

Prateep Duengkae 2009: Change in Bird Species Assemblages Following Successional Stages in Abandoned Settlement Areas in Thung Yai Naresuan Wildlife Sanctuary, Thailand. Doctor of Philosophy (Forestry), Major Field: Forestry, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Vijak Chimchome, Ph.D. 104 pages.

Change in bird species assemblages following successional stages in abandoned settlement areas was studied in dry evergreen forests (DEF) and abandoned hill tribe settlement villages in Thung Yai Naresuan Wildlife Sanctuary, Thailand. The main objective was to determine the plant and birds' response to abandoned settlement ecosystem. Sixteen of 1-ha permanent plots in the four abandoned settlement areas (ASA) were established for plant community study. Eleven (2- km length) permanent transects were established within the abandoned settlement area and undisturbed DEF for bird surveying. The change on diversity and composition of birds were investigated for consecutively 3 years.

The results showed that the vegetation comprised 210 species with 3,957 individuals of trees diameter at breast height over 4.5 cm. Three groups of plant communities were classified as undisturbed forest, mid-succession and early- succession, with trended to be progressively succession. Considering for all seasons, 245 bird species were recorded during the study period. They were composed of 52 migratory and 193 resident species for all seasons, and 171, 132 and 200 species for 6-8 years old, 10-12 years old and undisturbed forest of ASA and DEF respectively. Similarity and Shanon-Wiener indices had positive relationships with age of abandonment. The sallying insectivore guild showed a significant negative correlation with successional age of habitats. On the other hand, foliage-gleaning and terrestrial frugivore guilds had significant positive correlation with successional age. Bird communities in the vertical layers of both DEF and ASA were classified into three major groups. The DEF supports more species than the ASA. The relationship of resident species with the habitat was defined into 3 groups, open-secondary forest preference species, edge or mutuality habitat preference species and primary or mature forest preference species. The study demonstrated that plant community and bird species had a clear recovery pattern in abandoned sites after removing human settlement. Recommendations are given such as limitation on human disturbances to allow a change for maximum avian diversity to recover.

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Thesis Advisor's signature

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