Population, Habitat Preferential, and Dispersion Pattern of Maleo 
(*Macrocephalon maleo* Sal Muller 1846) due to Nesting Pit Existence 
in Lore Lindu National Park, Donggala Central Sulawesi

By : Laban, Liniko Mekhrada
Advisor : Kartono, Agus Priyono Ir. M. Si.

**ABSTRACT**

Maleo is one of the unique, rare and endemic megapode species in Sulawesi. This species is severely threatened by habitat fragmentation and over exploitation of its eggs. The most important component for their habitat is nesting ground, because maleo do not incubate their egg by themselves but bury it in the deep soil which has heat from the sun or geothermal activity.

This research had been done in Lore Lindu National Park (LLNP) Central Sulawesi from April-June 2003. The nesting pit data was collected with line transect and point of abundance method. It was aimed to (1) estimate the population and density of maleo by the existence of their nesting pit using nest count method, (2) determine maleo's preferential habitat for their nesting ground using Neu index method, and (3) to find out the pattern of their nesting pit dispersion using index of dispersion method.

Maleo at LLNP use heat from geothermal activity to hatch their egg. There were 6 different type of habitat use by maleo in LLNP to bury their egg, which are (1) secondary forest habitat (HS), (2) coppice habitat (SB), (3) clump and bush habitat (SP), (4) river banks habitat (SS), (5) bamboo plantation habitat (TB), and (6) cacao plantation habitat (TC). The result showed population in each habitat type were: 487,10 ± 62,38 ind. (HS), 471,14 ± 122,78 ind. (SB), 1379,25 ± 114,64 ind. (SP), 1425,70 ± 137,67 ind. (SS), 524,88 ± 57,98 ind. (TB), and 266,37 ± 107,91 ind. (TC). Density in each habitat type were: 252,38 ± 32,32 ind/ha (HS), 161,90 ± 42,19 ind/ha (SB), 188,68 ± 15,68 ind/ha (SP), 149,76 ± 14,46 ind/ha (SS), 237,50 ± 26,23 ind/ha (TB), 214,81 ± 87,03 ind/ha (TC). Maleo seems have preference to selected habitat type. If sorted according to an index value of habitat selection the result were: HS (w=1,34), TB (w=1,28), TC (w=1,17), SP (w=1,04), SB (w=0,94) and also SS (w=0,82). Examination to index election of habitat require to be conducted using test of chi-square. Result of examination show value $\lambda^2$ equal to 15,076 and $\lambda^2_{0,05}$ equal to 11,071, it meant there are election to selected habitat type for maleo to lay eggs. Pattern of dispersion was determined by the amount of sample unit found. The analysis result showed a clumped dispersion pattern at every type of habitat.

Maleo's population are going down. Most of the nesting ground habitat recently was not appropriate for maleo to bury their egg. This matter show that maleo need a few requirement for habitat to lay their eggs.