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A note on felid trade at local markets in Myanmar

With its biogeographic position, its multiple international borders and changing political circumstances, Myanmar is a country of on-going felid conservation priority. To complement pre-existing longer term illegal wildlife trade studies, we initiated a short scoping survey focused on five study sites including those located in the interior of Myanmar (Kyaiktiyo, Mandalay and Min Bu Shwe Sat Taw) and along the Thailand border (Myawaddy and Tachileik). We confirm notable ongoing open trade in at least six species of Asian felids (jungle cat *Felis chaus*, clouded leopard *Neofelis nebulosa*, leopard *Panthera pardus*, tiger *Panthera tigris*, Asiatic golden cat *Catopuma temminckii* and leopard cat *Prionailurus bengalensis*) at three of these study sites (Kyaiktiyo, Min Bu Shwe Sat Taw and Tachileik). With regard to field skins, we found tiger to be the most expensive (US$ 1,100) and jungle cat to be the cheapest species available (US$ 11). However, full felid skins (and full skulls) derived from clouded leopard were most commonly observed, supporting pre-existing concerns that this species is under particular pressure from poaching in Myanmar. Based on our findings, we support calls for increased donor support for research into illegal felid trade dynamics in Myanmar and for improved cooperation between national and international enforcement agencies on CITES to help conserve remaining wild populations.

Myanmar, by virtue of its relatively large areas of remaining forest may harbour significant populations of wild felids (see species entries in Table 1 taken from Nijman & Shepherd 2015). Although to date relatively few quantitative field surveys focused on wild felid populations have been carried out (Nijman & Shepherd 2015), results from existing studies suggest serious populations declines due to factors such as hunting and habitat loss (e.g. Lynam et al. 2006, Lynam 2010). To what extent the illegal wildlife trade contributes to these declines have not yet been fully quantified (Shepherd & Nijman 2015). However, in Myanmar illegal wildlife trade is widespread, involves numerous species, and is often carried out openly (Shepherd & Nijman 2008, Nijman & Shepherd 2015).

Felid skins, sold for use as decorative items, have been noted during market surveys throughout Asia (Shepherd & Nijman 2008, D'Cruze & Macdonald 2015, Nijman & Shepherd 2015). Similarly, researchers have also documented trade in their bones for medi-

cines, meat for exotic dishes and live animals for use in the exotic pet trade (Shepherd & Nijman, 2008, D'Cruze & Macdonald 2015, Nijman & Shepherd 2015). A recent in-depth survey of illegal big cat derivatives at two selected border town markets (Tachileik and Mong La) revealed that such illegal activity is an issue of significant felid conservation concern in Myanmar with derivatives (involving an estimated 1626 individuals originating from five different felid species) observed between 1991 and 2014 (Nijman & Shepherd 2015).

With its biogeographic position, its many international borders and changing political circumstances, Myanmar is a country of ongoing felid conservation priority (Nijman & Shepherd 2015). Studies have already highlighted the value of opportunistic market surveys to demonstrate the persistent presence of felid derivatives at border towns in Myanmar (e.g. Kyaiktiyo (Golden Rock), Tachileik, Three Pagodas Pass and Mong La), as well as providing insights into how these markets differ with regards to volume and diversity of traded species (Shepherd & Nijman 2008, Nijman & Shepherd 2015). In order to provide more information, we initiated an additional scoping survey of five study sites in Myanmar (including one, Min Bu Shwe Sat Taw, that appears to be previously unreported). Three of the sites are located in the country's interior and two along border towns adjoining Thailand (Myawaddy and Tachileik).

Methods

We carried out scoping surveys over a period of one year between May 2016 and April 2017 (Supporting Online Material SOM Table T1). Each survey lasted between 1 and 3 days with Sapai Min (experienced in such research) being present during all fieldwork. We prioritised five locations where wildlife derivatives are commonly known to be sold: (1) Kyaiktiyo (Golden Rock); (2) Mandalay; (3) Min Bu Shwe Sat Taw; (4) Myawaddy; and (5) Tachileik (Fig. 1). Myawaddy and Tachileik cater largely for tourists entering the town from across the border in Thailand (Nijman & Shepherd 2015). A 'pagoda festival' takes place at Min Bu Shwe Sat Taw in February each year. We carried out surveys at this location before, during and after this cultural event (SOM T1). Myanmar is, and has proven to be, a challenging country to work in, especially when documenting illicit activities (Nijman & Shepherd 2015). As such, we carried out scoping surveys discretely by engaging traders in casual conversation focused on the origin of the cat species traded, clientele, and trade routes. We also made observations of any felid derivatives (i.e. dried genitals, bones, claws, full skeletons, skin, skulls and teeth) while casually moving around stalls, taking photographic evidence when possible. We identified any fakes [e.g. teeth made of resin, fake fur (e.g. goat skin painted to mimic tiger fur) etc.] and excluded them from our study. When possible, we also recorded information regarding product prices.

Results

During our scoping surveys we observed the sale of derivatives belonging to six different felids that could be confirmed to species level (jungle cat, clouded leopard, leopard, tiger, Asiatic golden, and leopard cat; Fig. 2 & SOM Figures F1-F3). We found no evidence of the trade in felid derivatives at Mandalay or Myawaddy. However, we observed trade in felid derivatives at Kyaiktiyo (21 items from four species via seven vendors), Min Bu Shwe Sat Taw (29 items from at least five species via eight vendors) and Tachileik (56 items from five species via eight vendors; Table 1).

With regards to full felid skins, we found those from clouded leopard most frequently across all survey sites (n = 11), followed by leopard (n = 5), leopard cat (n = 4), Asiatic golden cat (n = 3), jungle cat (n = 2) and tiger (n = 1; Table 1). We found full tiger skins to be the most expensive felid derivative available (1500,000 Mayanmar Kyat MMK (US$ 1,100)), followed by full clouded leopard skins (between 350,000 and 700,000 MMK (US$ 257 and US$ 530)). We found jungle cat skins to be the cheapest full felid skins available (15,000 MMK (US$ 11)). With regards to complete felid skulls, we found those from clouded leopard most frequently across all survey sites (n = 8), followed by tiger (n = 4), jungle cat (n = 1), and leopard (n = 1; Table 1). In Tachileik we found four markets (Tar Lot, Ah Kha, San Sai and Wan Kaung). But we only found felid derivatives for sale at Tar Lot. In terms of wildlife, we observed live birds for sale at San Sai and monitor lizard (*Varanus* spp.) derivatives at Ah Kha. We observed no live wildlife or derivatives being sold at Wan Kaung. In addition to felid derivatives, we also observed derivatives from a variety of wildlife species being sold at both Kyaiktiyo and Min Bu Shwe Sat Taw. Derivatives observed at these survey sites included those from Asiatic black bears *Ursus thibetanus*, Asian elephants *Elephas maximas*, porcupines *Hystrix* spp., pythons *Python* spp., fresh

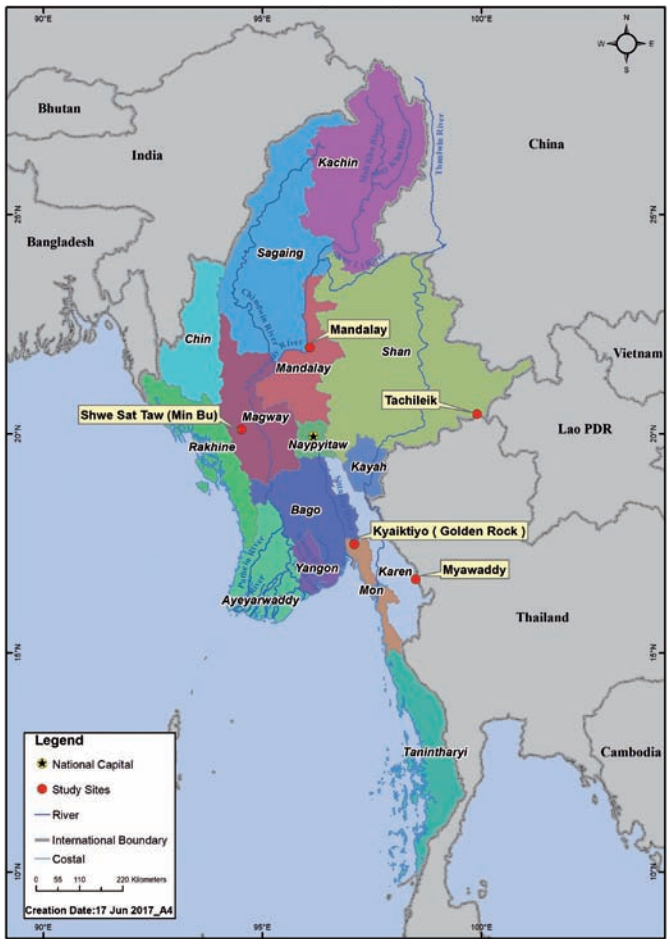

Fig. 1. Map of five survey sites in Myanmar visited during our study.

Fig. 1. Felid derivatives offered for sale at three survey sites in Myanmar from which data were available. Species IUCN status: EN = Endangered; VU = Vulnerable; NT = Near Threatened; and LC = Least concern. Species CITES status: I = Appendix I; II = Appendix II. National protection status (Myanmar Wildlife Protective Law MWPL 1994): CP = Completely Protected species; P = Protected; - = Not Listed.

Common Name	Scientific Name	Conservation / Protected Status			Observed Derivatives	Survey Sites			Total	Price (MMK)
		IUCN	CITES	MWPL		Kyaiktiyo	Min Bu Shwe Sat Taw	Tachileik		
Asiatic Golden cat	*Catopuma temminckii*	NT	I	CP	Full skins	1	-	2	3	60,000
Clouded leopard	*Neofelis nebulosa*	VU	I	CP	Full skins	3	1	7	11	350,000 - 700,000
					Pieces of skin	-	-	20	20	-
					Full skeletons	1	-	-	1	-
					Skulls	-	6	2	8	-
Jungle cat	*Felis chaus*	LC	-	-	Full skins	-	2	-	2	15,000
					Skulls	-	1	-	1	-
Leopard	*Panthera pardus*	VU	I	CP	Full skins	4	-	1	5	700,000
					Skulls	-	1	-	1	-
Leopard cat	*Prionailurus bengalensis*	LC	II	P	Full skins	-	1	3	4	25,000
					Pieces of skin	-	-	10	10	-
Tiger	*Panthera tigris*	EN	I	CP	Full skeletons	1	-	-	1	1,500,000
					Penises	4	-	-	4	-
					Pieces of bone	1	4	2	7	-
					Pieces of skin	-	-	20	20	-
					Teeth (canines)	8	4	4	16	-
Unidentified small cats	Felis spp.	-	-	-	Skulls	X	8	X	8	-

water turtles Testudinidae and various species of deer Artiodactyla.

Discussion

We confirm a significant and ongoing open trade in at least six felid species at three different locations in Myanmar (Kyaiktiyo, Min Bu Shwe Sat Taw and Tachileik), with derivatives of globally threatened species offered for sale.

This on-going trade activity is of particular conservation concern because it represents the open trade of legally protected species within Myanmar. Asiatic golden cat, clouded leopard, leopard and tiger are afforded the highest possible level of national legal protection (listed as 'totally protected' species under Myanmar Law: State Law and Order Restoration Council Law No 583/94.1994 (Shepherd & Nijman 2008;)) presumably because of their relatively high current conservation status (Table 1). However, hunting of non-protected wildlife (i.e. jungle cat and leopard cat) still requires a permit from the Director General of the Forest Department, who may grant a hunting license, but apparently does not do so (Nijman & Shepherd 2015). Therefore no parts originating from any cat species from Myanmar should be in trade. An egregious lack of enforcement is likely allowing this illegal activity to continue (Nijman & Shepherd 2015). Nonetheless, Chapter XI of the aforementioned 1994 legislation offers guidance on penalties which, for the killing of a fully protected species, can be up to 7 years in prison or a fine of 50,000 MMK.

Furthermore, Asiatic golden cat, clouded leopard, leopard and tiger are also afforded the highest possible level of international legal protection (CITES Appendix I) with international trade in leopard cat also being restricted (CITES Appendix II; Table 1). Of the markets visited during this study, Myawaddy and Tachileik are both situated on international borders with Thailand. Although we found no evidence of the trade in felid derivatives at Myawaddy, our study confirms notable on-going open trade in Asian felid derivatives by at least eight vendors at Tachileik (Table 1). Although survey methods may have differed, restricting direct comparison, this level of illegal trade activity appears to be similar to that recorded in prior studies. Nijman & Shepherd (2015) observed 6 different illegal vendors in Tachileik during 2013. Like Myanmar, Thailand is a signatory country to CITES, prohibiting any cross-border trade of these Asian cat species, their parts and derivatives (Shepherd & Nijman 2008). Although, increased enforcement activity in Thailand may have helped to decrease their availability, it is clear that illegal cross border trade remains ongoing.

Documenting illegal wildlife trade activity is difficult and sometimes dangerous, because of the covert and potentially violent behaviour of the actors involved (UNODC 2016). Although our survey observations are fragmentary, they corroborate previous findings (with regards to felid diversity and derivative volumes) of more in-depth studies carried out over a longer time period (e.g. Nijman & Shepherd 2015). Of particular note, with regard to the offered full felid skins, clouded leopard was the most common species observed. In total, we observed skins from 11 different individuals' at all three sites where felid trade was observed. As such this species appears to be under particular pressure from poaching in Myanmar (Nijman & Shepherd 2015).

Illegal wildlife trade is a major threat to the survival of felids in Asia with actors typically trafficking protected species belonging to a variety of taxonomic groups along the same trade routes (Nowell & Pervushina 2014). To address the conservation threat posed by illegal trade in felid derivatives (and indeed other protected species), we support existing calls for increased donor support for

research into illegal felid trade dynamics in Myanmar, increased cooperation between national enforcement bodies across international borders (Lynam et al. 2006, Nijman & Shepherd 2015), improved compliance of trade data management platforms (D'Cruze & Macdonald 2015), the registration and periodic destruction of any privately held stockpiles and the development of comprehensive legal frameworks to prevent laundering via legal commercial breeding facilities (Decision 14.69 of CITES Resolution Conf. 12.5 (Rev. CoP16)).

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Supporting Online Material SOM Table T1 and Figures F1-F3 are available at www.catsg.org

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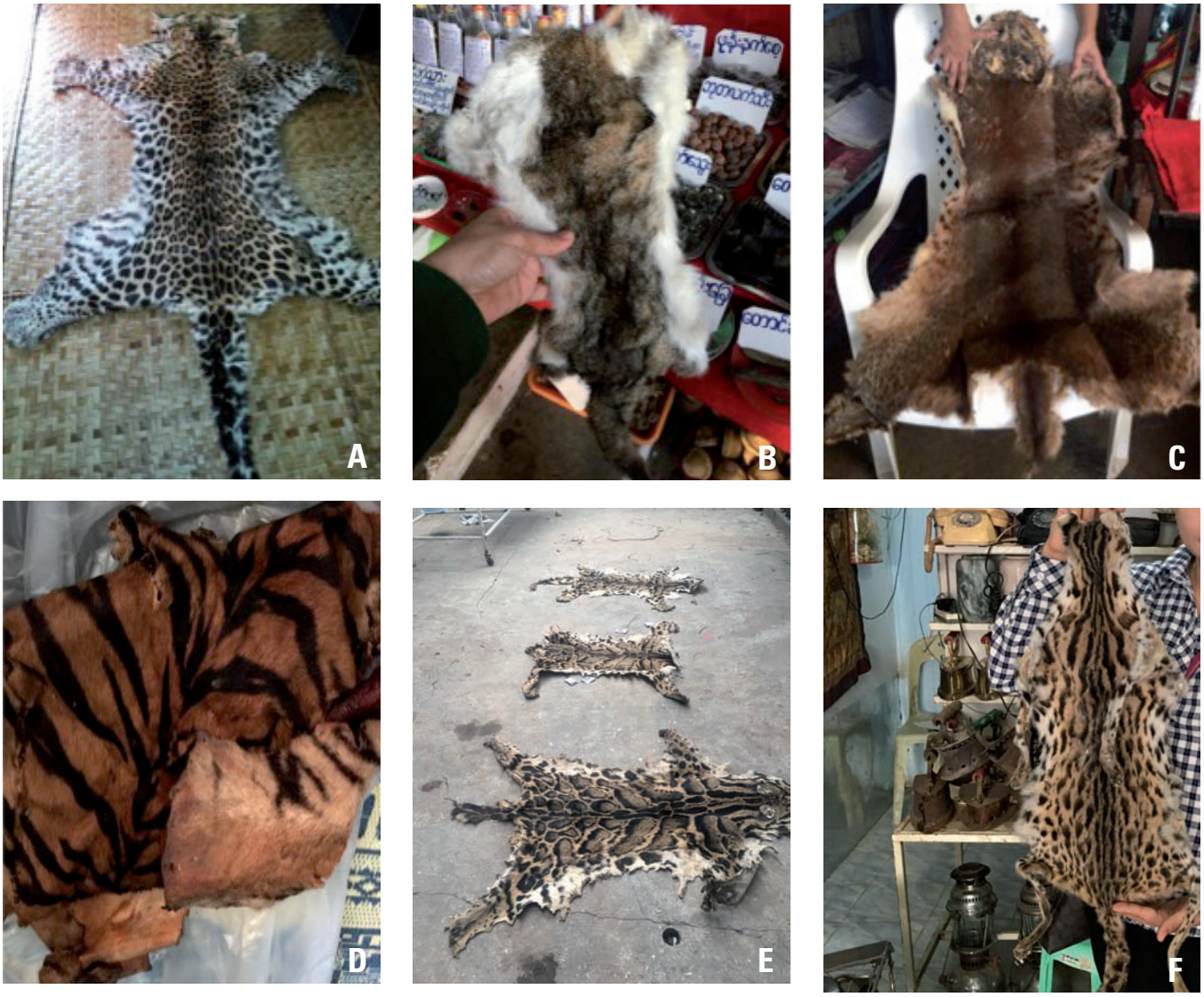

Fig. 2. Full skins observed being offered for sale during market surveys in Myanmar. A: Leopard; B: Jungle cat; C: Asiatic golden cat; D: Tiger; E: Clouded leopard and F: Leopard cat (Photos S. Min)