

Sun Bear Conservation Action Plan

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IUCN Category: Data Deficient **CITES Listing:** Appendix I
Scientific Name: *Helarctos malayanus*
Common Name: sun bear, honey bear

Introduction

The sun bear (*Helarctos malayanus*) is the smallest of the eight bear species and the only tropical bear species inhabiting lowland tropical rain forests throughout much of Southeast Asia. Body size is small for the Ursidae with weight between 50–65kg, body length between 1.1 and 1.4m, and an average shoulder height of 70cm. Lekagul and McNeely (1977), describing Thailand's sun bears, stated that sun bears rarely weighed more than 50kg. The pelage of the sun bear is usually black, but can vary from reddish to grey (Payne *et al.* 1985). Almost every sun bear has a chest patch of white to reddish hair shaped usually in the form of a "U", but variations from circles to spots have been reported (Pocock 1941; Meijaard 1997). Hair length is the shortest of any bear species and is consistent with the hot tropical environment of the species.

Sun bear (*Helarctos malayanus*).



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The body form is unique among the Ursidae. The front feet are turned inward to a great degree. The claws on the front feet are long and heavy. The head is large, broad and heavy in proportion to the body (Pocock 1941). The teeth are massive, especially the canines, for the size of the animal. The palate is broad in proportion to the skull. The tongue of the animal is extremely long and can be extended during feeding up to 20–25cm (Meijaard 1997). The chest is flattened ventrally. A superficial conclusion of the habits of this bear based on its morphology would indicate that it is adapted to climbing trees, using its strong jaws and claws to tear into trees or other structures, and using its long tongue to extract food such as insects, larvae, or honey from cavities.

Historic range and current distribution

It is presumed that the historic distribution of the sun bear was throughout much of the lowland tropical forest habitat within its range. The extent of this forest has been extensively reduced by human activities and population increase. This has resulted in assumed reduction in numbers and range for sun bears and other species. Meijaard (1997) has compiled an excellent summary of the historic distribution records for the sun bear. Of interest are the historic records for sun bears in places like eastern Tibet and Sichuan, China (Lydekker 1906), Manipur state and Assam (Higgins 1932) and the upper Chitwan district in India (Wroughton 1916), places where the species is now extinct. There were old published reports of sun bears on the island of Java (Greve 1894; Cuvier 1834; Fischer 1829), but there was apparently never any evidence to document the species from this island in historical time, only fossil evidence from the Pleistocene (Erdbrink 1953).

The sun bear is now found in Southeast Asia from Burma, eastward through Laos, Thailand, Cambodia, Vietnam, and Malaysia. It is also found on the islands of Sumatra and Borneo in the countries of Indonesia, Malaysia, and Brunei. Current distribution is shown in Figure 11.1 (Servheen 1991). There are also persistent



Figure 11.1. Present estimated distribution of the sun bear (*Helarctos malayanus*) in Southeast Asia.

reports of sun bears in parts of southern China, especially in Yunan province and it seems likely that small numbers of sun bears still exist in this area. The occurrence of sun bears in Bangladesh is questionable with no recent confirmed records available. The sun bear may now be extinct in India (A. Johnsingh pers. comm.).

Status

The habitat of the sun bear is the lowland tropical rain forest, usually below 500m. Davies and Payne (1982) report the species is found throughout dipterocarp and lower montane forests of Sabah, Malaysia from 0 to 1,350m but is common nowhere. As lowland forest habitats become fragmented due to resource extraction and human settlement, it is reasonable to assume that sun bear populations in much of their remaining ranges are now fragmented and in many cases isolated due to human activity. Future range will be determined by the extent of

lowland forest habitat. As forests, especially lowland forests, are permanently converted to other uses such as plantation agriculture and human settlement, these areas are eliminated as suitable sun bear habitat. Given the levels of human activity within the range of the sun bear, it seems reasonable to assume that sun bear range will continue to decline and become more fragmented.

Legal status

The sun bear is listed under CITES Appendix I as a species in danger of extinction which is or may be affected by international trade. The sun bear is protected in Kalimantan and Sumatra in Indonesia and this protection prohibits killing, trade in dead or live animals, and keeping of bears as pets, although permits could be issued to allow pet keeping (Meijaard 1997). In Sabah, Malaysia the sun bear is listed as a game species. It may not be killed without a license and killing in forest reserve areas is limited.

Hunting is also permitted in Sarawak where sun bears are threatened by unregulated hunting (Caldecott 1988).

The effectiveness of legal protection varies greatly. While legislation exists in many countries within the range of the sun bear, sun bear parts and live bears are seen openly for sale in most areas where the species exists. In settled areas where oil palm plantations exist or where agricultural crops are planted in bear habitat, sun bears are regularly shot for depredations on such cultivated lands. In many areas, adult females are shot as depredating animals and their cubs are captured for pets and eventually sold, killed, or given to sanctuaries.

Population threats

Lack of knowledge about numbers of bears, distribution, population fragmentation, and mortality rates threaten sun bears throughout their range. The combination of lack of knowledge about numbers of bears and ongoing and unregulated mortality creates an ominous situation. Many sun bear populations have already gone extinct due to a combination of habitat loss and excessive human-caused mortality. It is likely that populations in many areas are now fragmented and isolated into small subpopulations that are sustaining increasing mortality. In many areas of sun bear range such as Burma, Laos, Cambodia, and Vietnam poaching of bears for sale or for food is unregulated and increasing (Mills and Servheen, 1991). Market economies and opening of borders now allow free trade of bears and parts of bears, thereby accelerating killing of bears. Judging from habitat loss alone, it is possible that sun bear numbers are less than 25% of the historic levels of 100 years ago. Given the lack

of knowledge of the sun bear throughout its range, it is likely that the species will disappear from many areas before their existence there has been documented.

Habitat threats

The habitat of the sun bear is the lowland tropical hardwood forests of Southeast Asia, Sumatra, and Borneo. These forests are highly valued for timber production and are rapidly being converted to second growth, plantation agriculture and human settlement. Logging activities now affect many lowland forest areas. Malaysia and Indonesia are the world's leading exporters of tropical hardwoods, and most of these tropical hardwoods originate in sun bear habitat.

The effect of secondary growth plant communities occurring after timber harvest on sun bear habitat use is unknown. Impacts of timber harvest on bear distribution, density, and food supply are unknown. Several types of silvicultural systems are in use throughout sun bear habitat and the impacts of each system on resident wildlife depend on the food habits and resource use strategies of each species (Johns 1985, 1986). The lack of knowledge of sun bear ecology makes understanding the effects of forest harvest on habitat use, food habits, and behavior impossible at this time.

Development of plantation agriculture for oil palm and rubber convert lowland tropical forest into habitat of limited value to sun bears. In addition, palm plantations present conflict opportunities for sun bears who may feed on the palm heart and destroy the palms in doing so. Such depredating bears are persecuted and destroyed by landowners.



Forest cleared for plantation development in sun bear habitat, Borneo.

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Management

Little management of sun bears occurs anywhere in their range. Animals depredating in agricultural areas are regularly killed by landowners. No population estimates exist nor is there any good information on the range of the species. No records of human-caused mortality are kept and since no population estimates exist, there is no mortality management nor level of sustainable mortality for any population unit. No habitat management exists for sun bears anywhere in the range of the species. Nothing is known about the impacts of timber harvest or other human activities on the food habits, habitat, or ecology of the species, so habitat management related to such activities is not possible.

Human-bear interactions

Human-bear interactions are characterized by depredation in agricultural areas with subsequent elimination of offending bears, hunting for consumption, sale of bears captured as young, sale of bear parts originating from illegal hunting and depredation kills, and effects of human resource extraction activities such as timber harvest on bears. Sale of sun bear gall bladders for use in traditional Chinese medicine occurs throughout the range of the species (Mills and Servheen 1991). Hunting of sun bears for food, for sale of parts, and for sale of young captured when the mothers are killed is ongoing throughout the range of the species and is unregulated. Meijaard (1997) reports that sale of bear parts such as gall bladders in Kalimantan, Indonesia accelerated with an influx of foreign users of traditional medicine. Local people had little demand for such parts but would kill bears to satisfy demands if such markets were available as foreign timber workers entered sun bear habitat.

Sun bears are known as fierce animals when surprised in the forest. Local people interviewed by Meijaard (1997) stated that the sun bear was the most fierce of tropical forest animals in its range and would attack humans and inflict serious wounds if surprised. Bears are feared because of this aggressive tendency.

Public education needs

In general there is little knowledge or concern about the status of sun bears in most countries within their range. This is due in large part to the fact that in Southeast Asia, wildlife conservation is concentrated on species of higher local and international concern such as tigers, elephants, and rhinos. Human coexistence with sun bears will depend upon basic knowledge being communicated to local people and government officials about the natural history of the



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Sun bear gall bladders for sale in Malaysia.

bears and their response to human activities. Given the lack of knowledge about the species, it is understandable that minimal information and effort is available to devote to education and public outreach efforts.

Specific conservation recommendations

The sun bear is the least known of the world's bears. Basic research on the sun bear is the highest priority research need. Basic information on the status, ecology, food habits, and distribution of the sun bear is needed everywhere in its range in Southeast Asia.

Methodologies to assess the distribution of many large mammal species in tropical forests are limited. It is especially difficult for nocturnal, solitary, non-vocal, and/or elusive species like sun bears. There are no readily available measure of changes in density of sun bears in tropical habitats. Results of transect surveys are often difficult to reproduce in different areas in order to gain comparative data. A method to quantify presence/absence and encounter frequency would be a useful not only for sun bears but for many other tropical forest mammals such as the Felidae. Such a method would allow assessment of distribution and the relative abundance of species in undisturbed and logged habitats.

Local scientists and managers in the countries within sun bear range need assistance in developing methods to survey nocturnal, solitary carnivores such as sun bears. There is a need for site-specific application of methods to assess distribution, density and the impacts of forest harvest on sun bear populations in representative habitats throughout the range of the species. These surveys would be useful to forest managers so they may better judge the impacts of timber harvest on native species and use the results in future forest management.

Timber harvest of lowland tropical rain forests of Southeast Asia produces second-growth forests and changes the distribution and abundance of sun bear foods. Plantation

development converts diverse forest ecosystems into monocultures. This changes the carrying capacity of ecosystems for wildlife, many of which are of value to local people and to biodiversity. Information on how large carnivores like sun bears adapt to this land conversion is minimal. Research on the basic life-history of the sun bear is needed to assess the impacts of forest conversion on biodiversity and carnivore survival. This information is also needed to develop management and conservation plans that address the needs of resident wildlife while allowing sustainable resource extraction to sustain local economies.

Research data about the status and biology of the sun bear should be made available to local people through development of informational presentation in schools, posters and brochures.

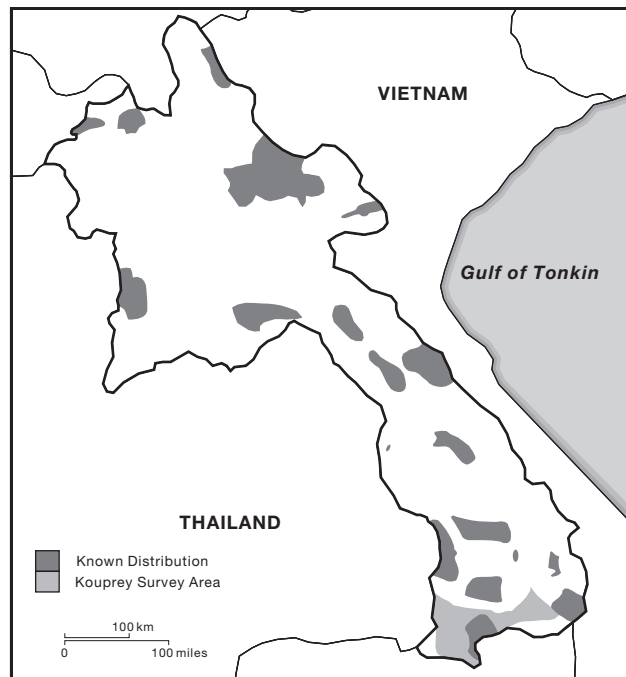
Status and management of the sun bear in Lao PDR

Richard E. Salter

Historic range and current distribution

Sun bears (*Helarctos malayanus*) were reported by Deuve (1972) to occur in all provinces of Laos. The regional range map in Lekagul and McNeely (1977), which presumably represents the historic range of the species, shows sun bears as occurring throughout Laos, with the possible exception of the extreme northeastern corner of the country (Figure 11.2). Current distribution is shown in Figure 11.2.

Figure 11.2. Present distribution of sun bears (*Helarctos malayanus*) in Lao PDR.



Status

Sun bears are widely distributed throughout the country, with the probable exception of the most heavily settled and cultivated portions of the Mekong Plain. Population levels are unknown but the frequency of reports during village interviews (90.4%, n=324) suggests that this species is still relatively abundant. Sun bears reportedly occur in all major proposed protected areas surveyed to date (see current distribution map), although it should be noted that the location of these areas is biased towards heavily forested and hilly parts of the country.

Legal status

Hunting of sun bears is prohibited throughout Laos and in all seasons, except with permission of the Council of Ministers, by Decree No. 118/PCM dated 5 October 1989 (Decree of the Council of Ministers on the Management and Protection of Aquatic Animals and Wildlife and Hunting and Fishing) and by subsequent instructions on the execution of the decree. Individual animals can be killed in self-defense or in defense of property but remain the property of the State. Extraction and export taxes of US\$200 for whole animals, US\$0.70/g for bile, US\$18/kg for skins, and US\$10.50/kg for feet are payable under Decree of the Council of Ministers No. 47/CCM, on the State Tax System (dated 26 June, 1989), although transporting, possessing, or trading bears or bear parts without authorization is prohibited. Penalties for violations of hunting and trade regulations are specified in the 1989 Penal Code. However, hunting and trade are very difficult to control and there is very little enforcement capacity.

Population threats

Firearms and subsistence hunting are very widespread in rural Laos, and it is likely that sun bears are killed or wounded whenever opportunity permits. There is some trade in bear gall bladders, paws, skins, and live cubs, both internally and to neighboring China and Thailand (Salter pers. obs. 1988–93; Chazee 1990; Martin 1992; Srikosamarata *et al.* 1992), although as virtually all of this is unregulated, the volume and value of trade has not been determined.

Habitat threats

Threats to sun bear habitat include degradation and loss of dense forest cover as a result of logging, shifting cultivation, locally intensive grazing, and annual fires over large areas. These factors often occur in combination

and can result in rapid degradation of previously forested areas. At present, closed forest covers an estimated 47% of the country, mainly in the center and the south.

Management

No specific management actions have been taken, other than as indicated under Legal Status.

Human-bear interactions

Bears are fairly commonly reported as crop pests and occasionally as livestock predators (Forest Resources Conservation Project unpublished interview data), but whether this primarily involves Asiatic black bears or sun bears is unknown. As elsewhere in Southeast Asia, villagers recognize close encounters with sun bears to be potentially or extremely dangerous.

Public education needs

Broad educational measures are needed to raise the general level of conservation awareness among rural and urban populations. Measures in rural areas should focus on the need to protect sun bears and other protected or otherwise vulnerable species from hunting. In urban areas, protection

measures should focus on discouraging the keeping of bears for pets and the purchase of bear parts for medicine or trophies. There is also a need for educational material and displays at entry and exit points to discourage tourists from purchasing wildlife souvenirs.

Specific conservation recommendations

1. Strengthen and enforce existing hunting and trade regulations, including training and equipping of enforcement and customs staff, and ensuring that government staff at all levels are aware of existing regulations.
2. Accession to CITES.
3. Develop public education measures as above.
4. Develop a monitoring system to track and assist in controlling the sale of bear parts.
5. Complete a national system of protected areas, buffer zones, and forested corridors, and develop other habitat protection measures as appropriate.

Status and management of the sun bear in Vietnam

See Status and management of the Asiatic black bear and sun bear in Vietnam (Chapter 10, page 216) and Figure 10.7.