

Wild Elephant Counting Weeks in the King's Project Area, Kui Buri National Park, Southwestern Thailand

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Introduction

Crop raiding by elephants is the most important problem in the conservation and management of wild elephants in Thailand. Elephants have special status due to their role in Thai national history, and are under the patronage of the Thai Royal Family, which plays a very important role in solving the problem of crop raiding by elephants (Srikrachang 2003). In the case of Kui Buri National Park (KBNP), before 1998 a large forest area was encroached for growing agro-industrial crops (pineapple), causing habitat degradation. When the value of pineapple became very high in 1997-1998, four elephants were killed in the area. Consequently, solutions for human-elephant conflict were formulated as a part of His Majesty's Project "Conservation and Restoration of Kui Buri Forest" and were implemented since May 1998.

The 'Elephant Counting Weeks' was a novel program organized by the first author to obtain information on the elephants. It was conducted with cooperation of the Wild Elephant Lover Club (WELC), and financially supported by the Biological Diversity Management in Kaeng Krachan Forest Complex Program, Department of National Parks, and Elephant Reintroduction Foundation. This program was part of the effort at providing "Long-term Solution of Human-Elephant Conflict at Kui Buri National Park by Participation of Local Communities", which proposes to use ecotourism, especially elephant watching for solving the conflict between the elephant and people.

Methods

Study area

The King's Project area with a total extent of about 1,600 hectares, is adjacent to the Kui Buri National Park, lying within 11° 40' – 12° 10' N and 99° 20' – 99° 50' E in Prachuap Khiri Khan Province, southwestern Thailand (Fig. 1). The degraded cropland was permanently handed over to the project for reforestation, soil and water conservation and elephant habitat improvement.

Because the Kui canal and its tributaries had become dry or stopped flowing after long-term crop growing in the area, 12 small reservoirs, many ponds and hundreds of check dams were built to keep water all year round (Srikrachang & Srikosamatara 2005). About 30 artificial mineral licks were also created (Fig. 2). In addition, two ranger stations were established in 1998 and 2004 in both Kui canal valleys to provide safety for the elephants.

Consequently this area has become a preferred habitat for elephants and is now composed of a mosaic of secondary forest, natural grassland, and forest plantations.

In addition, more grassland patches were made in April 2008 and 2009 by removing plants that elephants did not consume, especially *Chromolaena odorata* (bitter bush) and *Lantana camara*. After removal of these plants the grasses grew back, providing an important food supply for elephants and other ungulates such as gaur and deer.

Activities

Trained members of Wild Elephant Lover Club, rangers and 25 volunteers of various ages and occupations such as students, wildlife photographers and media participated (Fig. 3). Extensive surveys were conducted during late wet season and early dry season (5-10th Dec. 2008) and dry season (13-18th March 2009). In the evening (15.00-18.30 pm) of 5-7 days each month, observations were made from 17 platforms (Fig. 4) that were built at small reservoirs, grassland patches as well as elephant trails.

To identify individuals and groups, we noted marks of individuals and took photographs using

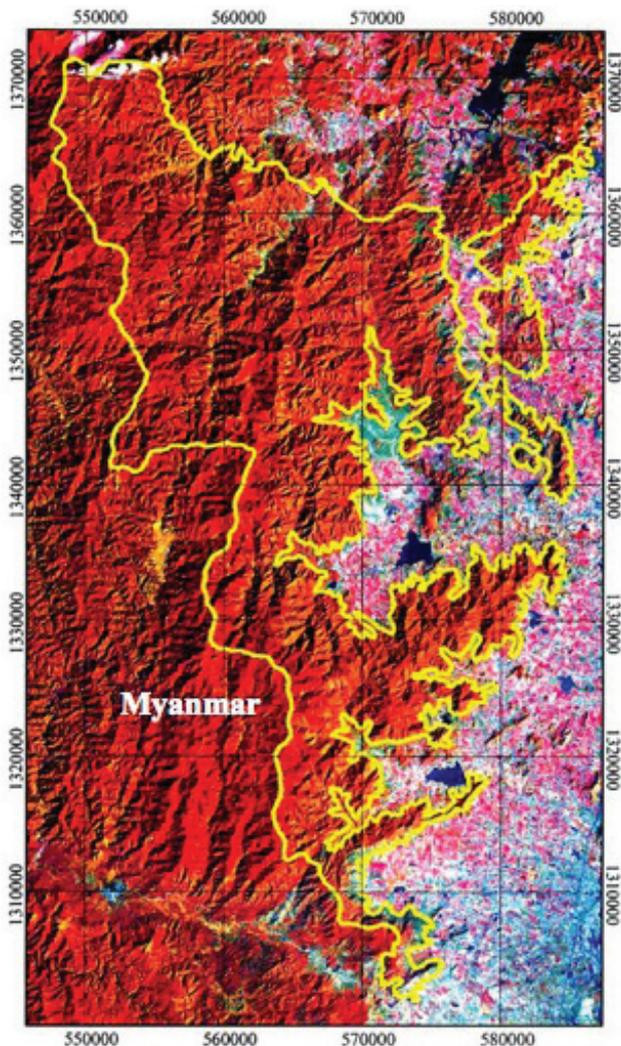


Figure 1. Satellite imagery map of Kui Buri National Park showing its landscape and location of HM the King's Project Area.

/ = park boundary; ○ = forest park; ○ = pineapple plantations; ○ = water sources; ○ = the King's Project area (grassland and secondary forest).

a digital SLR camera with a 100-300 mm lens. Each elephant was individually identified with descriptions of the age, sex, social formation, and unique marks. Age classes were categorized to adult (>15 years old), sub-adult (5-15 years old), juvenile (1-5 years old) and calf (<1 year old) based on either the relative height of the elephant to the largest individual in the herd, see Figure 3 (Wanghonga 2004) or the degree of ear folding, and behaviour. Other individual marks such as tusk characteristics in males, depigmentation patterns, ear contour, and holes in the ears were identified from photographs. The date and location of observation were added to the database for the analysis of home range.

Results and discussion

We identified a minimum of 168 elephants in the King's Project area. This should be close to the population in the Kuiburi National Park, which was estimated to be approximately 150-200 individuals (Wildlife Research Division 2005). This elephant population should be enough to maintain as a viable population without inbreeding depression as suggested in Sukumar & Santiapillai (1993) as there were few threatening

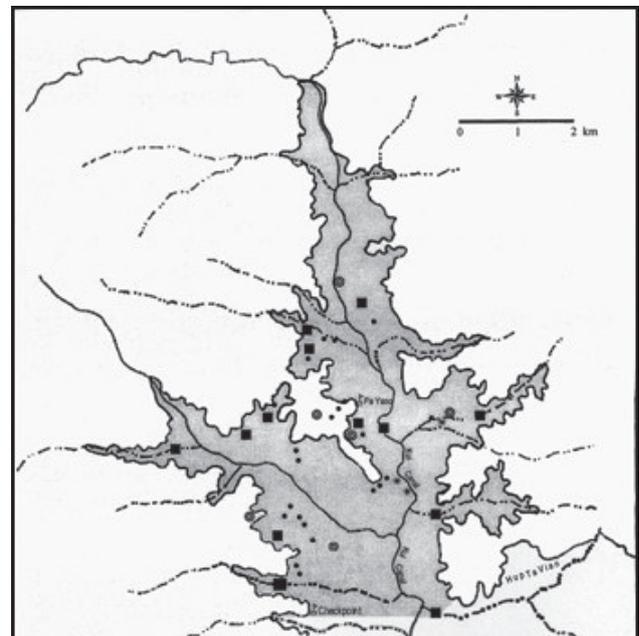


Figure 2. A map of the King's Project area showing the locations of small reservoirs where platforms were set up on trees to observe elephants. ■ = small reservoir; ■ = man-made ponds, N = streams; * = mineral licks; ⊙ = known resting areas of the elephants.



Figure 3. Looking for elephants.

activities from humans in the secured area.

The data showed that 34.5 % were adult, 25% were sub-adult, 24.5% were juveniles, and 16% were calves. The population was more likely stationary due to the high number of juveniles and sub-adults. However, more calves should be recruited in the next few years because there were more sub-adults and juveniles, and the area has abundant food and there is low mortality.

The ratio of adult male:adult female was 1:7. In another wild population in Thailand in Huai Kha Khaeng Wildlife Sanctuary the sex ratio was 1:5.8 (Sukmasuang, 1993). Comparing to that of captive elephants, where male:female ratio of the country was 1:2 (Srikrachang 2003), the sex ratio in the wild population was approximately three times less. There was a higher sex ratio in the domesticated elephants because the males, which were previously used in the logging industry were brought into tourism. However, in many elephant camps in Thailand, female elephants are preferred because of their tame behavior and easiness to control when they are working with man (Lair 2003). In addition, the female-biased sex ratio is common in the promiscuous elephant population (Romano 1991).

The proportion of tuskers (Fig. 5) in all age classes was 37% of the male population, which is higher than observed in Sri Lanka (Anon 1993). There is no evidence of poaching for ivory in the area. However, the population size and sex ratio might be underestimated because the surveys

conducted were of a short duration.

The King's project area represents the advantages of habitat improvement to elephants. The main elephant population in the Kui Buri National Park is concentrated in and around the study area. There were no signs of elephants in the western part of the national park, which is adjacent to the Union of Myanmar (Steinmetz *et al.* 2006). Moreover, fighting among ethnic groups along the boundaries of Myanmar might impede the movement of elephants between Thailand and Myanmar (Steinmetz *et al.* 2006). It is suggested that the King's project area which provides elephants basic requirements has become a preferred habitat for the elephants (Fig. 6).

The activity encourages the appreciation and conservation of wild elephant to general public. There were 26 volunteers of various ages, religions, and careers participating in the activity. Furthermore, it received attention from public media, especially newspaper and television, helping increase awareness of elephants and their conservation. The information and pictures obtained enabled identification and classification of elephants in the area, which will help the long-term study of the elephant population. This project promotes ecotourism as a man and elephant conflict mitigation tool in the future.

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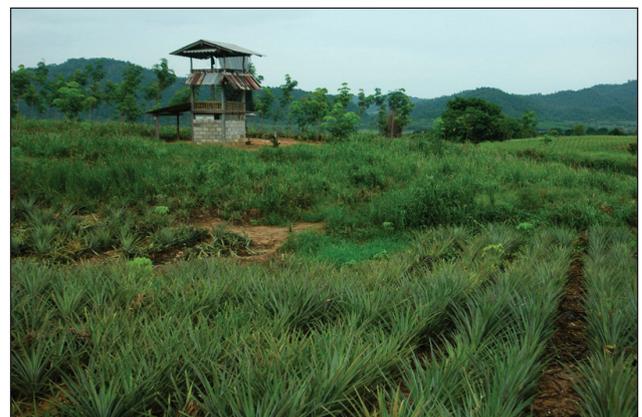


Figure 4. Elephant watch tower.



Figure 5. Tuskler in the King's Project area.

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Figure 6. Female with her calf.