

Frugivory in the Laughing Kookaburra associated with artificial food provisioning

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INTRODUCTION

This short note presents observations of the Laughing Kookaburra *Dacelo novaeguineae* exploiting cultivated fruit in response to artificial food provisioning. Both observations were made at an urban parkland in Tanilba Bay, New South Wales, Australia (32.721°S, 151.993°E) on 13 February 2022.

Artificial food provisioning or supplementary feeding is a widespread activity in which members of the public provide food to wildlife in return for closer interactions with wildlife (Newsome & Rodger 2008; Davies *et al.* 2009). The practice occurs globally and is one of the most common forms of human-wildlife interactions in developed countries (Jones & Reynolds 2008). However, a number of negative consequences associated with artificial food provisioning have been raised, including the habituation of animals to human presence and the associated increased risks of anthropogenic injuries for animals that are drawn in (Christiansen *et al.* 2016), impacts on animal nutrition and health (Civitello *et al.* 2018), and alterations to natural patterns of behaviour and ecology where provisioning occurs over an extended period of time (Orams 2002).

Kookaburras are large to medium-sized kingfishers that are exclusively carnivorous (Legge 2004). The Laughing Kookaburra has a particularly broad diet, comprising invertebrates, including insects, spiders and molluscs, and vertebrates such as lizards, snakes, small mammals and birds, and occasionally frogs and fish (Green *et al.* 1988; Rose 1997; Higgins 1999). Their hunting style typically consists of a sit-and-wait technique from an elevated position in which the kookaburra swoops down on prey that comes within view (Forshaw & Cooper 1983). The Laughing Kookaburra is also opportunistic and readily habituates to food provisioning (Legge 2004; Chapman 2015).

OBSERVATIONS

In the first observation of frugivory, the kookaburra was seen perched in a large tree, holding a banana peel (**Figure 1**). The kookaburra repeatedly slapped it against a tree branch for approximately two minutes until the majority of the peel had broken off and dropped to the ground, after which the kookaburra swallowed the part of the peel that remained in its bill (**Figure 2**). After approximately 15 minutes, a kookaburra, potentially the same individual, descended to the ground, recovered the remains of the peel and flew away with it.



Figure 1. A Laughing Kookaburra grasping a banana peel by the tip of its bill, between slapping actions against a tree branch. (Photo by Matthew Mo).

Directly after the above observation, a second kookaburra was observed perched in a tree with a wedge of apple in its bill (**Figure 3**). The wedge appeared to have been freshly cut based on the light-coloured appearance of the apple flesh, not showing signs of enzymatic browning. The kookaburra grappled with the wedge in its bill for approximately two minutes before flying out of view.



Figure 2. Following slapping against a tree branch, a banana peel was reduced to a smaller portion for swallowing by a Laughing Kookaburra. (Photo by Matthew Mo).



Figure 3. A Laughing Kookaburra handling a wedge of apple in its bill (Photos by Matthew Mo).

DISCUSSION

Observations of frugivory in the Laughing Kookaburra are significant given the extensively studied carnivorous diet of the species (Higgins 1999). Although the observations were limited to a small period of time and a single location, the behaviour was observed in multiple kookaburras, at least two individuals and potentially three individuals. This provides evidence that this behaviour, while clearly opportunistic, was not isolated.

Although the banana peel was potentially a discarded item and no person/s were directly

observed provisioning food, the freshly cut appearance of the apple wedge was firm evidence that artificial food provisioning was involved. Cultivated fruit is a common food item involved in artificial provisioning, being commercially available and relatively inexpensive (Orros & Fellowes 2015; Støstad *et al.* 2017). The Laughing Kookaburra is also a common species attending food provisioning stations, with one study identifying them within the top ten birds in Australia that exploit artificial food (Chapman 2015). Based on the contrast between cultivated fruit and the normal diet of the Laughing Kookaburra (Higgins 1999), the person/s provisioning the food were likely providing the food for other species, which the kookaburras exploited.

There is a growing body of scientific literature reporting wildlife exploiting provisioned food contrary to their usual diet (Chace & Walsh 2006; Baicach *et al.* 2015; Feng & Liang 2020; Mo 2021). One prominent example in birds has involved Rainbow Lorikeets *Trichoglossus moluccanus*, which naturally feed on fruit, pollen and nectar (Higgins 1999), exploiting mince meat left out for carnivorous birds (Gillanders *et al.* 2017). The observations in this short note represent a reversal of this scenario, in which a carnivorous species opportunistically switches to plant-based foods for the benefit of conserving hunting effort.

Notably, the behaviour the first kookaburra displayed with the banana peel is the same technique kookaburras use to dismember large prey into portions that can be swallowed whole (Parry 1970). How the kookaburra would have dismembered the apple wedge was not observed. It may have adopted the same technique or relied on conspecifics to cooperatively dismember.

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