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SHORT NOTE

Captive caracals (*Caracal caracal*) depredate a wild tui (*Prosthemadera novaeseelandiae*) within zoo enclosure

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Zoological parks are inherently designed for education and conservation (*e.g.,* Mazur & Clark 2001; Conde *et al*. 2011). Zoos endeavour to safely present a wide range of species both endangered and common from all over the world in a captive situation. Measures are taken to ensure the welfare and safety of zoo animals, the general public and zoo employees (Hosey *et al*. 2013). However, interactions between captive animals and the wild animals that inhabit areas both within and surrounding the zoo premises can occur but have been rarely described in the scientific literature. It is presumed that wildlife, in particular, birds, are rarely preyed upon by captive predators such are the stringent guidelines as to the security of their enclosures.

On 24 November 2015 at 1300 h at a zoo in New Zealand, 2 captive caracals (Family: Felidae; *Caracal caracal*), a medium-size carnivore native to Africa and south-western Asia, were observed attacking and killing a tui (*Prosthemadera novaeseelandiae*) that had breached their enclosure (Fig. 1). The tui appeared to be an adult male and was not banded. The caracal pair was observed attacking the bird together. The tui initially sounded its alarm call, and attempted to escape several times on the wing, but the caracals finally killed the tui after ~15 minutes. It was unclear whether they ate the bird after killing it. There were thick glass panels surrounding the enclosure and between the public observation area and the enclosure. The roof and some of the sides of the enclosure was fitted with chain link fencing and reinforced metal mesh grilles. It appears that the holes within the meshed fencing allowed wild birds to pass in and out. The tui may have entered in order to feed on insects, or on flowering or fruiting plants within the enclosure.

This is the first report to our knowledge of a captive predator killing an endemic New Zealand bird. Although likely a rare event, it was clear that on this occasion not enough was done to prevent wild birds from entering the enclosure. Zoo guidelines state that caracals must be kept fully enclosed with

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Fig. 1. A captive caracal holds a tui in its mouth after catching it following the bird's breach of the caracal enclosure.

no climbable or unclimbable barrier, of any height, within their enclosure (ZAA NZ 2013). Coupled with the knowledge that caracals will catch birds in flight by twisting and leaping into the air (Bothma *et al*. 1999), this incident should prompt a rethink of enclosure design as regards potential access into the enclosure by wild birds. It is recommended that zoos monitor the frequency of such incidents and implement appropriate interventions for their prevention.

Native New Zealand birds already face increased predation risks from introduced mammalian predators such as domestic cats (*Felis domesticus*), feral cats (*Felis sylvestris*), dogs (*Canis canis*), rats (*Rattus* spp.), stoats (*Mustela erminea*), and possums (*Trichosurus vulpecula*), and increased mortality from road collisions (Sullivan 2013). An estimated >25 million native New Zealand birds are killed annually in New Zealand by introduced mammalian predators (*e.g.,* van Heezik *et al*. 2010; Department of Conservation 2014), and a further 1 million birds in New Zealand estimated to be killed on New Zealand's roads per year (Sullivan 2013). As the native New Zealand avifauna should not also be at additional risk of predation within zoos, we recommend zoos take extra precautions in order to safeguard protected wildlife from being predated by captive animals.

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