

Chalong Sonnim 2006: Plant Community and Utilization in Reclamation Area of Lignite Mine, Mae Mo District, Lampang Province. Master of Science (Sustainable Land Use and Natural Resource Management), Major Field: Sustainable Land Use and Natural Resource Management, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Vipak Jintana, Ph.D. 85 pages.
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This research aimed to investigate plant community characteristics in the reclamation area of lignite mine, Mae Mo District, Lampang Province. Four age-classes of the reclamation areas were selected for the study, namely, 3, 6, 9 and 11 years. Three sample plots of 10x10 m were established in each age-class and nearby natural forest stand. Composition of tree species in each plot was recorded. Diameter at breast height (d.b.h.) and total height (ht) of the trees were measured. Utilization of reclamation areas and opinions of local people towards the reclamation program were surveyed. Representatives from 198 households of 2 adjacent villages were interviewed using a structured questionnaire. The study was conducted from March 2004 to April 2006.

Findings revealed that the reclamation areas at the aged of 3, 6, 9 and 11 years composed of 10, 6, 8 and 6 tree species, respectively. Stand densities of the reclamation areas were 731, 865, 1,166 and 1,467 trees per hectare, respectively. Above ground biomass were estimated at 2.9, 13.1, 54.1 and 20.4 ton per hectare, respectively. The nearby natural forest, on the other hand, 25 tree species with a density of 1,630 trees per hectare and estimated above ground biomass at 20.3 ton per hectare were recorded. *Tectona grandis* was found to be the dominant species of the 3 and 6 years reclamation areas (IVI = 74 and 147, respectively). *Pithecellobium dulce* was dominant in the 9 years reclamation area (IVI = 105) whereas *Cassia siamea* was dominant in the 11 years reclamation area (IVI = 123). In natural stand, *Millettia brandisana* was dominant (IVI = 38). Species diversity assessed by Shannon-Wiener index of the reclamation areas aged of 3, 6, 9 and 11 years was 2.06 whereas in the natural forest the value of 2.88 was calculated. Regarding the utilization of reclamation areas, most of respondents (78%) indicated that they used this area for recreation, 29% used for grazing and 4% for gathering firewood. In general, more than a half (54%) of the respondents agreed upon the reclamation program, whereas 15% disagreed and 31% to be silent. Interestingly, 30% of the respondents indicated that there was a great need of pasture land for grazing animals, whereas 23% needed timber products and 22% preferred natural forest type for tourism.

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