

Unregulated Human Provisioning of Primates: Advice for Conservation Practitioners

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Version 1.0



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Cover photos by (from left to right, starting from the top):

Barbary macaque (*Macaca sylvanus*) @Ahmed El Harrad

Long tailed macaques (*Macaca fascicularis*) @ Paula Pebsworth

Geoffroy's spider monkey (*Ateles geoffroyi*) @ Denise Spaan

No feeding sign @ Andie Ang

Hanuman langurs (*Semnopithecus entellus*) @ Paula Pebsworth

No littering sign @ Malene Friis Hansen

Monkey proof bin @ Andie Ang

Chacma baboon (*Papio ursinus*) @ Paula Pebsworth

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Table of contents

Introduction	5
Recommendations	7
Acknowledgements	12
References	12

Introduction

Provisioning is defined as “the offering of food to wildlife beyond the natural availability or quality of food resources in their environment” (Fa 1986). While unintentional provisioning happens when anthropogenic food resources, such as agricultural crops, fruit trees in gardens, or food discarded by humans, become accessible to primates (e.g., Sengupta *et al.* 2020; van Doorn and O’Riain 2020; Ilham, 2023; Freiere *et al.* 2024), intentional provisioning is defined as “food deliberately supplied to free-living or semi-domesticated wildlife” (Murray *et al.* 2016: 164) and occurs in diverse contexts (Waters, Sengupta, Hansen *et al.* 2025; Sugiyama 2015). At some locations, provisioning is strictly prohibited (Li *et al.* 2023; García de la Chica *et al.* 2023); yet, intentional, uncontrolled (hereafter unregulated) provisioning continues to be common across countries where primates occur (Waters, Sengupta, Hansen *et al.* 2025).

Provisioned food resources are usually calorie-rich, easily digestible, and available in greater quantities than natural resources, and they often appear at a predictable time and place (Becker and Hall 2014; Oro *et al.* 2013). As a result, most free-ranging primates will take the opportunity to forage on provisioned food. People who engage in provisioning often believe that primates choose to eat provisioned food due to a lack of alternatives and perceive their actions to be compassionate towards the primates. However, this is rarely the case. Primates only “need” to be provisioned when their groups exceed the carrying capacity of ecosystems due to prior provisioning, or when habitat destruction occurs faster than natural population fluctuations can accommodate (Kurita 2014).

Unregulated provisioning has numerous consequences for primate physiology, behaviour, demography and health (e.g., Asquith 1989; Boug *et al.* 1994; Saj 1999; Thatcher *et al.* 2019; Hansen *et al.* 2020). Provisioned groups are often larger (Altmann and Muruthi 1988) and have more frequent inter- and intraspecific aggressive social interactions, which increase the risks of primate injury and death (Zhao 2005; Hsu *et al.* 2009; Radhakrishna and Sinha 2011; Al Ghamdi *et al.* 2023). Roadside provisioning of primates heightens the risk of traffic accidents, resulting in human and primate injuries and mortality (Ilham 2024). In areas where people are struggling to coexist with primates, provisioning may exacerbate negative interactions.

Commonly Employed Mitigation Methods

Here, we focus on unregulated provisioning of primates in urban and tourist areas. In some countries, strategies have been developed to limit primate access to human food waste in bins and other large refuse containers. The strategies include separating and composting organic waste, as well as installing specially-designed monkey-proof waste containers. These may feature modifications such as secure latches, self-closing or screw-on lids, and designs that prevent the container from being tipped over (Figure 1) (Effendy *et al.* 2024; Paramasivam 2024; Baker 2023). In tourist sites, open-air restaurants may be covered in mesh or wooden cages to prevent primates from entering and taking food (Waters, Sengupta, Hansen *et al.* 2025; Cui *et al.* 2021). All these measures have varying levels of success. For example, while bin latches have proved effective at eliminating long-tailed macaque foraging at trash bins in urban Malaysia, they are only effective if all households use the latch (Paramasivam 2024); further, while available commercially, they may be cost-prohibitive.



Figure 1. Examples of monkey-proof waste containers (Photo collage by Paula Pebsworth).

Attempts to curb larger group sizes focusing solely on population control measures have proven ineffective (Brotcorne *et al.* 2023) and do not address the human and primate behaviours behind provisioning. Lethal methods such as shooting, snaring, spearing, and poisoning primates (e.g., Katsvanga *et al.* 2006) may effectively eliminate individual “problem animals”. However, these measures are, in most cases, illegal and socially unacceptable for cultural, religious, and ethical reasons (Fehlmann *et al.* 2020), and rarely provide a lasting solution. In exceptional cases where human and primate safety are at serious risk, national authorities may determine that removal of individuals or groups is warranted. Such actions should comply with ethical standards and national legislation, and be used only as a last resort.

Since human behaviour often drives problems associated with primate provisioning (Veríssimo *et al.* 2024), efforts to reduce provisioning must explicitly focus on changing human behaviour by reducing provisioning directly, targeting waste management or other methods to avoid the inadvertent availability of anthropogenic food to wild primates. Below, we provide a range of recommendations preceded by a basic decision tree to aid practitioners, followed by more specific recommendations related to the different contexts of unregulated provisioning of primates.

Recommendations

Here, we provide a basic decision tree (Figure 2), followed by general and more specific recommendations.

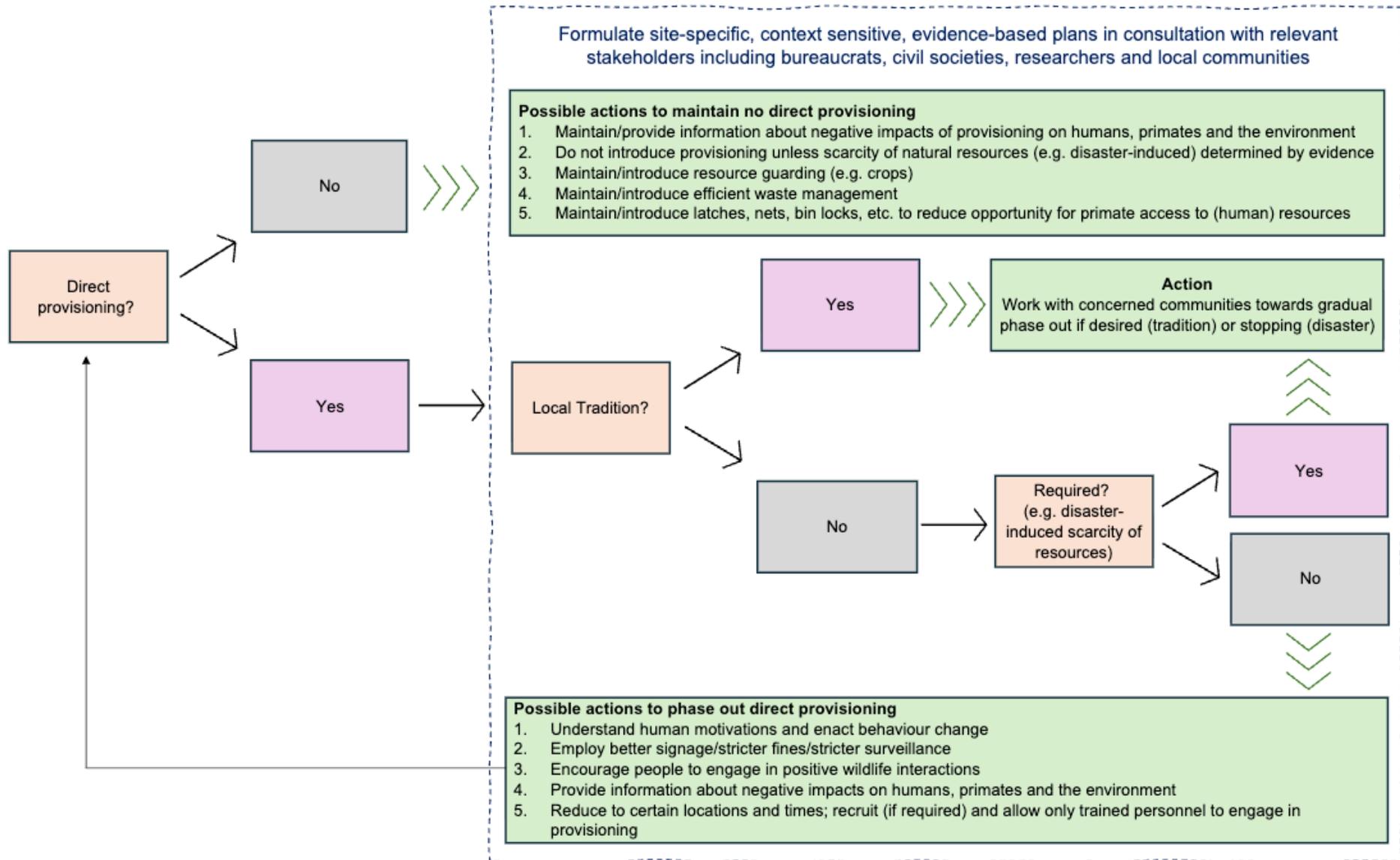


Figure 2. Decision tree for determining actions based on the current status of provisioning.

General Recommendations

- Before commencing any activities related to discouraging or eliminating unregulated provisioning, ensure that the project has local community support and will be carried out in collaboration with them.
- Confirm that the local community wishes to remove/reduce/change the current provisioning practices. Because provisioning may provide income, serve as a form of bonding with primates, or represent a cultural practice with historical roots, it is important to explore alternative activities that can preserve these connections or even foster new ones. Strong relationships and mutual understanding are crucial to coexistence.
- Knowing your goal is vitally important prior to designing any kind of strategy or campaign. Goals may include: disrupting the development of a provisioning location at roadsides or in urban areas; limiting primate access to human foods; eliminating or decreasing negative human-primate interactions.
- There is no 'one size fits all solution'. Hence interdisciplinary research is a must for understanding how and why people provision primates in order to devise site- and context-specific solutions (See Waters, Sengupta, Hansen, *et al.* 2025).
- Practitioners with expertise in conservation behaviour change should be involved in the design of any intervention seeking to alter the human behaviour surrounding provisioning. Behaviour change campaigns can have unintended consequences, or even exacerbate a problem (Cialdini *et al.* 2006).
- It is important to note that the reasons why people provision primates may differ among groups of people between sites and within the same site. For instance, tourists and residents may provision primates for different reasons.
- After identifying the behavioural drivers, focus on selecting suitable levers through which to change human provisioning behaviour and, if appropriate, provide an alternative behaviour.
- Ensure that the mechanisms for change adequately address or mitigate provisioning behaviour. It is imperative that a monitoring and evaluation programme accompanies any intervention, to ensure that it has the desired effect.
- Engage with highway/transport departments and officials to prevent the development of roadside provisioning hotspots and discourage provisioning in places where it is not yet established.
- Set up a long-term, adequately funded project to ensure a gradual decrease in dependency on provisioned foods in the primates.

Campaign Ideas

- Efforts should also focus on identifying and targeting specific audiences. A general “public awareness” campaign is unlikely to reach the individuals directly involved in provisioning. Modifying outreach to specific audiences allows for more nuanced, effective, and appropriate solutions.
- Using a multi-pronged approach such as combining education, so that visitors know about the human health risks associated with primates accessing food waste, with improved access to primate-safe waste disposal (environmental restructuring) is likely to be more effective than a single approach.
- Encourage alternative, positive, non-harmful interactions with wildlife, such as photography competitions, educational tours, or guided observation, to divert attention from intentional provisioning.
- Develop volunteer opportunities that generate positive outcomes for primates, which can replace provisioning. Examples include garbage clean-ups in areas where primates congregate, installing locking mechanisms on trash bins, or affixing burglar bars to windows to reduce access to buildings.
- Develop a volunteer programme where guides identify good locations for viewing/photographing primates (where they congregate naturally, such as favourite fruit trees) rather than provisioning to draw them to a particular location.
- Go beyond traditional signage that simply asks people not to provision and include interactive and participatory approaches. For instance, guided tours, workshops and/or community events that demonstrate the consequences of unmanaged intentional provisioning.
- Engage artists to produce compelling artwork that showcases the many positive ways of interacting with primates where safe distances are kept and food is not involved. They may also showcase the negative ways in which people will end up harming primates, ecosystems and themselves should they engage in unregulated provisioning.
- If provisioning takes place only during certain periods such as religious and/or school holidays this presents a strategic opportunity to implement targeted interventions.

Communication Recommendations

- Include media professionals as stakeholders to decrease toxic media reports of primate feeding and incidents related to the activity.
- Discourage the use of negative language about and towards primates by stakeholders and media.

- Be very careful with social norms: avoid accidentally suggesting that an undesirable behaviour is commonplace or acceptable.

Environment Recommendations

- If applicable, practitioners can collaborate with other groups such as those working to reduce plastic pollution or manage feral dog numbers to develop anti-waste, anti-provisioning strategies.
- Consider specially manufactured and tested bin locks for the public and others to use as a deterrent to bin foraging primates.
- Join or develop campaigns to reduce food waste in small communities without regular waste removal or where wasting food is culturally unacceptable.
- Provide and regularly empty appropriate waste disposal systems at sites where people and primates overlap.
- Stricter monitoring and stringent imposition of fines for public feeding – forest department officials could do this in and around forested areas. Local youth could be engaged to design flyers and inform visitors at tourist sites to only observe and not feed primates.
- Where provisioning cannot be stopped in its entirety, consider suggesting or facilitating alternative behaviour. Is there a particular location, personnel or foodstuff which leads to safer provisioning? Making this easier than the alternative is simpler than trying to stop behaviour completely.

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