

Impacts of Oil Palm Plantation on Mammal and Herpetofauna Diversity: A Case Study in Riau Province, Indonesia

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Abstract : Expansion of Indonesia oil palm plantations has contributed significantly to the national revenue annually and has been able to absorb millions of workers. Behind all these positive contributions, such expansion was accused as the cause of the decline in wildlife populations such as mammal and herpetofauna. Research was carried out in 8 oil palm plantations in Riau Province of Indonesia from March to April 2016, to determine the impacts of oil palm plantations on mammal and herpetofauna biodiversity. Direct observation was conducted simultaneously equipped with camera traps placed (for mammal) on various land cover types. For mammals' survey, line transect method was used, and for herpetofauna, Visual Encounter Survey (VES) method was used. Landsat imagery was used to interpret land cover types 3 years prior to the establishment of the oil palm plantations. The study revealed that one year before the oil palm plantations was established, most the land covers were comprised of 49.96% rubber plantations, 35.99% secondary forest, 10.17% bare land, 3.03% shrubs and 0.84% mixed dryland farming-shrubs. Based on the number of species found, it was identified that on the average, mammal diversity in 4 of 8 oil palm plantations, showed a decrease by 14.29%-100%, whereas 2 plantations did not experienced any changes in the number of species and one plantation showed an increased in the number of mammal species. The plantations that experienced a reduction in the number of mammal's diversity were previously dominated covered by secondary forest (40%) and rubber plantation (40%), while those experiencing no changes in the number of species were also dominated by secondary forest. The area with an increased number of mammal species was historically dominated by rubber plantation. On the contrary, significant results were shown for herpetofauna, where all study sites showed a sharp increase in the number of herpetofauna species, by 100%-225.00%.

Keywords : herpetofauna, impact, mammal, oil palm plantations

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