Production and nutrient circulation of dry dipterocarp forests in Thailand.

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ABSTRACT

Study on biomass of various community types of Dry Dipterocarp Forest was carried out by using the field data of tree measurements conducted by the research group on "Quantitative Studies of the Seasonal Tropical Forest Vegetation in Thailand" which were already reported by Sukwong et al (1976,1977) including the unpublished data of the same research project. The biomass estimation was performed by using the empirical formulae previously reported by Ogino et al (1967). Each portion of trees in stands (stem, branch, and leaf) and total above ground biomass were separately calculated for each community type followed the community arrangement studied by Sarayudh Bunyavejchewin (1979)

Total aboveground biomass of all community types of 52 stands of Dry Dipterocarp Forest ranges between 28.46 and 260.51 ton/ha with an average of 126.11 ± 52.19 ton/ha. It is also estimated that Dry Dipterocarp Forest in Thailand would be comprised of 87.85 ± 34.97, 36.98 ± 17.66 and 1.28 ± 0.28 ton/ha of average biomass in stem, branch and leaf respectively.

Among six community types of Dry Dipterocarp Forest, the Pine-Dipterocarp community contains the largest amount of biomass both terms of total aboveground and each portion community type (others). Other of biomass is found in the unclassified community types might be arranged orderly according to the magnitude of the respective amount of total aboveground, stem, branch, and leaf biomass as follows *: Dipterocarp-obtusifolius-Shorea obtusa community, Dipterocarpus tuberculatus* community, *Pentacme suavis* community and *Shorea obtusa* community. Within the Pine-Dipterocarp community type, the *Pinus merkusii - Dipterocarpus tuberculatus* sub-community appears to be largest in the amount of total aboveground, stem and branch biomass except leaf biomass is found to be moderate. The largest amount of leaf biomass is found in the *Dipterocarpus obtusifolius-Shorea obtusa-Pinus merkusii* sub-community type. All forms of biomass of the mesic

sub-type of *Pentacae suavis* community are found to be particularly larger than that of the mesic sub-type of *Shorea obtusa* community in contrast to the xeric sub-types of both communities.

The amount of biomass in terms of total aboveground and of each portion of trees of all community types generally follow the similar trend of the magnitude of mean basal area of the stand. It is also found that large amount of the aboveground biomass generally resulted from large amount of every portions of trees in each community type.