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AFRICA

Case study: Barbary Macaques and Tourism in Morocco

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The Barbary macaque (*Macaca sylvanus*) is the only non-human primate species found in North Africa (Morocco and Algeria), and occurs in Europe (Gibraltar) as an introduced population. The species is Endangered threatened by habitat destruction and the illegal trade (Wallis *et al.* 2020).

Many Barbary macaque groups have become habituated to people through the provision of food by tourists. This has created many unmanaged primate tourism locations most notably in the Middle and High Atlas Mountains of Morocco (El Alami *et al.*, 2012, Majolo *et al.*, 2013). These sites are often close to roads. Human-macaque interactions are not regulated at these sites, and concerns have been raised about human safety (Maréchal *et al.*, 2017) and animal welfare and conservation (Maréchal *et al.*, 2011; 2016). Interactions with people negatively affect macaques' health, change their behaviours, and may lead to increased road deaths in Ifrane National Park (Waterman *et al.*, 2019).

Barbary macaques are also exploited for the pet and photo prop trade in Morocco despite both practices being prohibited. Public awareness regarding wildlife protection laws is low (Waters and El Harrad, 2013). However, due to public reports of illegally held macaques using social media, photo prop macaques are often confiscated and the owners fined (Waters and El Harrad, 2013). However, the touts exploiting Barbary macaques as photo props in Jemaa el-Fnaa Square in Marrakech are granted a special dispensation by the tourist and police authorities. Whenever tourism is discussed in the media, the article/documentary is often accompanied by a tourist in the square posing with a photo prop Barbary macaque. Such photos normalise the practice in the eyes of the Moroccan public and the mixed messaging contributes to their confusion regarding the legality of purchasing a macaque as a pet. The macaques kept as photo props in Jemaa el-Fnaa have all been poached from the wild as infants, are abused and kept in poor conditions. Monkey bites are a major public health concern as tourists (including children) are often bitten by the macaques used as photo props, those kept in tourist hotels to entertain visitors, or

at unmanaged primate tourism sites. A bite from a monkey can quickly become infected and can transmit serious pathogens to people.

In conclusion, education and awareness raising and effective tourism management are needed to mitigate the threats to the species from the impacts of tourism in both the Middle and High Atlas Mountains of Morocco. We recommend that site managers, tour operators, guides, tourists, etc. follow the [IUCN SSC Primate Specialist Group Section on Human-Primate Interactions recommendations](#) for watching Afro-Eurasian monkeys, unplanned primate tourism, and tourism and primate welfare and the [Best Practice Guidelines for Responsible Images of Non-Human Primates](#).

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Primate Tourism and the Zanzibar Red Colobus at Jozani-Chwaka National Park

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The Zanzibar red colobus (*Piliocolobus kirkii*) is a distinct species of red colobus found only in Zanzibar (Fig. 1). With approximately 5,800 individuals left in the wild it is considered Endangered by the IUCN and its main threat is habitat loss (Davenport 2019; Davenport *et al.* 2019; 2020). Over half of its total population is found in Jozani Chwaka-Bay National Park (JCBNP), which is also the main location where tourists have been able to view these monkeys on guided walks since the late 1980s (Carius & Job, 2019). Viewing Zanzibar red colobus is advertised widely in the Zanzibar tourism sector and the resulting revenue from national park entrance fees is crucial for the work of Zanzibar's Department of Forestry in protecting the forest (e.g.: in 2019 a total of 65,340 visitors passed through JCBNP, bringing in over USD 650,000; JCBNP official records). The revenue also contributes to maintaining the park's relationship with surrounding communities. Villages whose lands are adjacent to the park receive compensation for occasional crop foraging by the colobus as well as additional funds for community development projects (Salum, 2009; Saunders, 2011; Carius & Job, 2019).



Fig. 1. Zanzibar Red Colobus

Tourists at JCBNP are taken to see the monkeys both by 'official' national park guides, and occasionally by 'unofficial' guides who accompany their 'own' groups of tourists when no 'official' guides are available (e.g., during peak visiting hours). Before taking tourists to see the colobus, national park guides brief them that they should maintain at least 3 m distance from the monkeys and should not touch or feed them. While official park guides are typically strict with monitoring tourist

behaviour, the unofficial ones are notably less so. The vast majority of visitors do not try feeding the colobus. However, our observations in one tourist-visited colobus group suggest the 3-m rule was broken 11% of the time tourists spent with the monkeys (Warkentin & Georgiev, unpub. data). Rarely, some visitors also try to touch the colobus. This is partly the result of the monkeys in the most often visited groups being extremely habituated and unreactive to close human proximity or even touch, but mostly the result of over-eager tourists keen to obtain the best photo of or with a colobus. The high number of tourists per guide (up to 40-50 people on rare occasions) also limits the ability of park guides to police the behaviour of all.

Despite this apparent intrusiveness of primate tourism at JCBNP, preliminary observations suggest that some of the most often visited groups are not, at least superficially, exhibiting major behavioural or demographic signs of negative effects of tourism activity ([Zanzibar Red Colobus Project](#), unpub. data). Nevertheless, rates of self-directed behaviour (a possible indicator of anxiety or stress) were somewhat higher in a highly visited colobus group than in a group that did not receive any visitors (Warkentin, 2019). Long-term data is needed to fully evaluate how groups exposed to tourism are affected but in the short-term, limiting risks of bi-directional disease transmission by more strict enforcement of park regulations should be the priority.

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ASIA

Primate Tourism in Bangladesh: A Case Study

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Primate tourism in Bangladesh is still developing, and currently concentrated in Lawachara National Park, Satchari National Park, Rema-Kalenga Wildlife Sanctuary in the northeast, and Madhupur National Park in northcentral Bangladesh. The Rhesus macaque (*M. mulatta*) is an integral part of mangrove-tiger-centric tourism in the Sundarbans. The globally Endangered Western hoolock gibbon (*Hoolock hoolock*), Phayre's langur (*Trachypithecus phayrei*) and Vulnerable capped langur (*T. pileatus*) are the main attractions for foreign tourists in the north-eastern forests. Easily visible macaques and langurs attract many domestic visitors all over the country (Howlader and Chowdhury 2017; Rabbi 2017). Visitors are also becoming interested in watching the Bengal slow loris (*Nycticebus bengalensis*) in the northeastern forests. However, a significant portion of the tourists are actually hobbyist wildlife photographers who are accompanied by trained local eco-guides (Fig. 1).



Fig.1: Visitors photographing langurs at Satchari National Park, Bangladesh.

In Bangladesh, primate tourism helps to develop the local economies and livelihoods of villages on the forest edge. In northeast Bangladesh, some villagers were trained as eco-tourist guides about a decade ago resulting in an improvement in their livelihoods and prospects (IRG, 2013). During the tourism season, they work as paid guides for domestic and foreign tourists, and wildlife photographers. In addition, a number of local people including Indigenous communities in a few primate-rich (mainly Rhesus macaques) forest landscapes and suburban sites make their living selling locally made products, foods and providing other services to tourists. These alternative livelihoods

ultimately reduce their reliance on the forests for subsistence which may help conserve wildlife (Howlader and Chowdhury, 2017).

Some ongoing tourism practices are likely unsustainable. Overcrowding of seasonal tourists is recorded in some primate habitats severely disrupting the normal daily activity of many mammal species including primates (Ahmed and Naher, 2021; IUCN Bangladesh, 2015). Loud noise, pollution, fireworks, and invasive activities by the visitors in protected areas may force many species like capped and Phayre's langurs to leave their home ranges during tourist season (Molur *et al.*, 2013; IUCN Bangladesh, 2015; Ahmed, T., unpub. data). In many protected forests and semi-urban areas in Bangladesh, macaques are being provisioned by local authorities and tourists visiting these areas are allowed to feed these primates (IUCN Bangladesh, 2015). The main foods provided are nuts and baked goods. Such provisioning may have resulted in increased human-primate conflicts in many areas. Macaques sometimes show aggression toward tourists. Such close association of monkeys and people increase the risks of bidirectional disease transmission and has the potential to spread pathogens to non-habituated macaque groups (IUCN Bangladesh, 2015).

In conclusion, the management of domestic tourist activities in primate habitats is the ultimate challenge. To ensure the sustainability of primate tourism and welfare, there is a need for precise guidelines, long-term planning, population management and training of eco-guides and the regional staff of the Bangladesh Forest Department. In addition, a pocket guide for the primates of Bangladesh will be extremely useful for both domestic and foreign tourists.

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Case Study: Interactions of Long-Tailed Macaques and Tourists at the Angkor Wat Temples, Cambodia

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The UNESCO World Heritage Site, Angkor Wat, is the largest religious monument in the world and almost three million tourists visited the site annually (pre-COVID). After the pandemic, tourist numbers decreased drastically, and in the last six months “only” 80,000 people visited the site. The site area is 162 hectares and composed of multiple temples, artificial lakes, rivers, and forest areas. Within the site, long-tailed macaque (*Macaca fascicularis*) groups are continuously exposed to tourists, which can be a complementary part to tourism at the Angkor Wat Temple.

On July 22nd 2022, we conducted a brief population survey at Angkor Wat temple, and counted 207 individual long-tailed macaques. Interactions between long-tailed macaques and tourists (both foreigners and locals) were constant, seemingly as a consequence of many decades of provisioning. Local vendors sold bananas and peanuts specifically for the macaques, while some people came to the site already equipped with sweet foods, fruit or bread for the animals. As Buddhists, local people provide food to macaques to gain spiritual merit (Brekke, 1998). Long-tailed macaques also obtain food by snatching it directly from people. Juveniles seemed to mostly approach tourists to snatch food and drinks from tourists - especially women and children, while adult female macaques appeared less interested and instead spent more time interacting with conspecifics.

While walking around the temples, we observed long-tailed macaques moving around the tourist areas in accordance with the time of the day and visitor presence. For instance, long-tailed macaques seemed to spend most of the afternoon in front of the Bayon temple, a time which coincides with the highest number of tourists at the temple. Also in this area, many local “video reporters” spent most of the day filming the macaques and sharing the resulting videos on social media for which they got paid. To obtain these films, they tended to feed the macaques by hand so they could have better and closer footage.

The physical and behavioural traits of the long-tailed macaques appeared to be affected by food provisioning. For example, most of the adults were overweight and they showed a preference towards food items high in sugar which in some cases led to intraspecific aggression.

We observed many negative interactions between people and long-tailed macaques. On one occasion, a local guide with a slingshot chased an adult male after he stole a sandwich from a foreigner. In another event, a juvenile jumped on the backpack of a woman to try to steal some food and she had to run away.

Due to their ability to adapt to anthropogenic areas, long-tailed macaques easily cross roads without any fear of vehicles, despite the risk of collisions (Gumert *et al.*, 2011). Indeed, we observed some injured macaques, possibly due to a collision with a vehicle on the nearby road. Moreover, because many tourists fed the macaques from their cars, macaques appeared to associate vehicles with food and jumped on cars and motorcycles, manipulating and sometimes breaking parts of the vehicles.

Overall, close interactions between people and macaques were encouraged rather than avoided by tourists and filmmakers, increasing negative interactions and thereby maintaining a negative reputation for the species (Hansen *et al.*, 2021). Moreover, close contact could encourage the transmission of disease, putting the health of people and long-tailed macaques at risk. We believe that, with better management and monitoring of people-macaque interactions, Angkor Wat could be a centre for conservation of the long-tailed macaques and its associated ecosystems, because of the absence of illegal hunting and the abundance of natural food resources in the surrounding forest. We encourage creating and implementing new measures to promote ethical tourism and raise awareness about the conservation of this macaque species at this heavily visited site.

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Primate Tourism in China: A Case Study of the Yunnan Snub-Nosed Monkey

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The Yunnan snub-nosed monkey (YSNM) or black-and-white snub-nosed monkey, (*Rhinopithecus bieti*) is an endangered primate species unique to Yunnan and Tibet, China. There are 23 subpopulations with a total of 3845 individuals at present (Xiao 2021). YSNM National Park is located in Tacheng Town, Yunnan Province, China and is the only place in the world to view wild YSNM. YSNM watching has become the most popular attraction for tourists in Tacheng Town and approximately 10,000 tourists visited the national park in 2015 (Data from Baima Snow Mountain Reserve). Tourists pay a fee to the local operating company which includes tickets (~100RMB/per adult), sightseeing bus, etc.

Tourists are allowed to visit the site from 8:30 to 11:30 a.m. The tourists are asked to wash/sanitise the soles of their shoes and read and understand the visiting rules before arriving at the monkey viewing site. The sightseeing bus takes the tourists from the entrance gate to the monkey viewing site. The observation time for each tourism group is one hour. The appropriate distance between tourists and monkeys is suggested to be more than 15 metres (21 feet), and feeding and contact with the monkeys is strictly prohibited during the visit (Fig. 1). Each group of tourists is usually accompanied by a tour guide to share some information about the species.



Fig. 1. Tourists watching Yunnan snub-nosed monkeys in the YSNM National Park

The Baima Snow Mountain Reserve plays an important role in YSNM tourism and conservation. The reserve staff monitor and evaluate the health status of monkeys before opening to visitors every day. The reserve also recruits volunteers all year round. Various volunteers can help with tourism management, scientific monitoring, monkey adoptions and conservation education. Approximately 23 villagers are hired as members of a monkey guardian team giving them an income of \$200-300 per person per month (22 days of work). They track the monkeys' sleeping and feeding sites and provide information about the tourism group's locations for the tourism company guides. They also provide a small amount of food (e.g., pumpkin seeds, lichens) for the monkeys and assist the reserve staff in protecting the monkeys. Although potential risks such as pathogen infection or noise of tourists may threaten the monkeys' welfare, the size of the group habituated for tourists has increased in the past few years (Afonso *et al.* 2021; Li *et al.* 2021). A YSNM-centered social network (Fig. 2) has been constructed for a balance between primate tourism and conservation, which provides a case study of key stakeholder engagement through primate tourism in China.

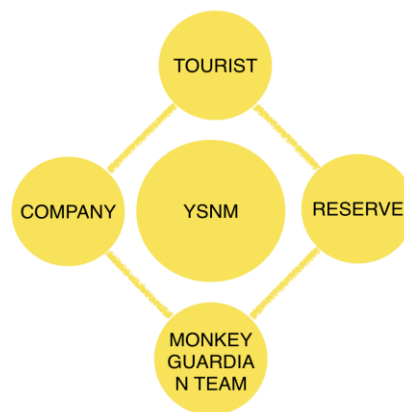


Fig. 2. YSNM-centered social network for tourism program and engagement with various key stakeholders

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Decades of Philippine Tarsier Tourism: Lessons and Challenges

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The Philippine tarsier [*Tarsius* (= *Carlito*) *syrichta*] is a flagship species and is considered an icon of the country's increasing ecotourism industry (Cowan, 2021). Tarsier tourism boomed in Bohol Island after the establishment of the Philippine Tarsier Foundation, Inc. (PTFI) in Corella in 1996, and subsequently the Philippine Tarsier Sanctuary (Figure 1) and their ecotourism initiatives (Jachowski and Pizarra, 2005). These efforts were furthered by government support paralleled with local community involvement. By 1997, the Philippine tarsier was nationally declared as a specially protected species (Proclamation No. 1030, 1997).

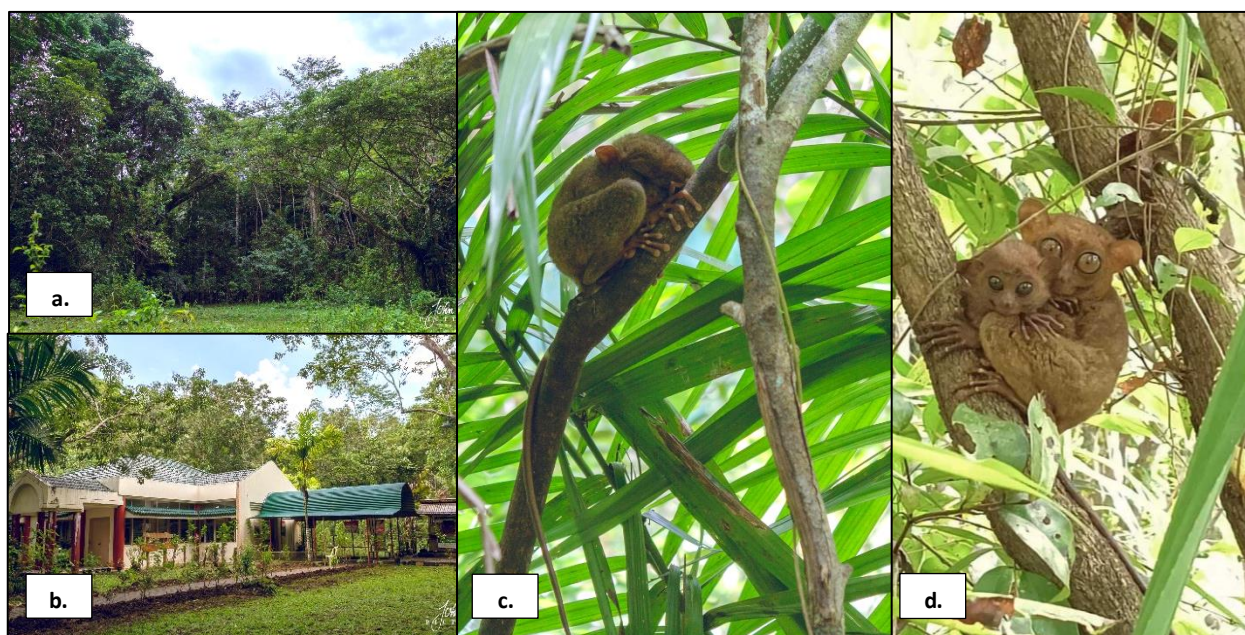


Fig. 1. The (a) Philippine Tarsier Sanctuary in Corella, showing the (b) reception area and (c-d) tarsiers in the semi-captive enclosure. Image d shows a mother and her infant captured in May 2023. It is only sanctuary that remained sustainable over the past two decades. [Photo courtesy: John Uy Arts (images a, b, c) and Philippine Tarsier Foundation, Inc. (image d)]

Arguably, after two decades, the success of tarsier tourism can be gauged in different ways. Here, we look at its impacts based on records and literature:

1. Public awareness and appreciation of tarsiers increased, shining light on existing threats and the lack of scientific knowledge about them. This prompted studies on tarsier populations both in captivity and the wild (Neri-Arboleda, 2010; Gursky *et al.* 2011; Gamalo *et al.* 2021). Several

misconceptions also surfaced (e.g., tarsiers are the world's smallest monkey; are only found in Bohol; have suicidal tendencies; and have diets consisting of charcoal and water; Aure and Escabi-Ruiz, 2005). While there have been attempts to correct these beliefs, they are still in circulation.

2. Tarsier tourism persists as a profitable industry in Bohol. However, the increasing demand resulted in the establishment of inappropriate captive facilities. Consequently, illegal poaching of tarsiers became rampant as tarsiers were utilised for display or traded to foreigners (Řeháková, 2019). While there are legally sanctioned areas, there are still reports of private places keeping tarsiers as props for tourism (Wojciechowski *et al.* 2021).
3. Existing sanctuaries and centres for Philippine tarsiers in Bohol remain operational for years. These centers conform to semi-captive settings (Jachowski & Pizzaras, 2005), where tarsiers are housed for tourist viewing. As with other sanctuaries, prioritising conservation over revenue remains a challenge, and anecdotal reports claiming mismanagement issues suggest that sanctuaries tend to prioritise the latter (The Tarsius Project, 2011). Although conditions may have improved due to new scientific bases and informed recommendations (Řeháková, 2019), the efficiency of tarsier sanctuaries as a conservation measure is still unclear, and their success is still up for debate.
4. The seeming success of tarsier tourism in Bohol and the increasing tarsier encounters by locals outside the island (e.g., DENR-R11, 2020) encouraged attempts to establish sanctuaries in other provinces, but they have been unsuccessful. For example, a sanctuary within the Mount Matutum Protected Landscape was established, but did not endure due to insufficient ecological and behavioral knowledge, and lack of planning to balance community needs, income generation, and conservation actions.

Whether or not tarsier tourism is a viable conservation strategy remains to be ascertained as there are no published studies yet on metrics indicating conservation success (e.g., influence of a sanctuary's efforts on tarsier populations and their behaviour). It can be promising, but it would require restructuring of the current ecotourism programme and realignment with conservation priorities for tourism to become successful in supporting both tarsier populations and local communities.

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Central and South America

Trash-foraging Monkeys in Costa Rica: A Case Study of White-faced Capuchin Monkeys

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A popular ecotourist destination, approximately 25% of Costa Rica's land is protected as National Parks, Wildlife Refuges, National Monuments, Biological Stations, Wetlands, and/or biological corridors (National System of Conservation Areas/SINAC - Sistema Nacional de Áreas de Conservación). As such, wildlife tourism plays a substantial role in national and local economies. Home to four species of monkeys, Central American squirrel (*Saimiri oerstedii*), the white-faced capuchin (*Cebus capucinus*), the mantled howler (*Alouatta palliata*) and Geoffroy's spider monkey (*Ateles geoffroyi*), Costa Rica provides great opportunities for viewing primates in a natural setting.

With tourism comes the associated issues of appropriate wildlife management. Tourists do not always understand, and often ignore, written and verbal guidelines for appropriate ways of behaving around wildlife: to contain trash, to protect personal and food items, to avoid close proximity with wildlife, to not feed wildlife, to secure their vehicles and accommodations from theft by wildlife, etc. Increased aggression in both directions can result: human aggression towards the wildlife and vice versa (Porrás-Murillo *et al.* 2022).

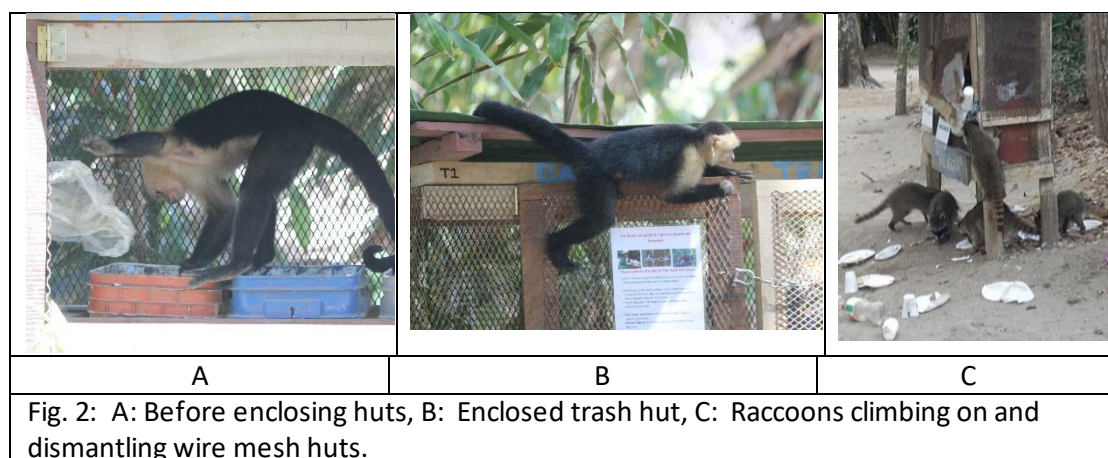
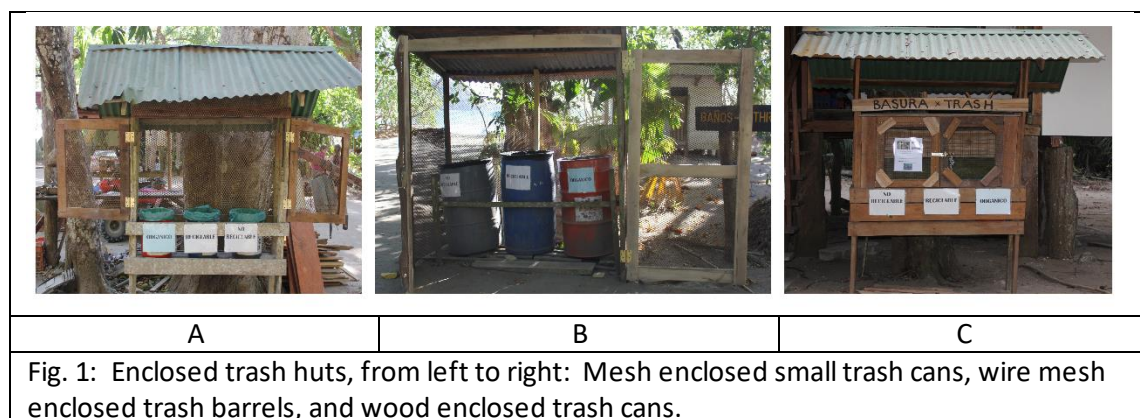
At the Curú Mixed National Park and Wildlife refuge in Costa Rica, all of these problems are of concern. We began a formal plan of wildlife management addressing first the problem of trash-foraging by monkeys and raccoons. When monkeys and raccoons forage in trash containers, they pull out packaging and food remains. Some are scattered on the ground around the containers, others are carried by monkeys through trees and dispersed further away. Wind also disperses the trash, leaving workers to regather items for disposal.

Our concerns about the trash-foraging behaviour extend beyond that of environmental damage and aesthetics to include the health of both people and monkeys. On one occasion, a monkey removed a bag of bathroom waste from a trashcan and dumped out soiled toilet paper and feminine care products. People who have to clean up after the monkeys are exposed to pathogens from saliva, urine and faecal matter from other humans as well as any pathogens transmitted from the hands and mouths of monkeys. Similarly, there is concern of disease transmission from humans to the monkeys; of particular concern are COVID-19 and tuberculosis. Behavioural effects were concerning in that increased aggression has been observed

in monkeys fighting over access to prized trash and food items (Baker, unpublished data, McKinney, 2014).

The wildlife refuge already had small trash “huts”. Each hut is approximately 1 ½ m long and 2 m high and has a roof to prevent rainwater from accumulating in the trash buckets. Each hut holds 3-4 buckets about 1 m above the ground. There were also two larger huts sheltering large trash barrels (see Fig. 1). These huts were ineffective at preventing trash foraging by wildlife.

To address the problem we enclosed trash containers, preventing access by the monkeys. We tested two methods of enclosing the huts: Fitting each with doors that could be clipped shut and then wrapping them in either wire mesh or wood (Fig. 1). We found both to be effective against monkeys but raccoons could easily climb the wire mesh, discover weaknesses, and pull the mesh away from the frame (Fig. 2). We also learned that the mesh needed significant upkeep because it is more vulnerable to weather damage. The wood enclosures, however, are effective against both monkeys and raccoons and are durable through time: The original wood-enclosed hut built in 2016 is still in use in 2022 and has not required repairs (Fig. 2).



The refuge is now replacing all open trash containers with those enclosed by wood and explaining their use to tourists. The next steps, recently begun, have been to implement a programme of education outreach in the local communities and at the

refuge to address health concerns related to feeding wildlife. We are beginning to visit schools and give talks about monkeys' needs for forest foods. To reinforce the message, we have developed a board game that replicates the foraging needs of the monkeys and raises awareness about inappropriate human-oriented behaviours (accessible online: <https://www.capuchinmonkeys.com/copy-of-games>). We are also providing stickers with a monkey's face and reminding people not to feed wildlife. We anticipate addressing human behaviour will be a greater challenge, but are hopeful the "fun" messaging, rather than admonishing problem behaviour, will be effective.

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Pygmy Marmosets, Amazonian Tourism and Noise Disturbance

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Primates are the most commonly advertised species group for wildlife tourism in Latin America (D’Cruze *et al.*, 2018), and as pygmy marmosets (*Cebuella* spp.) are the world’s smallest monkey they can be a big draw for tourists. The species is threatened by the international pet trade and is one of the most traded primate species in Peru (Shanee *et al.*, 2017). Pygmy marmosets are also affected by habitat loss and disturbance (de la Torre *et al.*, 2000), but can be found in secondary flooded forests and close to human settlements (Barker, 2022). In their small home ranges, they repeatedly visit a small number of trees along riverbanks where they extract and feed on sap and gum (Figure 1a). This makes it relatively easy to predict their daily movements (de la Torre *et al.*, 2000), so some groups are regularly visited by tourists. Most tourists are on guided tours by motorboat or canoe as walking tours only take place in the dry season on high ground.

Although pygmy marmoset groups are often found close to humans, tourism does seem to change their behaviour. Western pygmy marmosets (*Cebuella pygmaea*) in Ecuador play less and are found higher in trees in areas with more tourism (de la Torre *et al.*, 2000). Eastern pygmy marmoset (*Cebuella niveiventris*) groups near Tahuayo Lodge in Peru (Figure 2b) had different call pitches and lengths when they had higher exposure to anthropogenic noise such as boat motors, tool use, music and speech (Barker, 2022). These groups also fled more often when exposed to louder human voices (Sheehan and Papworth, 2019), and never fled from silent humans. A second study found higher fleeing and vigilance to human voices than silence using remote camera traps (Barker, 2022). Fleeing is energetically demanding and it can stop pygmy marmosets from feeding as they are so reliant on a very few trees. Fleeing also means tourists have less time to view animals. However, when Hawkins and Papworth (2022) conducted a similar study at the site, they found that pygmy marmosets were more likely to flee from silence than human voices. The reasons for these differences are unknown but groups may habituate to noise over time and reduce their response.



Figure 1. a) an Eastern pygmy marmoset (*Cebuella niveiventris*) on a feeding tree near Tahuayo Lodge, Peru. b) Tahuayo Lodge, a tourist lodge on the edge of the Área de Conservación Regional Comunal de Tamshiyacu-Tahuayo (ACRCTT), south of Iquitos, Peru.

We don't know if these behavioural changes could lead to population decline, however, de la Torre (2000) suggests that high levels of tourism and the impacts it has on social and vocal behaviour could be related to lower reproductive rates and infant survival. However, minimising noise can improve the visitor experience by allowing longer observation times, and reduce behavioural change in visited primates. Limiting the use of motor boats and using paddled canoes while viewing the marmosets and having fewer tourists on a tour (so they produce less noise) could minimise the impacts on wildlife (Barker, 2022). Tourism companies could produce the same noise reduction but maintain visitor numbers by encouraging tourists to be quieter while visiting wildlife. At Tahuayo Lodge, Hawkins (2019) evaluated whether sharing written information about the negative effects of loud human speech on pygmy marmosets changed tourist's self-reported behaviour and preferences while on a guided tour. No difference was found between the groups which did (n=38) and did not (n=41) see the information (Fig. 2), though the study did not measure actual differences in behaviour. Written statements may not be the best way to encourage responsible tourist behaviour, though other methods could be effective. Moving forward, we encourage monitoring and evaluation of techniques to encourage responsible primate tourism – sharing evidence will allow successful approaches to be adopted across multiple primate tourism sites.

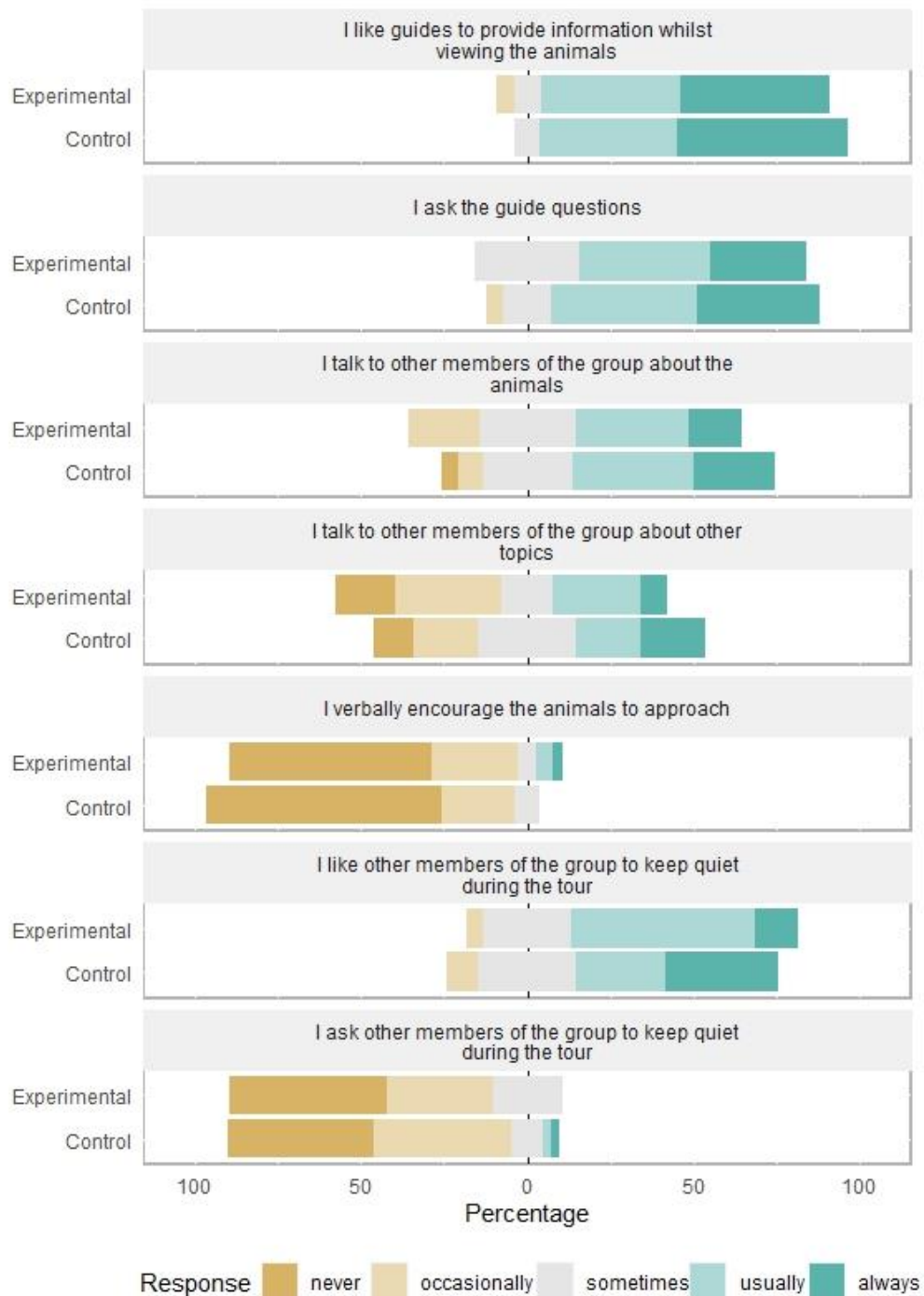


Fig. 2: No difference in self-reported behaviour was found between tourists which were (experimental group, n=38) and were not (control group, n=41) given information about the negative effects of loud human speech on pygmy marmosets (Hawkins, 2019).

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