Monitoring the Outcomes of Rehabilitation and Reforestation for Biodiversity Conservation

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Abstract

Even a well-managed rehabilitation area has been performed, the valuation of its success is problematic. The main goals of rehabilitation and reforestation schemes in Indonesia mainly address the problems of land degradation, environmental recovery, and habitat restoration. However, some projects only reported organizational outcomes, such as area planted and labor-days expanded. There has never been a formal scheme that could be used to monitor the progress of rehabilitated sites that would inform us about progressive changes in land cover and their possible implication for biodiversity.

This study is meant to acquire information about a selected group of fauna species to establish a time sequence in understanding habitat development within rehabilitation sites. The occurrence of selected species is their response to vegetative growth (in other words, better land coverage) which provides such complex niches and habitat components required by the species. Information about selected species in this area could function as a baseline for biodiversity data which could be periodically monitored. The study also emphasized the high ecological value of retaining natural land cover patches and the existence of natural forests next to rehabilitation areas. Wildlife observation in forested areas would give information about species present in the area, which could be linked to occupancy possibility in rehabilitation areas based on the theory of connectivity and colonization.

The fauna mostly is omnivores and generalists with a wide range of ecological amplitude. These characteristics seem to be the factors that make them could occupy the rehabilitation sites. However, when they start to occupy the areas is a critical point that indicates their response to habitat change. Most birds found are quite common in open habitats, plantations, secondary forests, and forest edges. The presence of hornbills gives a sign that mature secondary growth is still dispersed. Closeness to humans and the existence of illegal activity (logging and hunting) influence the presence of particular species. Some carnivore species, such as Malayan Sun Bear Helarctos malayanus, Marbled Cat Pardofelis marmorata, and Bornean Bay Cat Pardofelia badia represent sensitivity to humans and disturbances. Since there is still ongoing illegal logging activity in the Sebulu Site and its surroundings, they are likely avoiding the area and looking for safer habitat.