



Research project of counterparts funded at IPB

Name

Counterpart

Title

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B09

Ecological services of transformed ecosystems: the role of ants in different land-use systems in Jambi

Land-use change causes undesirable effects such as biodiversity decline, altered community structure and reduced ecosystem services. Changes in species composition and disrupted trophic interactions between pests and their natural enemies may indicate decreases in ecosystem services. We studied the effect of forest habitat transformation on the community structure of ants, which include major biological control agents. We focused on four types of land use: forest, jungle rubber, rubber plantations and oil palm plantations, around Harapan Forest (Harapan) and Bukit Duabelas National Park (TNBD), Jambi, Indonesia. Each type of land use was replicated four times, with a plot size of 50 m x 50 m at each of the altogether 32 sites.

Ants were collected using hand-collecting in combination with tuna and sugar baiting on three strata i.e. leaf litter, soil and tree. We found 104 ant species from both the Harapan (Fig. 1b) and TNBD (Fig. 1a) landscape. Surprisingly, number of ant species per plot did not exhibit significant differences between land-use types, both in Harapan and TNBD. However, species composition of ants was significantly different among land-use types. Forest and jungle rubber communities are relatively similar to each other (but still different), and distinct from community composition in oilpalm and rubber plantations. We conclude that conversion of remnant forested habitats to plantations would result in a net loss of ant species, even when ant species richness in plantations and forested habitats are similar.

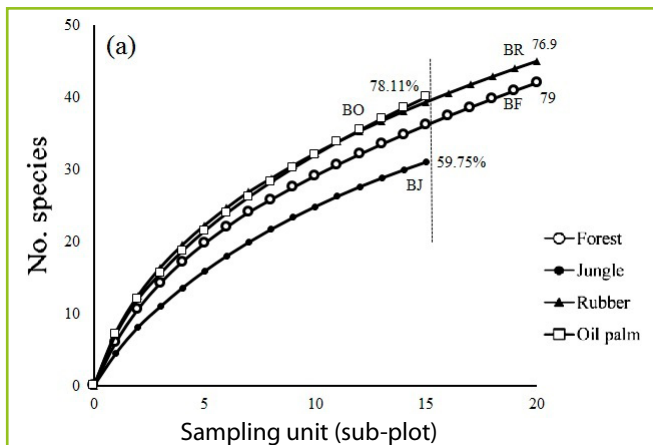


Figure 1. (a) Bukit Duabelas National Park Species accumulation curves of ant species found four land use types within the two study sites, Bukit Duabelas National Park and Harapan Forest. The dashed line indicates ant species richness from 15 sub-plots.

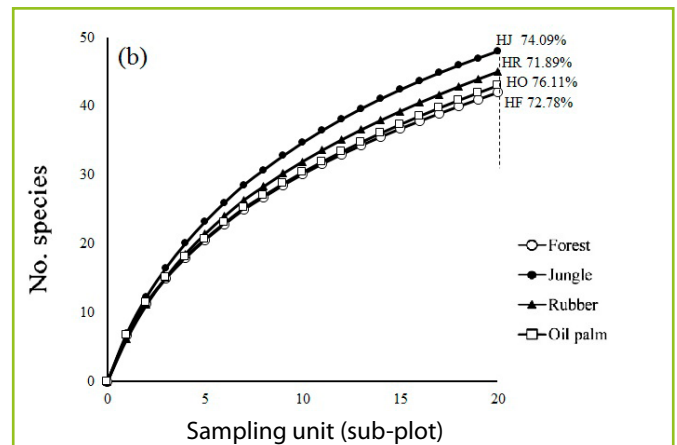


Figure 1. (b) Harapan Forest Species accumulation curves of ant species found four land use types within the two study sites, Bukit Duabelas National Park and Harapan Forest. The dashed line indicates ant species richness from 15 sub-plots. Species accumulation curves of ant species found four land use types within the two study sites, Bukit Duabelas National Park and Harapan Forest. The dashed line indicates ant species richness from 15 sub-plots.