

Sunantha Thongchai 2012: Genetic Diversity of Wild Asian Elephant (*Elephas maximus* Linnaeus, 1758) in Phu Wua Wildlife Sanctuary, Nong Khai Province. Master of Science (Forest Biological Science), Major Field: Forest Biological Science, Department of Forest Biology. Thesis Advisor: Assistant Professor Ronglarp Sukmasuang, Ph.D. 75 pages.

The study of genetic diversity of wild asian elephant in was conducted at Phuwua Wildlife Sanctuary (PW), Nong Khai Province, Dongyai Wildlife Sanctuary (DY), Buri Rum Province, Phuluang Wildlife Sanctuary (PL), Loei Province and Phukiew Wildlife Sanctuary (PK), Chaiyaphum Province during September 2009 until August 2010. The objectives were to investigate the genetic diversity and also to study of evolutionary relativity between population clusters with other areas especially in the northeastern part of Thailand. PCR technique and base sequences from Cytochrome b to the heading of control region in Mitochondrial DNA was used. The results reflected from 39, 57, 10 and 8 fecal samples from PW, PK, PL and DY wildlife sanctuaries respectively showed 2 halplotypes (HapA and HapB) in PW, 2 haplotypes in PK (HapA and HapC), 2 haplotypes in PL (HapA and HapB) and only one haplotype in DY (HapA). Besides, genetic analysis of the tip of Cytochrome b to the basis of control region found the differences of 27 base levels on the width 601 bp can be categorized into 3 haplotypes (HapAH, HapBQ and HapNewB) for PW, 3 haplotypes (HapAH, HapNewA1 and HapBH) for PK, 3 haplotypes (HapAH, HapAB and HapBO) for PL and only 2 haplotypes (HapAH and HapAD) for DY. According to the study, it can be concluded that there are 8 haplotypes of wild elephant genetic diversity and 2 population clusters; Clade A and Clade B. In Northeast part of Thailand, Clade A was found more than Clade B. The elephant in group HapAB, HapAD, HapAH and HapNewA1 have shared things in common than any other group. Distinctively, elephant in group HapNewB has closed relation with elephant group HapBO. HapAD was regarded as the ancestor of other haplotypes.

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