SUMMARY

DWI PUJI LESTARI. Spatial Distribution Pattern of Merbau (Intsia spp.) in Primary Forest and Logged Over Area at IUPHHK-HA PT Mamberamo Alasmandiri Area, Papua Province. Under Supervision of TEDDY RUSOLONO and AGUS PRIYONO KARTONO.

Spatial distribution pattern is one of the important characteristic in ecological communities. It can be used for consideration in decisions of managing forest. Merbau was chosen as the object of this research because it has high commercial value and threaten in nature due to intensive logging activity of this species. The purposes of this research were to identify the spatial distribution pattern of merbau in primary forest and logged over area (LOA), to identify the community similarities among primary forest and LOA, to identity the association between merbau species and between merbau to another species, and also comparing the stand structure among primary forest and LOA.

This research was located in IUPHHK-HA PT Mamberamo Alasmandiri area on June-July 2011. It took place in five forest conditions, primary forest, Logged Over Area 15 years, 11 years, 5 years and 2 years. In each location would be placed three line transect, each size 20 x 500 m² divided into 25 sampling units, with dimension of size 20 x 20 m². The first transect location was decided by purposive sampling method considering the accessibility and the representation of environmental factors. Next transect were located systematically in line with the first transect by distance 500 m. All trees that occur in sampling units with minimum diameter 10 cm and the biophysical environmental factors are registered.

Only two species of merbau were found, Intsia bijuga (Colebr.) O. Ktze. and Intsia palembanica Miq. The spatial distribution pattern is counted by Standardized Morisita Index. The distribution pattern of merbau were different among location depend on the biophysical environmental factors. The higher altitude will give clumped pattern of merbau and this species will have positive association with others species. In the lower altitude, merbau will show uniform pattern and their occurrence were independent with others species. It is because the merbau’s seed spread by the river stream and the nutrition of soil were carried out by the surface run off and accumulated in the lower area.

The similarity index of community showed that stand composition in four logged over areas will grow similarly to primary forest’s stand composition. The stand structure in all forest condition showed inverse J-shaped distribution. The value of k and a in the LOA 15 years are high enough and they decrease by reducing of the logging age. It indicated that species density was high at the lower diameter class in which strict competition was occurred.

Key words: merbau, distribution, ecology, association.