

5.1 Tiger

Background

There are three extant Tiger subspecies in south-east Asia – the Indochinese Tiger *Panthera tigris corbetti*, Malayan Tiger *P. t. jacksoni*, and Sumatran Tiger *P. t. sumatrae*. Two other subspecies historically found in south-east Asia, both endemic subspecies from Indonesia, *P. t. sondaica* and *P. t. balica*, are now recognised as extinct. The IUCN Red List of Threatened Species categorises the Tiger as Endangered, and the species is considered to be facing a very high risk of extinction in the wild (IUCN, 2007). As of 1998, it was estimated that fewer than 7000 Tigers remained in the wild, with approximately 9000 living in captivity (Seidensticker *et al.*, 1999). The effective population size has been re-estimated to number fewer than 2500 adults in the wild (IUCN/SSC Cat Specialist Group, 2002).

Tigers are threatened by loss of habitat and prey species. However, illegal hunting for commercial trade poses the greatest threat to the survival of the species. Other human-animal conflict also leads to the killing of Tigers, but killing to meet the demands of illegal trade has the greatest potential to wipe-out wild populations relatively quickly (Nowell and Jackson, 1996). The most common factor driving the harvesting of Tigers is the use of bones and other body parts in traditional medicine, especially in China (Nowell, 2000), but also in other countries such as Republic of Korea, Singapore, Malaysia, Vietnam and Japan (Shepherd and Magnus, 2004). In Chinese and Vietnamese cultures this includes the demand for Tiger meat, which is considered a health tonic. In some Malaysian restaurants, the meat is offered as a luxury or as a novelty food (TRAFFIC Southeast Asia, in prep.). While Tiger parts are also traded for ornamental purposes, this is generally thought to be less common than in the past, with the main exception being Tibet where the demand for Tiger pelts for use in traditional clothing persisted as a key factor driving the hunting of this species in Nepal (Dinerstein *et al.*, 2007).

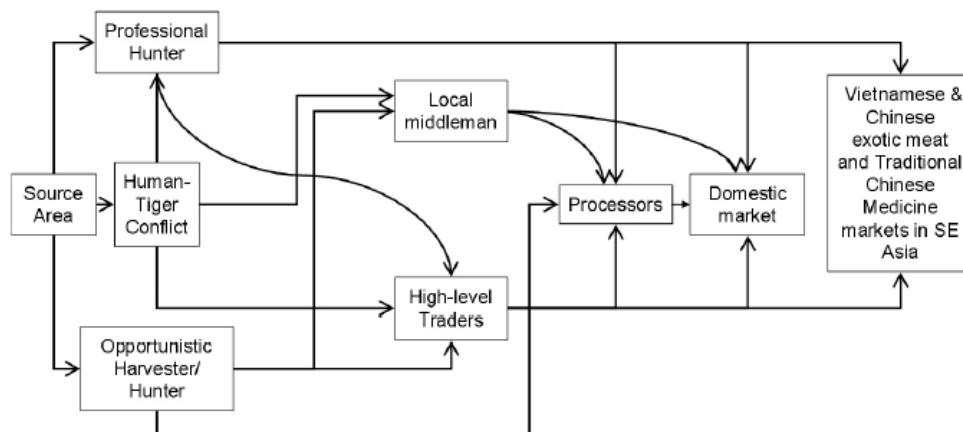
In many Asian countries with rapidly growing economies, and increasing purchasing power among parts of their populations, there is increasing evidence of persistent demand for Tiger and other wild animal products. One example includes a recent case in Vietnam where a woman and her accomplices were apprehended for illegally storing two chopped-up Tigers in a refrigerator for use in the preparation of traditional medicine. While the origins are uncertain, Vietnamese authorities have suggested that the Tigers came from Myanmar or Lao PDR, adding weight to the assumption that countries such as Malaysia, Myanmar, Cambodia, Lao PDR and other Tiger range States supply East Asian and Vietnamese consumer markets. There has been some evidence in recent years, however, that demand for medicines claiming to contain Tiger products has been slowly declining (Nowell, 2000), with the open availability of

Tiger products in China's domestic market for traditional medicines considered to have been significantly reduced through a combination of regulatory measures and awareness campaigns (Nowell and Xu, 2007). However, the proposed opening up of Tiger product sales from Tiger farms in China, particularly tonic wine for more general consumption would be likely to reverse this trend (Nowell and Xu, 2007). Despite declines in some markets, there was no evidence of a major reduction in Tiger poaching at the turn of the century (Nowell, 2000). However, more recent data based on assessments in Tiger Conservation Landscapes (TCLs) indicates that commercial poaching pressure on many Tiger populations has declined as a result of the domestic ban on trade in Tiger products in China (IUCN/SSC Cat Specialist Group, 2007), and as discussed in Nowell and Xu (2007), based on the work of Sanderson *et al.* (2006). However, poaching pressure remains high in some areas, e.g. in Sumatra, Malaysia and Myanmar.

Large areas of contiguous habitat and a substantial prey base are required for Tigers to survive, and thus Tiger populations have also been negatively affected by illegal and unsustainable hunting of prey species, considered the second-most severe threat according to Sanderson *et al.* (2006). Tigers are also threatened by habitat conversion and degradation, which causes declines in prey base as well. In Indochina (Vietnam, Lao PDR and Cambodia), the potential for this trend to be exacerbated is amplified by the imminent transnational economic corridors where large-scale infrastructure development including the upgrading and building of new roads which, if not managed carefully, is likely to further degrade and fragment important Tiger conservation landscapes (e.g. Shepherd *et al.*, 2007). Tiger habitat has decreased by 40% since 1995 and Tigers now occupy only 7% of their historical range (Dinerstein *et al.*, 2006). On Sumatra, the last island holding wild Tigers in Indonesia, the prey base and suitable habitat are rapidly declining (Shepherd and Magnus, 2004). It is worth noting, however, that Tigers recover quickly where sufficient protection is provided to enable prey base recovery and Tigers to live without threat of hunting (Dinerstein *et al.*, 2006).

Tigers have been identified as surviving in 76 TCLs, with a worst case scenario of 543 forest fragments across 13 countries holding remnant populations. About half of these TCLs are large enough to support an estimated 100 Tigers or more, with the largest seven offering the potential to support 500 Tigers or more (Dinerstein *et al.*, 2006).

Figure 21: Trade flow diagram for Tigers



Trade structures

The majority of Tigers are hunted by professional or semi-professional hunters who sell directly to traders (Nowell, 2000; Shepherd and Magnus, 2004). A significant portion of Tigers are killed as a result of conflict with or for profit by local communities with sale often to middlemen or smaller traders,

although as indicated above, the majority are killed deliberately for profit (Nowell, 2000; Shepherd and Magnus, 2004; TRAFFIC Southeast Asia, in prep.). The above trade chain diagram (Figure 21) illustrates the general flow from source to consumer of a Tiger and Tiger parts and derivatives as it relates to the four key countries (Cambodia, Indonesia, Lao PDR and Vietnam) in which this study was undertaken. It is important to note that this trade chain diagram is only generic and as such may not apply exactly in this manner across the region.

Source areas

While exact numbers are not known, now out-dated estimates from the 1980s suggested that there were approximately 400-500 Sumatran Tigers remaining in Indonesia, although it is likely that there are fewer now. Accurate numbers of wild Indochinese Tigers are not available but one dated compilation of estimates ranged from 1050-1750 (Jackson, 1993). More recent but still relatively outdated reviews (Duckworth and Hedges, 1998; Rabinowitz, 1999) have not included population estimates as the data were simply not available. In Indochina, where Tiger populations are so low, it is probably better to talk about the number of landscapes that may, if protected, provide sufficient resources for Tigers to survive. According to Dinerstein *et al.* (2006) this is 12, with only four landscapes with the potential for over 100 Tigers to survive, providing that they are adequately protected. India and Nepal are now the key source areas supplying East Asian markets.

Actors

Harvesters

Mostly professional or semi-professional male hunters, but also include, to a lesser extent, opportunistic hunting and revenge killing by locals in response to conflict with Tiger populations.

Traders

Includes local middlemen where Tigers are caught by local hunters, but is dominated by high-level traders who deal directly to local processors and retailers or internationally.

Processors

Not widespread and largely consist of small-scale family-owned and -operated businesses processing for the traditional medicine market. This is particularly the case in Vietnam, but in other countries processors and retailers are usually one and the same. In Indonesia, where Tiger-based medicines are rarely used, the raw parts are exported, and are only partially processed locally (e.g. skinned, or with bones removed and sent separately).



Wild meat stall, Vietnam.

Credit: TRAFFIC

Retailers

Usually established traditional medicine businesses or restaurants that supply a demand in major urban centres, servicing demand from mostly ethnic Chinese and Vietnamese people, although in Sumatra, ethnic Indonesian people carry out much of the trade. Retailers include black-market or underground dealers who supply a limited and discrete client base. Demand includes traditional medicine and “exotic meat”. Retailers usually operate in centres where enforcement is weak, and in some cases, such as in places in North Sumatra, Indonesia (Shepherd and Magnus, 2004), Tiger parts are sold openly.

Consumers

Usually middle- to high-income earners and in some cases, such as in Vietnam, consumption of wild meat generally is particularly associated with high-ranking government officials and the business community (Venkataraman, 2007).

Interventions

Livelihood-based interventions

Given that there are some reports of opportunistic hunting of Tigers by local communities, it would seem fair to assume that the species is recognised as a potential source of income for the rural poor. However, given low population densities, the dangers associated with hunting, and the potential of being caught and punished, it would seem to be very unlikely that local communities would depend to any significant extent on the poaching of Tigers as a means of supporting their livelihoods. Livelihood-based interventions aimed specifically at reducing harvesting of Tigers were considered to be largely unsuccessful. This is likely to be in line with the point made above suggesting that, by and large, local communities do not depend on harvesting of Tigers as an ongoing stable source of income, although Tigers may sometimes be hunted by local communities either opportunistically or to mitigate a conflict situation.

Those involved in the hunting of Tigers were said to be from a variety of income groups, including the poorest third of households. It is worth considering that, as high prices are paid for Tigers, those involved in hunting and trading of Tigers are less likely to be poor. The majority of Tiger hunters are professionals, often working as part of organised and well-financed teams.

Market-based interventions

Very few responses were recorded for Tigers with regards to the effectiveness of market-based interventions, including the effectiveness of artificially manipulated market prices, certification, and tax incentives – reflecting the fact that this is an entirely illegal trade.

Legislation and regulations

Tigers have been included in Appendix I of CITES since 1976. Further action was taken by CITES members in 1994, when they called for expanded Tiger conservation efforts, including the establishment of internal bans on trade in Tigers and Tiger parts.

CITES Resolution Conf. 12.5, adopted by consensus, reinforced these earlier measures by asking Parties to prohibit trade in Tiger parts and derivatives, both internationally and domestically, even from captive-bred specimens. Despite this, there has been recent interest in some countries, notably China and to a more limited extent Thailand and Vietnam, to legalise domestic Tiger trade from farmed specimens. However, there is no evidence that legalising such trade would reduce the pressure on wild populations, given such factors as the high costs involved in farming as compared to poaching, the likely premium value of wild-sourced products, and the difficulty in distinguishing the origin of products once on the market (Anon., 2007).

Despite internationally-recognised CITES protection, and protection at national levels, poaching networks in the region are generally well developed and professional, particularly where the trade in Tigers is concerned. Therefore, reducing the poaching of Tigers is a significant challenge. For example, in Indonesia, despite the establishment of specialised units by the government to reduce Tiger poaching, TRAFFIC's research indicates that Tigers in Sumatra continue to be poached on a large scale and Tiger parts are widely available in markets on the island (Shepherd and Magnus, 2004; Ng and Nemora, 2008).

Furthermore, the results of the questionnaire used for this study indicate that there is little consensus regarding the effectiveness of CITES as an intervention with responses representing a spread from very effective to not successful. By contrast, national level harvest legislation was generally considered to be somewhat to very successful by those that responded, and is consistent with the fact that in all three Indochinese countries and Indonesia there is relatively strong legislation in place to protect Tigers. This corresponds with the conclusions of Nowell and Xu (2007), based on data provided in Sanderson *et al.* (2006), that while international trade bans have helped conserve wild Tigers, national trade bans appear to have been even more effective. However, given the open availability of Tiger parts in Indonesia, and the continual decline of wild Tiger populations in all four countries, it is not clear if national legislation is effective in a practical sense, or if awareness alone of national legislation is high, but enforcement is still lacking.

Zoning and establishment of protected areas for Tiger conservation was considered somewhat to slightly effective with no response indicating that it was very effective. This is largely consistent with the responses for other taxa, such as tortoises and freshwater turtles and agarwood, as well as consistent with the trend across the four countries. This is not entirely surprising given that major causes in Tiger population decline include habitat loss and fragmentation and weak enforcement particularly at the protected area level (Dinerstein *et al.*, 2007).

In Indochina, where bilateral wildlife trade/conservation agreements exist between Vietnam and Lao PDR, for example, they are not focused on Tigers specifically and are largely considered to be ineffective because of a lack of funding and resources allocated to their implementation. Worth noting, however, is the response to traditional norms which suggests that respondents believed this measure to be somewhat successful and as such may be worth investigating further.

Awareness-raising

Generally, efforts to raise awareness about the plight of Tigers in Indochina and Indonesia have been part of broader education campaigns or elements of a particular site-based conservation project. Most conservation organisations have raised the issue in one form or another, but there has yet to be a concerted campaign directed solely at the various stakeholder groups involved in the hunting, trading, processing and consuming of Tigers.

Awareness-raising in the four target countries was largely considered to be unsuccessful as an intervention aimed at altering consumer behaviour [although it should be noted that, in Vietnam, at least, consumer awareness that Tigers are endangered is very high (Venkataraman, 2007)]. At the harvester level it was the other way around, with most respondents recording success in increasing awareness of harvesters. This was also true for efforts at raising awareness among Tiger traders, with most respondents indicating that this was a successful approach. However, it is worth noting that while awareness-raising efforts aimed at reducing the consumption of Tiger products in China, in combination with regulatory approaches, is generally considered to have been successful according to a recent study by Nowell and Xu (2007), awareness-raising has not seemed to have had a noticeable effect on the levels of Tiger poaching in Indochina or Indonesia, where these animals are often sourced.

Improved resource management

Despite global investment in Tiger conservation by NGOs of over USD31 million between 1998 and 2003, populations are still said to be declining (Dinerstein *et al.*, 2007). One of the most successful efforts aimed at conserving Tigers has been in the Russian Federation, where strong enforcement has led to a significant recovery of the population. Enforcement has focused on protection of Tigers and their prey base in the wild, as well as anti-trafficking operations (Galster and Eliot, 1999). This has been done in combination with landscape-scale conservation initiatives (Miquelle *et al.*, 1999).

In Indochina, a number of initiatives are underway to improve landscape connectivity not only for Tigers but for the conservation of other species as well. However, these are still in the very early stages of development and as yet do not offer immediate potential to enhance the survival of Tigers across these landscapes. In terms of ongoing activities in Indochina and Indonesia aimed at Tiger conservation, limited information was available on the impact of improved resource management; suggesting that very few respondents had provided input or answered questions related to whether projects focussing on conservation resource management had had positive outcomes specifically in relation to Tiger conservation. Where responses were provided, and even though they were limited, the indication was that it was possible to achieve some moderate success in supporting Tiger conservation through resource management projects.

Non-legally binding agreements were only considered to be slightly effective, while species management plans for Tigers were shown to be at least slightly effective with approximately a quarter of respondents believing this method to be very effective.

Summary

Significant levels of funding have already been invested in the conservation of Tigers across their range, yet populations are still declining. Building on the body of knowledge and experience from conservation efforts to date, and using the outcomes of the study questionnaire, some important next steps can be identified.

Law enforcement efforts need to be increased throughout the various levels of the Tiger trade chain including among poachers/hunters, professional traders, processors, retailers, and consumers. In addition, stronger law enforcement on the ground in key locations is required to enable prey species populations and consequently Tiger populations to recover. Law enforcement activities need to be extended to enforcing controls on the sale of illegally harvested wildlife in restaurants in Indochina and in consumer countries such as China and Malaysia, with a particular focus on Tiger prey species, in order that the recovery of Tiger populations is not undermined by a lack of prey. It is also important that existing laws and policies banning trade in Tiger products, which are largely in place and generally well-developed in most countries, are maintained. Where such provisions do not exist, priority should be placed on integrating such bans into national level legislation.



Customs office on the Lao PDR/Cambodia border.

Credit: TRAFFIC/Emily Hicks

Multi-agency task forces, involving police, Customs and wildlife/forest officers, should be established to ensure that gaps in jurisdiction, power and resources are reduced to allow focus on the organised nature of the wildlife trade. These national and local-level task forces can then provide the building blocks for regional efforts to combat illegal trafficking under the Association of Southeast Asian Nations (ASEAN) Wildlife Enforcement Network.

Efforts to raise awareness among harvesters and traders should be continued, as these approaches have generally been considered to have been effective. However, as less success has

been recorded in terms of targeting consumers in some countries, new and innovative approaches and strategies may be required, especially in Indochina and Indonesia where significant consumer markets exist and where only limited awareness campaigns aimed at reducing Tiger product consumption have been initiated. This may include the use of mass media and education campaigns over the long term aimed at reducing the demand for Tiger products.

Recognising that the challenge of conserving Tigers from the threat of illegal trade is embedded in the socio-economic, political, and cultural complexity of the particular region in question, a unique and appropriate blend of interventions needs to be designed that takes into account this complexity.