- Core extraction and dendrochronological examination
- Monthly climate variables: temperature, precipitation and 3 drought indices
- The effects of precipitation, temperature and drought have large seasonality

Kritsadapan PALAKIT (KU)

A study on annual increment of Teaks in plantations for supporting forest management goals

Summary

- Database system construction for presenting teak management plan
- Datasets incl. growth inventory and human management records
- Search for optimal alternatives from 14 alternative management regimes, for each management unit using LP
- (Q. Sustainable? Decrease of volume means resource shortage?)

Wilson V.C. WONG (UMS)

Estimation of aboveground biomass in forest rehabilitation area using Landsat time-series

Summary

- Landsat time-series data applied for INIKEA forest rehabilitation project
- Introduction of INIKEA project and survey there incl. above ground biomass (AGB)
- Estimation of AGB from LANDSAT of two timings: quantification and evaluation of AGB dynamics
- Some problems such as saturation exist

(Q. Landsat cannot catch the qualitative change of planted forest?)

Chih-Hsin CHENG (NTU)

Stand development and annual aboveground net primary production with Japanese Cedar and Taiwania Plantations in Xitou

Summary

- Introduction of plantation in Taiwan. Sugi: elder stand is the majority
- Long-term experimental plots data (problem: not large area, less management)
- DBH & net C are still increasing. Self thinning has occurred
- Individual tree growth: size effect or competition effect?
- Ecosystem C pool, comparison of Japanese vs Taiwanese species

Chieh-Ting WANG (NTU)

Characterization of growth in a *Taiwania cryptomerioides* clonal seed orchard in Xitou, Taiwan

Summary

- *Taiwania cryptomerioides* : fossil species and relict plant of the glacier period
- Habitat: central mountain of Taiwan. Plantation since 1909 and totally 11,000ha
- Individual *Taiwania* can be gigantic (King of conifers)
- Difficulty in seed collection: clonal seed orchard (1966~)
- Measurement has also been conducted, showing good growth compared to seedling plantation (note: density is low)

Tzeng Yih LAM (NTU)

A close-range photogrammetry system with spherical panorama for sampling and tree measurement

Summary

- Spherical panorama photo: synthesized from 60 photos
- Reasonable potential method for horizontal point sampling and sample tree measurement
- Basal area factor corresponds to some pixels of this panorama: easy to convert
- Stereoscopy Method(STEREO) can reveal real length(distance, DBH).