学位論文内容の要旨

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学位論文題名

**Wildlife responses to naturally altered and human-modified landscapes in Malaysia and Japan**

（マレーシアならびに日本の自然および人為的景観における野生動物の応答解析）

Growing demand for forestry resources and development have contributed to global forest decline. Natural forests are threatened by timber extraction and conversion into more profitable land-uses (e.g., conifer plantations, palm-oil plantations and other agricultural plantations). The alteration of natural forest habitats has large influences on most forest wildlife species. The responses of wildlife to habitat modification depend on the taxa and group (generalist or specialist) to which they belong. Focusing on a study area encompassing the tropical rainforest of Malaysian Borneo and the boreal forest ecosystem of Northern Japan, this thesis aimed to assess the responses of wildlife to modified landscapes with regard to forestry, land use development and wildlife management systems in the two regions.

**1. Camera-trapping assessment of terrestrial mammals and birds in rehabilitated forest in INIKEA Project Area, Sabah, Malaysian Borneo**

Rehabilitation efforts for degraded forests affected by conventional logging and forest fires (El-Nino 1982–1983) allow for investigations of the responses of terrestrial mammals and birds to rehabilitation practices, e.g., gap-cluster planting, line planting and liberation where enrichment planting was applied. Species listed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species were documented in the study, with 2 listed as critically endangered, 5 endangered, 8 vulnerable and 6 near threatened. No remarkable differences were noted in general forest structure or species richness and composition between areas subjected to rehabilitation treatment and control areas. Provided that major forest components remain after a disturbance, disturbed forest areas should be left to undergo natural recovery.

## 2. Seasonal home range and habitat selection patterns of sika deer (*Cervus Nippo n*) in southern Hokkaido, Japan

In 1980 and 1981, sika deer individuals were reintroduced to southern Hokkaido in an attempt to mitigate deer population declines of a few decades prior. The seasonal responses of sika deer to resource availability and geomorphic factors in southern Hokkaido were assessed. For all deer, the home ranges in winter were larger than those in summer. The results showed variations in habitat selection by the resident deer of Mount Esan and Shiriuchi, as well as migratory deer in Shiriuchi, during summer. Resident deer in Mount Esan and migratory deer in Shiriuchi preferred coniferous forest and forest edge habitats in summer, and resident deer in both Mount Esan and Shiriuchi selected habitats closer to croplands in the summer. Interaction effects revealed that migratory deer selected grassland habitats closer to the forest edge and croplands, revealing a tactic for avoiding humans. Topographic factors appear to be important in habitat selection by all deer. Thus, sika deer habitat selection depends on human interference in summer and topographic factors in the winter.

## 3. Patterns of seasonal habitat selection by sika deer in the largest wetland in Jap an, Kushiro-Shitsugen National Park, Hokkaido

Habitat selection and home range patterns by sika deer in the largest wetland in Japan were assessed. The core area for resident deer was significantly smaller in summer than winter, although the home ranges did not differ significantly between seasons. Conversely, for migratory deer, the core area was smaller in summer than in winter but this difference was statistically insignificant, with summer and winter home ranges being almost comparable. The results revealed that both migratory and resident deer selected coniferous forest, grassland, areas closer to the road, southerly areas and flat habitat in summer. In winter, areas closer to the forest edge and agriculture and farther from roads were important habitats selected by both migratory and resident deer. There was a shift in habitat selection away from the forest edge, closer to roads and southerly areas in summer to these areas being less selected in winter by migratory deer, while resident deer maintained their selections in both seasons except for the distance to agricultural land.