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Current Status of Asian Elephants in China

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Introduction

Asian elephants are only found in a very small area of southern China with a total number of individuals less than 200. They occur in bamboo-broadleaf mixed forests along gullies and rivers, at altitudes under 1000 m. Current elephant habitat is highly fragmented and consists of isolated patches situated among extensive stretches of tea and rubber plantations, and croplands. Habitat loss and poaching were once major threats to elephants in China, but since the 1980s, effective conservation measures have been adopted by the Chinese government to protect elephants by establishing nature reserves and banning illegal hunting (Zhang *et al*. 2006). Asian elephants are listed as a class I protected wildlife species under the Wildlife Protection Law (Zhang 2007).

In the current distribution area in Yunnan, local indigenous groups including Aini, Dai, Jingpo and Wa believe that elephants can bring luck. Elephant figurines made of wood or stone and depiction of elephants on paintings can be found in many local temples. Elephants are also used as a symbol of good fortune in local religious events. Elephants are an important tourist attraction in the Wild Elephant Valley in Xishuangbanna. However, with the rapid increase in human activities in elephant range areas in the past decade, human–elephant conflict has become a problem, challenging the survival of this endangered species in China (Zhang & Wang 2003).

Wild elephants

Past elephant distribution

In 1976, elephant bones and teeth were found in the Sangganhe area near Datong of Shanxi Province in North-west China. This is believed to be the most northern distribution record of Asian elephants in China, which historically dates back to the Xia dynasty about 4000 years ago (Jia & Wei 1980; Sun *et al*. 1998). More than 3000 years ago, large populations of Asian elephants still roamed the forests along the Yellow River. As farming clans spread through south China, elephant distribution receded south at a speed of 0.5° of latitude per century (approximately 0.5 km per year), and now hold their position only in a small area of the country's mountainous and frontier areas (Sun *et al*. 1998).

Current elephant distribution

The remnants of China's once abundant population of Asian elephants are living in the lush rainforests that cover the southern- most part of China's Yunnan Province, bordering Myanmar and Laos (Zhang *et al*. 2006). Elephants can be found in Xishuangbanna, Pu'er and Lincang, prefectures (Fig. 1), with a total number of 178-193 (Yang 2010).

There are 18-23 elephants living in the Nanguanhe national nature reserve in Lincang, where about 8% of forest was lost in the past 30 years (Feng *et al*. 2010). In Pu'er, there are about 34 elephants consisting of 3 small family groups and 2 bulls. All of them migrated from Xishuangbanna to the area since 1996. More than 90% of wild Asian elephants in China occur in Xishuangbanna, which is located in the extreme southern part of Yunnan, including 3 sub-populations in Mengyang, Mengla and Shangyong. In Mengyang, there are 63 individuals identified with morphological characters from 697 images taken in the protected area from 2003 to 2010, including 10 bulls and 10 family groups (Liu, unpublished data). With the dung DNA capture-

recapture methods, 76-108 elephants were estimated to be present in Mengyang area (Cai 2007), but two family groups, 28 individuals and 2 bulls, dispersed north to Pu'er in mid 2000s. There are 60-68 elephants distributed in Shangyong Protected Area and 25-32 elephants in Menglang Protected Area bordering Laos (Lin *et al*. 2011; Chen 2005).

Threats

Competition over land resources seems to fuel human-elephant conflict. Over the past five decades, the demand for economic development has pushed farmers to convert forested areas to farmland. The area covered by natural forest in Xishuangbanna decreased from 1.05 million ha in 1952 to 0.3 million ha in 1994, whereas the area of land represented by farmland increased from 36,242 ha in 1949 to 114,774 ha in 1998 (Guo *et al*. 2002). In response to this, efforts have been made to maintain and enlarge the protected areas; for example, in Xishuangbanna, the local government relocated 1120 people comprising 195 households in eight villages out of the core protected area, and in Nangunhe National Nature Reserve, more than 120 households were moved. However, such measures had the effect of removing the buffer zones or other forms of separation between human habitats and reserves.

Local governments have to cope with the pressures of limited arable land and small budgets, and hence can ill afford any resettlement plan. Conversion of wild habitats into cultivated lands or areas of intensive forestry production has declined greatly in recent years due to rigorous management by local forestry bureaus. However, efforts to restore wild habitat are offset from time to time by people who appropriate state-owned land, which is often forested and remote from other communities.

In Xishuangbanna, the average annual human population growth rate in 2003 was 2.16%, which was much higher than the national average of 1.07% (National Bureau of Statistics of China 2003). In an agriculture-based economy, an increase in the human population inevitably places pressure on natural resources, especially land resources (Zhang *et al*. 2006).

Although the Asian elephant is a class I protected species in China, the reappearance of wild elephants was not welcomed by local farmers. Humans have dominated this land for generations, and their lives are closely tied to it. Competition between humans and elephants over this limited resource affects both. Conflicts first become acute in communities bordering the protected area, and farmers suffer the most. Bamboo, pineapple and sugar cane, which are major income sources for local farmers, are the crops most frequently raided by elephants (Zhang *et al*. 2006). Rubber plantations are also affected, as elephants often trample plantations of young trees, breaking them.

Wild elephants cause heavy property loss almost everywhere they make an appearance in Xishuangbanna Prefecture (Bureau of Statistics, Xishuangbanna 2002). In some remote areas, elephants even enter houses to locate food. In the affected areas, people are so frightened that some do not visit friends after dusk or send their children to school in the early morning. These conflicts between humans and elephants also detract from the limited resources that governments can invest in conservation projects. According to the provincial wildlife-caused-damages compensation legislation of Yunnan, local county and prefecture governments are

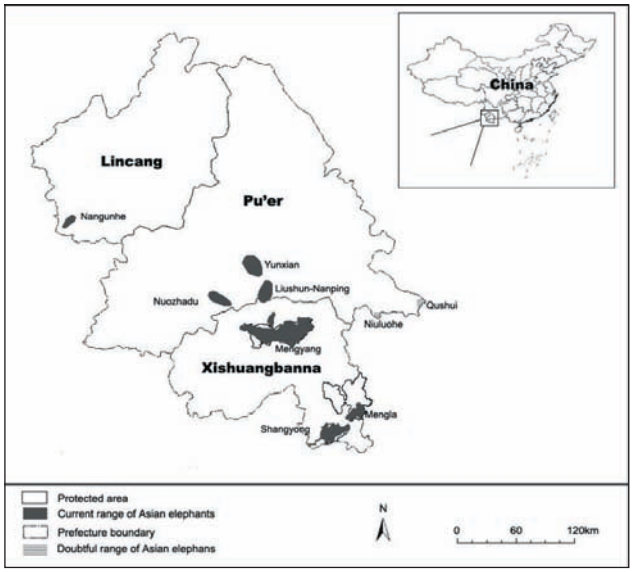

Figure 1. Current distribution of Asian elephants in China.

responsible for half of the compensation paid for life and property loss caused by protected terrestrial wild animals (Government of Yunnan Province 1998). Although local governments attempt to raise funds for compensating farmers for crops damaged by elephants and other wildlife, the compensation is not sufficient. The gap between the value of crops damaged by elephants and compensation awarded to farmers becomes wider each year, and would overshadow current conservation achievements if no further measures were taken to prevent crop damage. Since 2009, Xishuangbanna National Nature Reserve started cooperating with commercial insurance companies to purchase social insurance to compensate crop damages caused by wild elephants in the prefecture. Elephant crop raiding insurance was also introduced in Pu'er by the local forestry department in 2010.

From 1985 to 2003, elephants in the three prefectures of Linchang, Pu'er and Xishuangbanna accidentally killed 13 people (Bureau of Statistics, Xishuangbanna 2002; Zhang & Wang 2003).

Elephant in China
Photo by Aidong Luo

With the ever-increasing resident population around protected areas, contact between humans and elephants may become more frequent and lead to more tragic accidents. Such tragedies will undermine the authority of local wildlife conservation departments and fuel the resentment that humans have towards elephants. Since the State Forestry Administration and local governments are not permitted to deal with problem elephants, locals sometime risk the penalties and take action themselves. In the autumn of 2002, wild elephants in Xishuangbanna killed three people, and in retaliation farmers then killed a 7-year-old male elephant. From 1992 to 2007, there were 32 elephant deaths in Shangyong protected area in Xishuangbanna including 7 tuskers poached for ivory (Lin *et al*. 2011).

Captive elephants

There were few elephants in zoos in China in the past 50 years. They mostly comprised of captive elephants from India, Sri Lanka and Thailand given to the Chinese government as official gifts and kept in zoos since 1950s. A few zoos have successfully bred Asian elephants in captivity in Beijing, Fuzhou and Shandong. Since late 1990s, over 20 safari zoos have been established in China, and demand for captive elephants has increased sharply. Captive elephants have been imported from Thailand and Myanmar legally or illegally into China since then.

Currently there are about 50 elephants in captivity in China. Most of them belong to state owned or private owned zoos and safari parks for tourism. There are also three rescued wild elephants kept in the breeding center in Xishuangbanna for a national captive breeding program. However, there has not been any success in breeding at this center since 2004. Another 20 captive elephants were imported from Thailand to the Wild Elephant Valley in Xishuangbanna for tourism and circus performance in 2007. They are rented from the Thai private sector and are allowed free range for foraging after performances everyday, and have interactions with local wild groups sometimes. Three calves were born to this group in recent years.

All captive elephants are registered under the State Forestry Administration, which is the key governmental agency responsible for wildlife conservation and management. Elephants in zoos are under the management of the Ministry of Housing and Urban-Rural Development.

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