

Nithidol Buranapim 2009: Population Viability Analysis of Reintroduced Brow-antlered Deer (*Cervus eldii thamin* (Thomas, 1918)) in Huai Kha Khaeng Wildlife Sanctuary, Uthai Thani Province. Master of Science (Forest Biological Science), Major Field: Forest Biological Science, Department of Forest Biology. Thesis Advisor: Assistant Professor Ronglarp Sukmasuang, Ph.D. 101 pages.

Population viability analysis of reintroduced brow-antlered deer (*Cervus eldii thamin* (Thomas, 1918)) was conducted mainly both in Huai Kha Khaeng Wildlife Sanctuary, Uthai Thani Province and some wildlife propagation centers. The objectives were to investigate viability of the 44 brow-antlered deer in 10-50 years after releasing them to nature. Two data sources from captive conditions and natural condition were used for analysis. The deer in captive condition had reproductive pattern of polygynous. Female animal had an average sexual maturity of 2 years old. A male deer reproduced with a female at an average of 1 year old and maximum reproducing age was 10 years old. Probability of the female deer in giving birth to be male was 48.6%. The average number of new born was 1 individual per female per 1 time. Probability of a mature female to get pregnant and gave birth was 95.3% with 2.17 standard deviation. The data collected from natural condition after releasing 44 deer into the wild that for 6 months were composed of 51.2% sexual maturity male. The mortality rates of the released animal were 82.4 % and 86.7 % for female and male respectively. The main prey species of the released deer were leopard, Asian wild dog and tiger respectively. The survival deer could be observed from their eating habit, health assessment and wilderness. The home range of reintroduced deer is 36.2 square kilometers analyzed by pooled data. The average of the male's home range was 13.4 square kilometers (SD=12.05) whereas those of the female was 11.0 square kilometers (SD=12.96). The result of the viability analysis showed declining of the released population even in the program using with 100 individuals as the starting population. Nevertheless if the released program can reduce the mortality rate to less than 40%, the released population can survive sustainably. Suitable sex ratio between male and female of the deer for the reintroduction program was 1:3 or 1:4.

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Thesis Advisor's signature

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