

**Table S2.** Social and ecological factors affecting primate harvest, with examples from Madagascar. Examples show how factors may enhance/promote (+) or hinder/inhibit (-) harvest and use of lemurs by humans.

FACTOR	EXAMPLES
<b>PRIMATE CHARACTERISTICS</b>	
<b>Abundance:</b> number of individuals in the population; high or low population size	<p>(+) White-headed lemurs (<i>Eulemur albifrons</i>) are more frequently captured than red ruffed lemurs (<i>Varecia rubra</i>) in the Masoala Peninsula due to higher abundance (Borgerson, 2015).</p> <p>(+) In the 1990s, low abundance of various lemur species (e.g. <i>Hapalemur</i> spp. and <i>Microcebus rufus</i>) once regularly hunted in the past led to decreased hunting (Sganzin, 1840 in Goodman, 1993; Goodman, 1993).</p> <p>(+) In southwest Madagascar (Ranobe PK32 protected area), declines in the abundance of sportive lemurs (<i>Lepilemur</i> spp.) potentially due to increased forest degradation resulted in decreased harvest rates (Gardner and Davies, 2014).</p>
<b>Activity pattern:</b> diurnal, nocturnal, or cathemeral activity	<p>(+) Diurnal behavior, along with large body size, is generally thought to have contributed to harvest vulnerability of extinct Madagascar lemurs (Godfrey and Irwin, 2007).</p> <p>(+) Extant, small nocturnal lemur species (e.g. <i>Avahi occidentalis</i> and <i>Lepilemur edwardsi</i>) in Parc National d'Ankarafantsika are susceptible to harvest by manual removal from nesting sites during the day (García and Goodman, 2003).</p> <p>(+) Trees are cut down to extract nocturnal lemurs resting in tree cavities (Reuter et al., 2016c; Gardner and Davies, 2014).</p> <p>(+) Hunters prey on fat-tailed dwarf lemurs (<i>Cheirogaleus medius</i>) nesting in the forest canopy during the day by poking their nests with a pole to wake them (Gardner and Davies, 2014).</p>
<b>Age:</b> age of primate; age class	<p>(+) People harvest infant ring-tailed lemurs (<i>Lemur catta</i>) to supply the pet trade (Sauther et al., 2013; LaFleur et al., 2019). Some suggest that the trade of these infants occurs to supply hotels throughout the coast (Gould and Sauther, 2016).</p> <p>(+) In Tsimananpesotse National Park (southwestern Madagascar) people who hunt ring-tailed lemurs choose adult individuals for subsistence or trade as wild meat (Sauther et al., 2013).</p>
<b>Defensive/aggressive behavior:</b> anti-predatory behaviors, including calls, bites; aggression	<p>(+)/(-) The biting and lunging behavior of ring-tailed lemurs (<i>Lemur catta</i>) (LaFleur et al., 2015) is hypothesized to lead to the release, caging, mistreatment, and even killing of wild-caught captive <i>L. catta</i> (LaFleur et al., 2019).</p> <p>(-) In Beza Mahafaly Special Reserve, humans living sympatrically with ring-tailed lemurs (<i>L. catta</i>) and Verreaux's sifaka (<i>Propithecus verreauxi</i>) have rules against hunting these species due to their human-like, aggressive behavior (i.e. behavior of fighting among human family members) (Loudon et al., 2006).</p> <p>(-) Diurnal lemurs in the western dry forests between Morondava and Morombe appear to be shy, making them difficult to approach and harvest (Zinner et al., 2001).</p>

<b>Group cohesion:</b> bonds linking members of a group to one another and to the group as a whole	<p>(+) Tight groups of individuals can increase vulnerability to harvest, such as in mouse lemurs (<i>Microcebus spp.</i>) where up to 30 individuals can be found roosting together in one nest during the dry season in Ranobe PK32 protected area (Gardner and Davies, 2014).</p> <p>(+) Groups of hunters with dogs capture entire troops of ring-tailed lemurs (<i>Lemur catta</i>) and Verreaux's sifaka (<i>Propithecus verreauxi</i>) in Ranobe PK32 protected area (Gardner and Davies, 2014).</p>
<b>Health:</b> mental and/or physical condition	<p>(+) In Makira Natural Park, hunting of frugivorous lemurs increases at the beginning of the dry season, during the peak fruiting season (March-June), due to their increased nutritional status (Brook et al., 2019).</p> <p>(+) White-headed lemurs (<i>Eulemur albifrons</i>) and red ruffed lemurs (<i>Varecia rubra</i>) are captured more frequently in the Masoala Peninsula during the fruiting season when their body fat quantities are maximized (Borgerson, 2016).</p> <p>(+) Mouse lemurs (<i>Microcebus spp.</i>) are more susceptible to harvest during the dry season in Ranobe PK32 protected area when their bodies store high amounts of fat, especially in the tail (Gardner and Davies, 2014).</p>
<b>Locomotion type:</b> terrestrial vs arboreal behavior	<p>(+) In the Makira forest of northeastern Madagascar, people build bridges with snares (called <i>laly totoko</i>) which connect fruiting trees to forest fragments to trap arboreal frugivores (Golden, 2009; Schwitzer et al., 2013).</p> <p>(+) Noose rope traps placed at ground level and baited with fruit ensnare ground-dwelling, diurnal primates, including common brown lemurs (<i>Eulemur fulvus</i>), ring-tailed lemurs (<i>Lemur catta</i>), and white-headed lemurs (<i>Eulemur albifrons</i>) (Goodman and Raselimanana, 2003; Borgerson, 2015).</p> <p>(+) Although sifakas (<i>Propithecus spp.</i>) can climb trees, pursuit hunting by Sakalava peoples by use of dogs exhausts them and increases their chance of capture close to the ground in Parc National de Kirindy-Mite (Goodman and Raselimanana, 2003).</p>
<b>Mobility:</b> capability of movement (i.e. fast or slow)	<p>(+) The slower mobility of sifakas (<i>Propithecus spp.</i>) and ring-tailed lemurs (<i>Lemur catta</i>) on the ground relative to that of dogs eases their chance of capture through pursuit hunting (Goodman and Raselimanana, 2003; Gardner and Davies, 2014).</p>
<b>Preference for human-modified habitat:</b> preference for human-modified habitat such as gardens, agroforests	<p>No evidence was found in reviewed papers for Madagascar (but see Thạch et al., (2018) for examples in Vietnam).</p>
<b>Site fidelity:</b> individual or group's tendency to return to or remain in a previously occupied place (e.g. nest, roosting site, cave)	<p>(+) Frugivorous lemurs that are restricted to acquiring food from specific trees during the fruiting season (austral winter) are targets for capture. Hunters build bridges with snares across forest fragments, which forces lemurs to cross in order to access the fruiting trees (Golden, 2009; Schwitzer et al., 2013; Borgerson, 2015).</p> <p>(+) In the Masoala Peninsula, the predictable travel paths of white-headed lemurs (<i>Eulemur albifrons</i>) and red ruffed lemurs (<i>Varecia rubra</i>) to seasonally fruiting trees eases their capture (Borgerson, 2015).</p>
<b>Size/morphology:</b> individual's morphology, body size	<p>(+) Hunters generally target large-bodied, adult lemurs for consumption (Zinner et al., 2001; Dunham et al., 2008).</p> <p>(+) The large body sizes of extinct Madagascar lemurs, along with diurnal behavior, are thought to have promoted their vulnerability to hunting by humans (Godfrey and Irwin, 2007).</p>

(-) In some communities in the Fianarantsoa rainforest corridor (central eastern Madagascar), people are less likely to harvest large-bodied lemurs such as the sifaka (family Indridae), eastern woolly lemur (*Avahi laniger*), red-fronted lemur (*Eulemur rufus*), and red-bellied lemur (*Eulemur rubriventer*). People associate the large body sizes, posture, and morphological characteristics of these species with humans, causing an aversion to their consumption and prevalence of taboos (Jones et al., 2008).

(+) Hunters capture some small-bodied lemurs directly and more passively without the need for weapons or dogs (García and Goodman, 2003; Borgerson, 2015).

(-) In the Ile Sainte Marie, small species such as brown mouse lemurs (*Microcebus rufus*) are not harvested due to their small meat quantities (Goodman, 1993).

**Success in captivity:** tendency to have high or low mortality in captive environments (i.e. cages, zoos, homes)

(+) Ecologically flexible (e.g. able to adapt to different diets and environments) ring-tailed lemurs (*Lemur catta*) may be more prone to harvest for live trade due to their higher survival rate in captivity when compared to other lemur species (LaFleur et al., 2015).

(+) A legal captive facility (hotel with reserve/nature park) is reported to have procured wild-caught lemurs to replace those that died in captivity (LaFleur et al., 2019/20).

(-) Species with low success in captivity such as the folivorous indri (*Indri indri*) and sifaka (*Propithecus* spp.) are less optimal targets (Junge et al., 2009 in LaFleur et al., 2015). Indris (family Indridae) and sportive lemurs (family Lepilemuridae) are prone to low success in captivity as they cannot adapt to changes in their diet (LaFleur et al., 2019/20).

---

## CULTURAL FACTORS

---

**Food:** traditional consumption of wild meat; preference for taste

(-) In urban areas of western Madagascar there was a general aversion towards consuming lemur meat, likely driven by both dislike for taste of lemur meat relative to other wild meat (i.e., bush pig, tenrec, helmeted guinea fowl) and associated taboos (*fady*) (Randrianandrianina et al., 2010).

(+) In urban areas of central and northern Madagascar, personal preference for wild meat, including that of lemurs, may drive the consumption and trade of wild meat, although consumers prefer domestic meat (i.e. chicken, zebu, pig) (Reuter et al., 2016c).

(+) In the Masoala Peninsula (northeast Madagascar), lemurs are a preferred food due to their high fat content and flavor, and are a preferred meat source over bush pig meat (Goodman and Raselimanana, 2003).

(+)/(-) In eastern Madagascar, local people have taboos against harvesting species that rank low in taste preference. Although domestic species are the preferred food choices in this region, brown lemurs (*Eulemur fulvus*) ranked as one of the most preferred wild (and protected) meat species (Jenkins et al., 2011).

**Hunting:** traditional hunting; ceremonial hunting practices (e.g. coming of age hunting trips)

No evidence was found in reviewed papers for Madagascar (but see Quinten et al., (2014) for examples in Indonesia).

<b>Informal institutions:</b> social norms, community pride, customs (e.g. folklore), social/cultural taboos	<p>(-) Urban residents of western Madagascar cite <i>fady</i> (an informal system of taboos) as the main reason for not consuming lemurs (Randrianandrianina et al., 2010).</p> <p>(-) <i>Fady</i> appear to limit the harvest of Milne-Edwards's Sifaka (<i>Propithecus edwardsi</i>) in the southern region of Ranomafana National Park (southeastern Madagascar) (Wright et al., 2005 in Dunham et al., 2008) while hunting of this species occurs in the northern region (Lehman et al., 2006 in Dunham et al., 2008).</p> <p>(-) Members of the Betsimisaraka and Tsimihety communities in Vohimana Reserve (eastern Madagascar) do not hunt indri and aye-ayes (<i>Daubentonia madagascariensis</i>) due to a <i>fady</i> against their consumption (Anania et al., 2019/20).</p> <p>(+) One <i>fady</i> that leads to the persecution of lemurs is that against aye-ayes (<i>Daubentonia madagascariensis</i>) in some parts of Madagascar due to their reputation as evil omens, though local attitudes towards aye-ayes varies across communities (Albignac, 1987 in Quinn and Wilson, 2004; Simons and Meyers, 2001; Koenig, 2005 in Loudon et al., 2006; Jones et al., 2008; Randimbiharirinirina et al., 2021).</p>
<b>Medicine:</b> use in traditional medicine	(+) Aye-ayes ( <i>Daubentonia madagascariensis</i> ) and golden-crowned sifakas ( <i>Propithecus tattersalli</i> ) have been used in ritual practices linked to traditional medicine (see Alves et al., (2010) for a global review of the use of primates in traditional folk medicine).
<b>Pets:</b> pet-keeping tradition; household pets	<p>(+) Lemurs from at least 16 taxa are kept as pets throughout rural and urban areas of Madagascar (Goodman, 1993; Zinner et al., 2001; Gilles and Reuter, 2014; Reuter et al., 2016a; Reuter and Schaefer, 2017; Reuter et al., 2019). The most common lemurs reported as pets are ring-tailed lemurs (<i>Lemur catta</i>) and brown lemurs (<i>Eulemur</i> spp.) (Reuter et al., 2019).</p> <p>(+) A survey on the ownership of ring-tailed lemurs (<i>Lemur catta</i>) found that about half of respondents kept ring-tailed lemurs as a personal pet, while a similar proportion kept them for income generation activities (LaFleur et al., 2019).</p> <p>(+) Some owners of pet lemurs have described the child-like physical characteristics of their pet lemurs and noted deeper affection towards lemurs than towards other pets (e.g. dogs) (Reuter et al., 2016a).</p>
<b>Religion:</b> traditional, Indigenous, and Western religion	(unknown) A study found no evidence of a strong influence of institutional or traditional religion on keeping lemurs as pets, although there was some evidence of Catholic institutions keeping captive lemurs when the original owner was unable to do so (Reuter et al., 2018). Moreover, there was no evidence that non-Catholic institutions kept captive lemurs (Reuter et al., 2018).
<b>Tools:</b> use of body parts for tools, ornaments, clothing	No evidence was found in reviewed papers for Madagascar (but see Sá et al., (2012) for examples in Guinea-Bissau).

---

## SOCIO-ECONOMIC FACTORS

---

<b>Age:</b> age of humans; age class	No evidence was found in reviewed papers for Madagascar (but see Friant et al., (2015) for examples in Nigeria).
--------------------------------------	--

<b>Commercial trade:</b> commercial trade for pets, meat, medicine, attractions; trade for income generation	<p>(+) Commercial trade of lemurs exists to meet the demand for pets (Sauther et al., 2013; LaFleur et al., 2015; Gould and Sauther, 2016; Reuter and Schaefer, 2017; Reuter et al., 2017; LaFleur et al., 2019), wild meat (Barrett and Ratsimbazafy, 2009; Sauther et al., 2013; LaFleur et al., 2015; Randrianandrianina et al., 2010; Gardner and Davies, 2014; Golden et al., 2014; Schwitzer et al., 2014; Reuter et al., 2016c), and income-generating attractions (LaFleur et al., 2015; Reuter et al., 2016a; Reuter and Schaefer, 2016a; Reuter and Schaefer, 2016b; Reuter et al., 2017; Reuter and Schaefer, 2017, LaFleur et al., 2019; LaFleur et al., 2019/20).</p> <p>(+) Direct monetary benefits for businesses include opportunities for tourists to pay for interactions with lemurs (e.g. feeding, photo ops, handling) while indirect monetary benefits include an added value to the business to attract tourists and purchasing food from the business to feed the captive lemurs (Reuter and Schaeffer, 2017).</p> <p>(+) Lemur meat is also a delicacy for wealthy consumers, which drives trade (Barrett and Ratsimbazafy, 2009; Sauther et al., 2013).</p> <p>(+) Ring-tailed lemurs (<i>Lemur catta</i>) are particularly prominent in the pet and attraction trade, as they are commonly sighted in hotels and restaurants as attractions in cages or for photo ops (Reuter and Schaefer, 2017; LaFleur et al., 2015; LaFleur et al., 2019).</p>
<b>Crop/resource protection:</b> protection of crops and other resources	<p>(+) In some contexts, aye-ayes (<i>Daubentonia madagascariensis</i>) have been killed on sight because they are considered crop pests, in addition to their reputation as ‘harbingers of evil’ (Albignac 1987, in Quinn and Wilson, 2004; Simons and Meyers, 2001; Koenig, 2005 in Loudon et al., 2006; Jones et al., 2008).</p>
<b>Education:</b> educational level	<p>No evidence was found in reviewed papers for Madagascar (but see LeBreton et al., (2006) for examples in central Africa).</p>
<b>Gender:</b> gendered differences (e.g. knowledge, experiences)	<p>No evidence was found in reviewed papers for Madagascar (but see Thạch et al., (2018) for examples in Vietnam).</p>
<b>Lack of alternatives:</b> lack of alternative livelihood activities	<p>(+) Increasing food insecurity, notably the lack of domestic meat options, is a leading driver of the consumption of lemurs in Madagascar (Schwitzer et al., 2013; Reuter et al., 2016b).</p> <p>(+) In the Makira Forest, human encroachment and a lack of livestock have resulted in the increased harvest of wildlife for food. This is complicated by the lack of access to affordable alternatives to wild meat for protein (Golden, 2009).</p> <p>(+) Within protected areas of southwest Madagascar, hunting for wild meat occurs due to limited land allocated for farming, reducing the prospects of income-generation from agriculture (Schwitzer et al., 2013; Gardner and Davies, 2014).</p>
<b>Opportunistic harvest:</b> indiscriminate/opportunistic harvest (e.g. primate harvested when searching for other resources)	<p>(+) Incidental and opportunistic harvest of lemurs occurs when hunting for other species (in and outside of hunting seasons) (Borgerson, 2016) or searching for other forest resources (e.g. construction wood, medicinal plants) (Gardner and Davies, 2014).</p> <p>(+) Lemur species fall into traps that were intended for other species, such as bush pigs (<i>Potamochoerus larvatus</i>) that raid crops or fossa (<i>Cryptoprocta ferox</i>) that kill poultry (Borgerson, 2016).</p>

**Social status:** individual's or group's standing in relation to other people within a community or society

- (+) Results from an assessment of wild-caught ring-tailed lemurs (*Lemur catta*) throughout Madagascar suggest that communities associate lemur ownership with wealth and high social status (LaFleur et al., 2019).
- (+) Taking pictures with lemurs coincides with vacation activities and wealth, and Malagasy youth who post pictures with lemurs on social media receive comments of praise or envy (Reuter et al., 2018).
- (+) The general perception of higher wealth and social status associated with lemur ownership may drive demand for the pet trade (Reuter et al., 2018).

**Subsistence:** subsistence harvest for food, nutrition, basic income needs

- (+) Lemurs comprise an important part of the diets of rural inhabitants throughout Madagascar where subsistence hunting is increasing (Goodman, 1993; Dunham et al., 2008; Golden, 2009; Jenkins et al., 2011; Razafimanahaka et al., 2012; Sauther et al., 2013; Gardner and Davies, 2014; Borgerson, 2016; Borgerson et al., 2016; Reuter et al., 2016b; Reuter et al., 2016c).
- (+) Because the opportunity or capacity to engage in agricultural activities (including livestock production) has declined since the early 2000s, or decreases during specific times throughout the year (e.g. during the dry season in May to October), people increasingly rely on wild meat resources to supply their dietary needs (Goodman and Raselimanana, 2003; Golden, 2009; Schwitzer et al., 2013; Gardner and Davies, 2014).
- (+) Poor household health, child malnutrition, and poverty are strong predictors of trapping and consuming lemurs for subsistence on the Masoala Peninsula (Borgerson et al., 2016).
- (+) Opportunistic harvest and trade of lemur is increasing throughout rural Madagascar to help meet subsistence needs (Gardner and Davies, 2014; Reuter et al., 2016c).

**Technology:** access to technology (e.g. guns, traps, batteries, vehicles)

- (+) Increasing access to guns facilitates the harvest of large numbers of lemurs by a few people (Jenkins et al., 2011; Reuter et al., 2016c).
- (+) Wealthy urban individuals travel into rural areas to hunt lemurs with guns, while local rural residents rely on traditional trapping methods (Golden, 2009; Jenkins et al., 2011).
- (+) There is evidence of lemur hunting by commercial shotguns or locally made models in Parc National d'Ankarafantsika, northwestern Madagascar (García and Goodman, 2003).

---

## **POLITICAL & GOVERNANCE FACTORS**

---

**Access to forest:** high or low access to forest

- (+) In the Makira Forest and other protected areas throughout Madagascar human encroachment, limited land allocated for farming, and a lack of livestock have resulted in the increased harvest of wildlife from forests and other protected areas for food (Golden, 2009; Schwitzer et al., 2013; Gardner and Davies, 2014).
- (+) There is an official zone (950 ha) designated for the collection of rafia palm (*Raffia*) within Parc National d'Ankarafantsika (northwestern Madagascar), where 20 or more camps are occupied per year; the remains of protected wildlife were recorded at one campsite, and consisted primarily of lemurs (60% of the minimum number of individuals) (García and Goodman, 2003).

**Border issues:** country border issues; border permeability

No evidence was found in reviewed papers for Madagascar (but see Maldonado et al., (2009) and Maldonado and Peck, (2013) for examples in the Colombia-Peru-Brazil tri-border).

<b>Law enforcement:</b> high or low law enforcement; lack of enforcement; corruption	<p>(+)/(-) All lemur species receive protection under the law in Madagascar and hunting is illegal (Decree No. 2006-400 in Borgerson, 2015; Rakotoarivelo et al., 2011 in Razafimanahaka et al., 2012). But law enforcement against primate harvest is generally low in Madagascar.</p> <p>(+) Although owners of pet lemurs know that the practice is illegal, lemur ownership is prevalent throughout Madagascar (Reuter et al., 2016a; LaFleur et al., 2019).</p> <p>(+) Enforcement of sanctions for killing lemurs, which may include confiscation and a fine of \$5-200 or one month to two years in prison, is rare (Golden, 2009; Golden et al., 2011; Jenkins et al., 2011).</p> <p>(+) Since the Malagasy political crisis in 2009 (unconstitutional military coup), unregulated environmental crime, particularly illegal wildlife trade, rapidly rose throughout the country (Barrett and Ratsimbazafy, 2009).</p> <p>(+) In the Parc National d'Ankarafantsika in Northwestern Madagascar, continued exploitation of natural resources occurs because of low law enforcement from the local authorities, due to limited resources and the large size of the protected area (Garcia and Goodman, 2003).</p>
<b>Political instability:</b> local, regional, or international political instability	<p>(+) In 2009, Madagascar underwent a political crisis (unconstitutional military coup), resulting in the significant decrease of international support for environmental programs, among others (Schwitzer et al., 2014). The political instability resulted in increased illegal harvest and trafficking of wildlife and wildlife products, including lemurs (Barrett and Ratsimbazafy, 2009; Schwitzer et al., 2014).</p>
<b>Trade links:</b> trade links between focal country and other countries	<p>No evidence was found in reviewed papers for Madagascar (but see Musing et al., (2015) for examples in Japan and trade links to southeast Asian countries).</p>

## REFERENCES

- Alves, R. R. N., Souto, W. M. S., and Barboza, R. R. D. (2010). Primates in traditional folk medicine: a world overview. *Mammal Rev.* 40, 155-180. doi: 10.1111/j.1365-2907.2010.00158.x
- Anania, A., Giubilato, T., MacDonald, M., Sauvadet, L., Corsetti, S., Rasolondraibe, E., and Salmona, J. (2019/20). Inventory of the lemur community in the Vohimana reserve, eastern Madagascar. *Lemur news* 22, 38-44.
- Barrett, M. A., and Ratsimbazafy, J. (2009). Luxury bushmeat trade threatens lemur conservation. *Nature* 461, 470-470. doi:10.1038/461470a
- Borgerson, C. (2015). The effects of illegal hunting and habitat on two sympatric endangered primates. *Int. J. Primatol.* 36, 74-93. doi: 10.1007/s10764-015-9812-x
- Borgerson, C. (2016). Optimizing conservation policy: The importance of seasonal variation in hunting and meat consumption on the Masoala Peninsula of Madagascar. *Oryx* 50, 405-418. doi:10.1017/s0030605315000307
- Borgerson, C., Mckean, M. A, Sutherland, M. R., and Godfrey, L. R. (2016). Who hunts lemurs and why they hunt them. *Biol. Conserv.* 197, 124-130. doi:10.1016/j.biocon.2016.02.012
- Brook, C.E., Herrera, J. P., Borgerson, C., Fuller, E. C., Andriamahazoarivosoa, P., Rasolofoniaina, B. J. R., et al. (2019). Population viability and harvest sustainability for Madagascar lemurs. *Conserv. Biol.* 33, 99-111. doi:10.1111/cobi.13151
- Dunham, A. E., Erhart, E. M., Overdorff, D. J., and Wright, P. C. (2008). Evaluating effects of deforestation, hunting, and El Niño events on a threatened lemur. *Biol. Conserv.* 141, 287-297. doi:10.1016/j.biocon.2007.10.006
- Friant S., Paige, S. B., and Goldberg, T. L. (2015). Drivers of Bushmeat Hunting and Perceptions of Zoonoses in Nigerian Hunting Communities. *PLoS Negl. Trop. Dis.* 9:e0003792. doi:10.1371/journal.pntd.0003792



García, G., and Goodman, S. M. (2003). Hunting of protected animals in the Parc National d'Ankarafantsika, north-western Madagascar. *Oryx* 37, 115-118. doi:10.1017/s0030605303000206

Gardner, C. J., and Davies, Z. G. (2014). Rural bushmeat consumption within multiple-use protected areas: qualitative evidence from southwest Madagascar. *Hum. Ecol.* 42, 21-34. doi: 10.1007/s10745-013-9629-1

Gilles, H. R., and Reuter, K. E. (2014). The presence of diurnal lemurs and human-lemur interactions in the buffer zone of the Ankarana National Park. *Lemur News* 18, 27-30.

Godfrey, L. R., and Irwin, M. T. (2007). The Evolution of Extinction Risk: Past and Present Anthropogenic Impacts on the Primate Communities of Madagascar. *Folia Primatol.* 78, 405-419. doi:10.1159/000105152

Golden, C. D. (2009). Bushmeat hunting and use in the Makira Forest, north-eastern Madagascar: A conservation and livelihoods issue. *Oryx* 43, 386. doi:10.1017/s0030605309000131

Golden, C. D., Fernald, L. C., Brashares, J. S., Rasolofoniaina, B. J., and Kremen, C. (2011). Benefits of wildlife consumption to child nutrition in a biodiversity hotspot. *Proc. Natl. Acad. Sci. U. S. A.* 108, 19653-19656. doi:10.1073/pnas.1112586108

Golden, C. D., Bonds, M. H., Brashares, J. S., Rasolofoniaina, B. J., and Kremen, C. (2014). Economic Valuation of Subsistence Harvest of Wildlife in Madagascar. *Conserv. Biol.* 28, 234-243. doi:10.1111/cobi.12174

Goodman, S. M. (1993). A reconnaissance of Ile Sainte Marie, Madagascar: The status of the forest, avifauna, lemurs and fruit bats. *Biol. Conserv.* 65, 205-212. doi:10.1016/0006-3207(93)90054-5

Goodman, S. M., and Raselimanana, A. (2003). Hunting of wild animals by Sakalava of the Menabe region: a field report from Kirindy-Mite. *Lemur News* 8, 4-6.

Gould, L., and Sauther, L. M. (2016). Going, going, gone... Is the iconic ring-tailed lemur (*Lemur catta*) headed for imminent extirpation. *Primate Conserv.* 30, 89-101.

- Jenkins, R. K., Keane, A., Rakotoarivelo, A. R., Rakotomboavonjy, V., Randrianandrianina, F. H., Razafimanahaka, H. S., et al. (2011). Analysis of patterns of bushmeat consumption reveals extensive exploitation of protected species in eastern Madagascar. *PLoS ONE* 6. doi:10.1371/journal.pone.0027570
- Jones, J. P., Andriamarovololona, M. M., and Hockley, N. (2008). The Importance of taboos and social norms to conservation in Madagascar. *Conserv. Biol.* 22, 976-986. doi:10.1111/j.1523-1739.2008.00970.x
- LaFleur, M., Clarke, T., Giraud, L., Youssouf, J., Gould, L., and Adiba, M. (2015). Reniala Lemur Rescue Center for ring-tailed lemurs in Madagascar. *Lemur News* 19, 11-13.
- Lafleur, M., Clarke, T., Reuter, K., Schaefer, M., and Terhorst, C. (2019). Illegal trade of wild-captured lemur catta within Madagascar. *Folia Primatol.* 90, 199-214. doi:10.1159/000496970
- LaFleur, M., Reuter, K., and Schaefer, M. (2019/20). Tourism and lemurs: the fate of diurnal indriids at popular tourist destinations. *Lemur News* 22, 54-56.
- LeBreton, M., Prosser, A., Tamoufe, U., Sateren, W., Mpoudi-Ngole, E., Dikko, J. L. D., et al. (2006). Patterns of bushmeat hunting and perceptions of disease risk among central African communities. *Anim. Conserv.* 9, 357-363. doi:10.1111/j.1469-1795.2006.00030.x
- Loudon, J. E., Sauter, M. L., Fish, K. D., Hunter-Ishikawa, M., and Ibrahim, Y. J. (2006). One reserve, three primates: applying a holistic approach to understand the interconnections among ring-tailed lemurs (*Lemur catta*), Verreaux's sifaka (*Propithecus verreauxi*), and humans (*Homo sapiens*) at Beza Mahafaly Special Reserve, Madagascar. *Ecol. Env. Anthropol.* 2.
- Maldonado, A., Nijman, V., and Bearder, S. (2009). Trade in night monkeys *Aotus* spp. in the Brazil–Colombia–Peru tri-border area: International wildlife trade regulations are ineffectively enforced. *Endanger. Species Res.* 9, 143-149. doi:10.3354/esr00209

Maldonado, A., and Peck, M. (2013). The role of primate conservation to fight the illegal trade in primates: the case of the owl monkeys in the Colombian-Peruvian Amazon. *Folia Primatol.* 84, 299-300.

Musing, L., Suzuki, K., and Nekaris, K. A. I. (2015). Crossing international borders: the trade of slow lorises *Nycticebus* spp. as pets in Japan. *Asian Primates Journal* 5, 12-24.

Quinn, A., and Wilson, D. E. (2004). *Daubentonia madagascariensis*. *Mamm. Species* 740, 1-6.

Quinten, M., Stirling, F., Schwarze, S., Dinata, Y., and Hodges, K. (2014). Knowledge, attitudes and practices of local people on Siberut Island (West-Sumatra, Indonesia) towards primate hunting and conservation. *J. Threat. Taxa* 6, 6389-6398.

Randimbiharinirina, R. D., Richter, T., Raharivololona, B. M., Ratsimbazafy, J. H., and Schüßler, D. (2021). To tell a different story: Unexpected diversity in local attitudes towards Endangered Aye-ayes *Daubentonia madagascariensis* offers new opportunities for conservation. *People Nat.* 3, 484-498. doi:10.1002/pan3.10192

Randrianandrianina, F. H., Racey, P. A., and Jenkins, R. K. (2010). Hunting and consumption of mammals and birds by people in urban areas of western Madagascar. *Oryx* 44, 411-415. doi:10.1017/s003060531000044x

Razafimanahaka, J. H., Jenkins, R. K., Andriafidison, D., Randrianandrianina, F., Rakotomboavonjy, V., Keane, A., and Jones, J. P. (2012). Novel approach for quantifying illegal bushmeat consumption reveals high consumption of protected species in Madagascar. *Oryx* 46, 584-592. doi:10.1017/s0030605312000579

Reuter, K. E., Gilles, H., Wills, A. R., and Sewall, B. J. (2016a). Live capture and ownership of lemurs in Madagascar: Extent and conservation implications. *Oryx* 50, 344-354. doi:10.1017/s003060531400074x

Reuter, K. E., Randell, H., Wills, A. R., and Sewall, B. J. (2016b). The consumption of wild meat in Madagascar: Drivers, popularity and food security. *Environ. Conserv.* 43, 273-283. doi:10.1017/s0376892916000059

Reuter, K. E., Randell, H., Wills, A. R., Janvier, T. E., Belalahy, T. R., and Sewall, B. J. (2016c). Capture, movement, trade, and consumption of mammals in Madagascar. *Plos One* 11. doi:10.1371/journal.pone.0150305

Reuter, K. E., and Schaefer, M. S. (2016a). Captive conditions of pet lemurs in Madagascar. *Folia Primatol.* 87, 48-63. doi:10.1159/000444582

Reuter, K. E., and Schaefer, M. S. (2016b). Illegal captive lemurs in Madagascar: Comparing the use of online and in-person data collection methods. *Am. J. Primatol.* 79. doi:10.1002/ajp.22541

Reuter, K. E., and Schaefer, M. S. (2017). Motivations for the ownership of captive lemurs in Madagascar. *Anthrozoös* 30, 33-46. doi:10.1080/08927936.2017.1270589

Reuter, K. E., Lafleur, M., and Clarke, T. A. (2017). Illegal lemur trade grows in Madagascar. *Nature* 541, 157-157. doi:10.1038/541157d

Reuter, K. E., Clarke, T. A., Lafleur, M., Ratsimbazafy, J., Kjeldgaard, F. H., Rodriguez, L., et al. (2018). Exploring the role of wealth and religion on the ownership of captive lemurs in Madagascar using qualitative and quantitative data. *Folia Primatol.* 89, 81-96. doi:10.1159/000477400

Reuter, K. E., Lafleur, M., Clarke, T. A., Kjeldgaard, F. H., Ramanantenasa, I., Ratolojanahary, T., et al. (2019). A national survey of household pet lemur ownership in Madagascar. *Plos One* 14. doi:10.1371/journal.pone.0216593

Sá, R., Ferreira da Silva, M. J., Sousa, F., and Minhós, M. (2012). The trade and ethnobiological use of chimpanzee body parts in Guinea-Bissau: Implications for conservation. *TRAFFIC BULLETIN* 24, 31-34.

Sauther, M., Cuzzo, F., Jacky, I. Y., Fish, K., Lafleur, M., Ravelohasindrazana, L., and Ravoavy, J. (2013). Limestone cliff-face and cave use by wild ring-tailed lemurs (*Lemur catta*) in southwestern Madagascar. *Madag. Conserv. Dev.* 8. doi:10.4314/mcd.v8i2.5

Schwitzer, C., Baker-Médard, M., Dolch, R., Golden, C., Irwin, M., Johnson, S., Patel, E., Raharivololona, B.M., Ratsimbazafy, J., Razafrindramanana, J., and Volampeno, S. (2013). “Factors Contributing to Lemur Population Decline on a National Scale, and Proposed Immediate and Longer-Term Mitigation Actions,” in *Lemurs of Madagascar: A Strategy for their Conservation 2013-2016*, ed. C. Schwitzer, C. et al. (Bristol, UK: IUCN SSC Primate Specialist Group, Bristol Conservation and Science Foundation, and Conservation International), 34-51.

Schwitzer, C., Mittermeier, R. A., Johnson, S. E., Donati, G., Irwin, M., Peacock, H., et al. (2014). Averting Lemur Extinctions amid Madagascar’s Political Crisis. *Science* 343, 842.

Simons, E. L., and Meyers, D. M. (2001). Folklore and beliefs about the aye aye (*Daubentonia madagascariensis*). *Lemur News* 6, 11-16.

Thạch, H. M., Le, M. D., Vũ, N., B., Panariello, A., Sethi, G., Sterling, E. J., and Blair, M. E. (2018). Slow loris trade in Vietnam: Exploring diverse knowledge and values. *Folia Primatol.* 89, 45-62. doi:10.1159/000481196

Zinner, D., Ostner, J., Dill, A., Razafimanantsoa, L., and Rasoloarison, R. (2001). Results of a reconnaissance expedition in the western dry forests between Morondava and Morombe. *Lemur News* 6, 16-18.