

Chapter 6

The Status of Bears in Thailand

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Thailand is home to the sun bear (*Ursus malayanus*) and the Asiatic black bear (*U. thibetanus*). Both species overlap widely in geographic distribution, and coexist within a seasonal mosaic of evergreen and deciduous forest types that occur only in mainland Southeast Asia. This report is a preliminary assessment of the current status of bears in Thailand.

Biology

There have been few ecological studies of bears in Thailand. This section draws from ongoing research on the habitat use and feeding ecology of sun bears and black bears in Thung Yai Naresuan Wildlife Sanctuary in western Thailand (Steinmetz unpublished data). Results indicate that sun bears and black bears eat fruits from > 160 tree species and overlap substantially (86%) in diet. Lauraceae (cinnamon family) and Labiatae (teak family) were the most commonly climbed tree families by both species in semi-evergreen and mixed deciduous forest types, respectively. Semi-evergreen forest was the richest habitat for tree taxa selected by bears, with 61 genera and >96 species. Trees in many of the most commonly-climbed families were also abundant in the forest. Opened nests of ants, termites, and bees (*Trigona* spp.) were most common in mixed deciduous forest, and absent from montane evergreen forest, where bears appeared most dependent on tree-borne fruits.

Both species used lowland (< 1,200 m elevation) forest types extensively (deciduous forest: 10 climbed trees/ha; evergreen forest: 32 climbed trees/ha). However, in montane (>1,200 m) forest, black bears were predominant (climbing 14 trees/ha) whereas sun bear sign was scarce. Bear climbing activity was largely related to feeding: recent claw marks generally coincided with periods of fruiting, and one-third of the trees with recent claw marks also had old marks, indicating seasonal revisiting by bears to the same trees.

Sun bears and black bears in Thung Yai occur in the same habitats, and share many of the same foods within

them. This extensive niche overlap at two spatial scales (habitat and food type) suggests that competition between bear species has little influence on their selection of resources. However, where ground cover is sparse but tree-food resources are densely clumped - such as in montane evergreen forest - the smaller sun bear may be unable to avoid encounters with black bears. In that habitat black bears were the predominant species, and sun bears were rare.

Status

Present distribution

Bear status is presented as occurrence of each species within extant forested areas (most of which are part of Thailand's protected area system). The data (mostly animal sign) are from a national survey of endangered mammals in protected areas, conducted by the Department of National Parks, Wildlife and Plant Conservation (DoNP) during 2003 - 2006. Claw marks on climbed trees comprised most of the field data; these were classified according to methods developed by Steinmetz R and Garshelis D. Status information is supplemented with data from interviews conducted by DoNP in 2001.

Sun bear sign was recorded in 68% of the surveyed protected areas, and black bear sign in 53% of the areas (Fig. 6.1, 6.2, Table 6.1). Black bears and sun bears co-occur in at least 46% of the areas surveyed. In 28 areas (40%), no sign of either bear species was found.

In many cases one species was identified from sign at an area (first and second rows of Table 6.1), but ambiguous bear sign that could not be classified to species were also found. Such sign could be from the other species. Therefore, the number of areas at which bear species co-occur is underestimated.

At 19 protected areas sign of only one species were found (i.e., all recorded sign was identifiable to only one species). The Asiatic black bear was the only bear species recorded in five areas, all in northern Thailand: Doi Pha Chang Wildlife Sanctuary (WS), Pha Pung

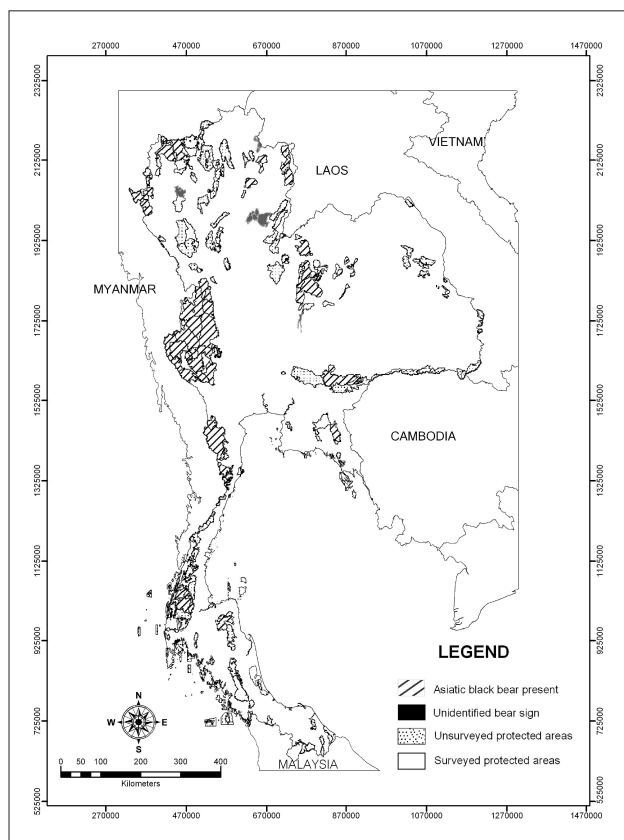


Fig.6.1: Distribution of Asiatic black bear (*Ursus thibetanus*) in Thailand, based on sign surveys conducted from 2003-2006.

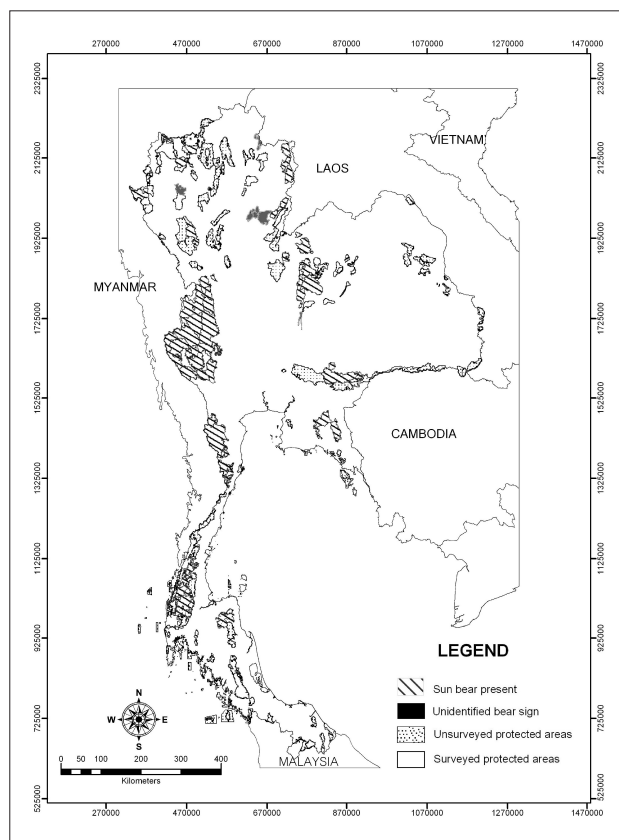


Fig.6.2: Distribution of sun bear (*Ursus malayanus*) in Thailand, based on sign surveys conducted from 2003-2006.

Table 6.1: Occurrence of Asiatic black bear (*Ursus thibetanus*) and sun bear (*U. malayanus*) in Thai protected areas, based on sign surveys (2003-06) and interviews (2001).

Occurrence	Sign surveys		Interviews	
	Number of protected areas (<i>n</i> = 78)	Percent	Number of protected areas (<i>n</i> = 197)	Percent
Sun bear present	50	64	106	54
Black bear present	41	53	123	62
Both species present	36	46	Not calculated	Not calculated
Neither species present	28	40	Not calculated	Not calculated
Sun bear only	14	18	Not calculated	Not calculated
Black bear only	5	6	Not calculated	Not calculated

WS, Lum Nam Pai WS, Mae Yom National Park (NP), Huai Nam Dang NP. The sun bear was the only species recorded in 14 areas: Khao Sanam Preang WS, Khao Ang Runai WS, Mae Ping NP, Doi Chiang Dao WS, Mae Charim NP, Mae Lao-Mae Sae WS, San Pan Dan WS, Khon Mae Yay Mon WS, Chlerm Pra Kiet Somdej WS, Nam Tok Ngao NP, Khao Sok NP, Khlong Phraya WS, Hala-Bala WS, and Sri Phangnga NP. Half

of these areas are in southern Thailand.

Sun bears occur in forested areas throughout Thailand, from the northern highlands to the extreme south. Asiatic black bears occur from the northernmost part of Thailand to the central portion of Thailand's southern peninsula, where their distribution terminates at Tai Rom Yen National Park.

Interview responses from 2001 indicated that sun

bears occurred in 106 protected areas (67 national parks, 39 wildlife sanctuaries) covering 66,075 km² of forest habitat, and Asiatic black bears occurred in 123 areas (78 national parks, 45 wildlife sanctuaries) covering 77,519 km² of forest.

Population estimates

There are no historical or current population estimates for either bear species in Thailand. Lekagul and McNeely (1988: 526) considered the Asiatic black bear to be “rather rare”, but this assertion was unsubstantiated.

Population threats

Commercial poaching and habitat loss have reduced and fragmented bear populations in Thailand (Pattanaviboon and Dearden 2003). Commercial poaching for the wildlife trade is currently resulting in an alarmingly high volume of bear parts for sale in wildlife markets along Thailand's international borders (Shepherd C, TRAFFIC 2006 personal communication). The magnitude of this threat must be very high, but is difficult to assess because the abundance of bears within extant forested areas is uncertain. However, recent work in a few protected areas has produced qualitative trend estimates, which may be useful for assessing this problem. In Thung Yai Naresuan Wildlife Sanctuary, for example, populations of both species were estimated by local woodsmen to have been reduced by about 50% over the past 20 years, mainly due to commercial poaching for gall bladders (Steinmetz et al. in press).

Arrests of bear traffickers were made in 2004, during which 3 Asiatic black bears, 2 sun bears, and 27 parts of black bear carcasses were confiscated (DoNP crime statistics). In 2005, 4 paws and 8 legs of Asiatic black bear were confiscated in arrests. One Asiatic black bear was illegally killed in 2005 in Huai Kha Kheng Wildlife Sanctuary.

Habitat threats

Remaining bear habitat is most threatened in northern Thailand because protected areas there are small and isolated (Fig. 6.3). Populations of both species are most secure (from hunting, habitat fragmentation, and problems associated with small populations) in five large forest complexes: Western Forest (18,730 km²), Phu Khieo (7,092 km²), Dong Phrayayen-Khao Yai (6,199 km²), Khaeng Krajaem (4,373 km²), and Klong Saeng (4,285 km²) (Fig. 6.1).

Habitats used by bears encompass most of the plant community diversity in Thailand, including agricultural areas (Table. 6.2, Fig. 6.3).

There are four major threats to the habitats of bears and other wildlife in Thailand.

(1) Forest degradation: This problem includes selective logging, and originates from timber capitalists, sawmill owners, and through small-scale timber use by villagers. It is linked to human population increase, which in turn, increases demand for wood for building houses, furniture and charcoal production.

(2) Forest encroachment: Forest areas are increasingly being transformed into resorts and second homes for affluent urban people. Land speculators and investors employ local villagers to clear forested land that is then sold.

(3) Unclear forest demarcation: This problem results in confusion and disputes about where different land-use activities (e.g., agriculture, forest product collection) should or should not occur.

(4) Infrastructure development: Large-scale infrastructure development is supported financially, and pushed politically through national policy combined with the international development agendas of organizations such as the World Bank and the Asian Development Bank. Paved roads, dams, electrical grids, and international water diversion schemes are planned for every region of Thailand, including in and around the major forest com-

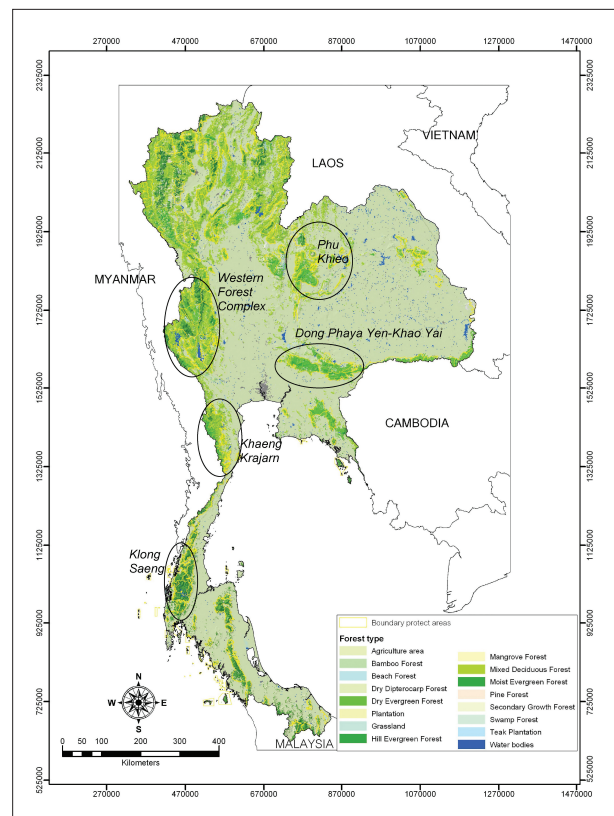


Fig.6.3: Protected areas, forest cover, and forest types of Thailand, 2006. Five key forest complexes -important for the conservation of bears- are shown.

Table 6.2: Habitat types used (signs present) and unused (signs not found) by Asiatic black bears (*Ursus thibetanus*) and sun bears (*U. malayanus*) in Thailand. Data are from sign surveys in 78 protected areas, 2003-2006.

Habitats used	Habitats unused
Evergreen forest	Pine forest
Dry evergreen forest	Mangrove forest
Mixed deciduous forest (including bamboo)	Beach forest
Hill evergreen forest (> 1,000 m elev.)	Plantations (teak, eucalyptus)
Peat swamp forest	Urban areas
Dry dipterocarp forest	Mining areas
Secondary growth	Rock
Agricultural areas	
Savanna	
Old clearings	

plexes. These developments will facilitate forest conversion and access for commercial hunters, and collectively represent the most serious threat to bears and other large mammals in the near-future.

Human-bear relationships

Local names of bears

The word for bear in Thai is “*Mee*”, and each species is given a specific epithet according to well-known domestic animals with resembling characteristics. The sun bear is called “*Mee Mah*”, meaning dog-bear. The black bear is called “*Mee Kwai*”, meaning buffalo-bear. In Karen language (the Karen are an ethnic group that inhabit the entire western border region of Thailand where most remaining forest occurs), the sun bear is called “*Pu-taung Bwee*”. The black bear is called “*Pu-taung Mer*”. When one is in the forest, however (i.e., in close proximity to bears), both species of bears are called “*Mong Pu*” - a special respectful name meaning grandfather.

Ethnology of bears

Bear gall bladders have been used medicinally in Thailand for many decades. In the past 15 years, the popularity of traditional Thai medicine has waned (with the spread of modern drugs) and within-Thailand demand for bear bile has decreased. Bear paws are still eaten by Thai-Chinese people and some tourists who believe this practice improves health.

Bears have not typically been hunted for subsistence in Thailand. Commercial hunting for bear gall bladder and bear paws has been a relatively recent development within the past 20 years. Interviews with bear hunters revealed two hunting methods (Steinmetz unpublished

data). In one method, bears are attracted to bait (e.g., a deer or pig carcass) and shot by a tree-borne hunter. In the second method, bears are stalked during the rainy season where they converge at densely clumped fruiting oak trees in certain forest types.

Bears do not have symbolism in Thai culture. However, Thai people recognize bears as large, powerful creatures, and will liken a big, strong man to a bear.

Conflict with humans

Crop raiding by bears occurs in corn plantations and orchards that are adjacent to forest reserves. Near Thung Salang Luang and Huai Nam Dung National Parks, 5-6 instances of Asiatic black bears feeding in corn fields are reported by farmers each rainy season. Black bears also feed on orchard fruit near Khao Yai National Park. However, these problems are not considered to be widespread or severe.

Commercialism of bears

Bear farming is not known to occur in Thailand. Bears are commonly kept in captivity, however (Table. 6.3), both in public (managed by the Zoological Parks Organization of the Thai government) and private zoos. Bears are also kept in wildlife breeding centers (managed by DoNP). Most bears in these centers have been obtained through confiscations from the illegal bear trade since 1995. A reintroduction of black bears from these facilities is planned for Khlong Khua Wai Wildlife Sanctuary, east Thailand. Finally, bears are kept by private owners and temples. Temples typically obtain bears from pet owners who no longer want to care for adult animals.

Table 6.3: Number of captive bears in zoos and breeding centers in Thailand, 2006.

Organization	Number of bears		Province
	Black bear	Sun bear	
Zoological Parks Organization			
Dusit Zoo	3	3	Bangkok
Chiengmai Zoo	7	2	Chiengmai
Khao Khiew Zoo	9	15	Chonburi
Nakornrajasrima Zoo	9	4	Nakornrajasrima
Songkhra Zoo	6	5	Songkhra
Subtotal	34	29	
Wildlife Breeding Centers			
Mae Lao Wildlife Breeding Center	2	0	Chiengrai
Pang Tong Wildlife Breeding Center	13	0	Mae Hong Song
Huai Yang Parn Wildlife Breeding Center	2	0	Chiengmai
Am Koi Wildlife Breeding Center	9	0	Chiengmai
Khao Koa Wildlife Breeding Center	13	2	Petchubun
Pu Khiew Wildlife Breeding Center	8	1	Chaichaaphum
Chong Gum Bon Wildlife Breeding Center	0	4	Sakraw
Kra Bok Ku Wildlife Breeding Center	13	3	Chachangsao
Bang La Mung Wildlife Breeding Center	65	27	Chonbuti
Huai Sai Wildlife Breeding Center	1	4	Petburi
Pang Nga Wildlife Breeding Center	3	1	Pang Nga
Subtotal	129	42	
Private Zoos			
Sriracha Tiger Zoo	1	0	Chonburi
Nong Nut Village	0	1	Chonburi
Safari Park and Resort	4	2	Kanchanaburi
Safari World	30	0	Bangkok
Phuket Zoo	1	2	Phuket
Crocodile farm and Samutprakarn Zoo	7	7	Samut Prakarn
Trakarn Tiger Park	1	0	Ubon Ratchatani
Pata Zoo	1	5	Bangkok
Lopburi Zoo	2	4	Lopburi
Millenian Stone Park and Pataya Crocodile farm	1	0	Pataya
Night Safari	6	12	Chiengmai
Subtotal	54	33	
Private Owners	85	39	No information
Total	302	143	

Present management system

Systems of conservation

Bears are legally protected by the Wild Animal Reservation and Protection Act (1960, amended 1992) and National Park Act (1961). These acts have established the

protected area system that protects forested areas and the wildlife within them. These laws prohibit commercial breeding of bears, hunting, and import and export of live bears or bear parts. Both species are listed in Appendix I of CITES, which prohibits international trade.

Organizations and scientists involved with bear conservation

- (1) Winit Poonawarat, Director, Wildlife Conservation Office (DoNP).
- (2) Budsabong Kanchanasaka, Biologist, Wildlife Research Division (DoNP).
- (3) Supagit Vinitpornsawan, Forester, Wildlife Research Division. (DoNP).
- (4) Thongchai Siengthienchai, Chief, Bang La Mung Wildlife Breeding Center. (DoNP).
- (5) Panit Sandprod, Director, Wildlife Breeding Division. (DoNP).
- (6) Robert Steinmetz, Ecologist, World Wide Fund for Nature-Thailand.
- (7) Dr. Sumet Kamonnoranah, Veterinarian, Khao Kheow Zoological Park.

Public education

Educating the public about wildlife conservation has been a function of the Wildlife Conservation Office (of the DoNP) since 1975. For example, books, posters, and other media have been produced and distributed to schools. Many national parks have nature centers that educate visitors.

The plight of bears gained national attention for the first time in 1995 with a high profile crackdown on wildlife restaurants that served bear paws to tourists. At that time, many live black bears and sun bears were rescued from restaurants and traders, and sent to wildlife breeding centers (Table 6.3). The Wildlife Conservation Office and Wildlife Fund Thailand (WFT, a local non-government organization) organized a year-long national public education campaign in response, using newspaper articles, fact sheets, television spots, and demonstrations. Subsequently, consumption and trading of bears decreased. In 1997, WFT, together with Global Survival Network (United Kingdom) produced a film as part of a campaign for the conservation of tigers, elephants, bears, rhinos and sea turtles. This film was broadcast in South Korea, Taiwan, Malaysia, Singapore, Hong Kong, and Thailand, with the goal of decreasing wildlife consumption. Follow-up campaigns were conducted in 1998. Since the late 1990s, there have been no education campaigns in Thailand focusing on bears.

Recommendations

Protected area management

- (1) Crop raiding by bears is not yet a serious problem. However, expansion of cultivated areas and increasing human use of forests may increase the frequency of such conflicts. Protected area managers should pre-

pare for this problem by considering the juxtaposition of locations used by bears and by corn farmers.

- (2) Patrolling and monitoring entire protected areas is currently an overwhelming and unrealistic task. To make this problem more manageable, a network of small bear recovery zones (~ 50 to 100 km²) could be established within key protected areas. The patrolling efforts of rangers could then be focused on these zones. Bear recovery zones should be locations with plentiful bear foods such as trees in the families Lauraceae and Fagaceae. Such zones would provide a biologically meaningful, geographically focused, and logistically realistic way for the efforts of protected area staff to be translated into population recovery for bears and other wildlife species.

Research

- (1) Monitor trends in bear occurrence and relative abundance using standardized sign surveys and camera trapping, across a sample of protected areas with different ecological and management conditions. This work would generate comparative lessons about which conditions promote successful bear conservation, and which do not, and provide a means to assess the results of conservation efforts (e.g., future range expansion and/or increased bear density being indicative of success).
- (2) Research the role of bears in seed dispersal. Bears are the largest-bodied seed dispersers in the forest, but details of their roles in this crucial process are little-known.
- (3) Research the process of recolonization and population recovery by bears in regenerating forest areas. This is starting to occur in at least one location (Nakhorn Ratchasima Province).

Wildlife trade and education

- (1) Work with Traditional Chinese Medicine practitioners and users to promote alternatives to bear gall bladder (many already exist).
- (2) Presently, gall bladders advertised as “bear” are exceptionally common at every wildlife market in the country, but many could be fake, or from other species of animals. To determine the actual severity of this trade, samples of “bear” gall bladders from different wildlife markets across the country should be tested, to determine what proportions are real and fake.
- (3) Initiate an education project targeted at customers of wildlife markets along Thailand’s international borders. The intention would be to dissuade potential buyers of bear products by making them aware of the beauty of bears, their conservation status in the region, and the buyers’ impacts on these factors. This

campaign could be conducted by a network of university-student environmental clubs in provinces near these markets (most universities have such clubs) with support from the Thai Department of National Parks and a national non-government organization.

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