



THE SOUTHEAST ASIAN BOX TURTLE *CUORA AMBOINENSIS* (DAUDIN, 1802) IN INDONESIA

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The Southeast Asian Box Turtle *Cuora amboinensis* is a widely distributed freshwater turtle native to Southeast Asia. The species occurs in natural and man-made wetlands. The global and national conservation status of the species is "Vulnerable". Since 2000 export has been managed through a quota system with the purpose of population management and sustainable use.

TRAFFIC South East Asia (SEA) proposes a NDF methodology using criteria that were assessed during fieldwork in 2006: legislation and enforcement; trade levels; extent of illegal trade; reproduction biology; composition of wild populations and individuals in trade; abundance in a protected area; and abundance in harvest in an exploited area. Results show that Indonesia has a substantive legislative framework in place to govern the management of wildlife harvest and trade. Law enforcement is however rather weak. The species remains among the most abundantly traded freshwater turtles in Asia. The species is used for human food consumption, Traditional Chinese Medicine, merit release and as pet. In Indonesia it has the highest harvest quota (20 000) of all hard-shelled turtles. All specimens are wild caught, year around. Ten percent (2000 individuals) are allotted for local utilization but local use is negligible with ethnic Chinese as the main user group. The export quota of 18 000 individuals is divided among 14 pet exporters (1/3 of quota, preferably large adults) and four meat/TCM exporters (2/3 of quota, preferably small individuals). Destinations for the meat and the shell trade are East Asian countries, mainly Hong Kong SAR and mainland China and Singapore. Pet importing countries are Europe, Japan and the United States of America. A conservative estimate is that illegal trade amounts to 10 times the volume of legal trade. The slow reproductive rate of the species makes it very vulnerable for exploitation and at the same time makes captive breeding an unfeasible endeavour, which is therefore not practiced in the country.

Individuals encountered in the wild and in trade were measured and means calculated. These data may serve as baseline data for further comparative studies. Since larger size classes are targeted for the large-scale consumption trade a smaller mean size of individuals in trade compare to the mean size in the wild may be related to over-exploitation of larger size classes. A survey to assess the abundance of the species in a protected area, revealed an estimated density of 60 ind./ha. These data may serve as baseline data, and lower density in a similar natural habitat might

indicate over-exploitation. If off-take is sustainable population density will be lower but stable. A continual decline in density would indicate over-exploitation. The wild population was composed of 54.9% immature versus 45.1% mature individuals; sex ratio was M1:F1.2. A size frequency histogram of the population in the protected area is bell-shaped indicating normal distribution. A deviation from the above might indicate over-exploitation. For example, in a natural wetland with long exploitation history in East Kalimantan, 95.8% of the catch were adults, and sex ratio was 1M:1.03F. To determine the abundance in the exploited natural wetland a 43-day lasting harvest survey was conducted. Results indicate that one middleman can trade a conservative mean of 3350.9 individual/year. If catch per unit effort (CPUE) can be sustained over the years, exploitation might be sustainable, if CPUE decreases over the years, over-exploitation is taking place. The assessment of the harvest impact on the species all over Java, Sulawesi, Sumatra and Kalimantan showed over-exploitation and even local extinction near and in trade centres, acquisition of individuals from provinces without quota, and that the species is more common in remote areas that were exploited to lesser extent in the recent past.

Major problems found in the elaboration of the NDF are the lack of past density / population size data to compare present results with; the enormous amount of illegally traded individuals and the long chain of people involved in the illegal business. In the absence of quantitative data on local populations of the Southeast Asian Box Turtle criteria that might indicate changes in the local abundance that should be assessed on a regular basis are recommended.