

Wedge-tailed Eagles *Aquila audax* regularly sunning during a camera-monitoring survey

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Abstract. Two Wedge-tailed Eagles *Aquila audax* sunning were observed on images from a monitoring camera that was located at Flinders–Goolman Conservation Estate, in Ipswich Local Government Area, south-eastern Queensland. I observed the Eagles across multiple days in March–April 2023 whilst the camera was in place, despite the camera being unbaited, and originally positioned to detect Brush-tailed Rock-wallabies *Petrogale penicillata*. The images showed one adult, a pair of adults or an adult and a juvenile Eagle. This behaviour has been poorly documented in this species, although it has been widely observed in other bird species.

Introduction

The Wedge-tailed Eagle *Aquila audax* is Australia's largest bird of prey, and a key terrestrial, apex predator in Australia (Cherriman *et al.* 2022). It is widespread across Australia and Tasmania, and occurs in a diversity of habitats, including rainforests, woodlands and arid areas (Cherriman *et al.* 2022). It is listed as of Least Concern on the IUCN Red List of threatened species, although the Tasmanian subspecies (*Aquila audax fleayi*) is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Bekessy *et al.* 2009). Wedge-tailed Eagles are monogamous and territorial, and rear one or sometimes two chicks per clutch (Marchant & Higgins 1993; Debus 2017). They are scavengers and will also feed on live prey, such as macropods (Macropodidae) (Fuentes & Olsen 2015) or introduced European Rabbits *Oryctolagus cuniculus* and European Hares *Lepus europaeus* (Sharp *et al.* 2002). Threats to this species include land clearing (large trees are favoured for nesting), vehicle collision whilst scavenging on roadkill, and secondary poisoning (Bekessy *et al.* 2009).

Here, I briefly report on observations of Wedge-tailed Eagles sunning, which were detected on camera traps during March and April 2023.

Observations

Four remote monitoring cameras (Browning Strike Force DCL) were deployed (unbaited) around the slopes of Mount Goolman, in Flinders–Goolman Conservation Estate, Queensland, for 1 month during March and April 2023. Mount Goolman consists of Queensland Regional Ecosystem 12.8.24 (Spotted Gum *Corymbia citriodora* subsp. *variegata* open forest on Cainozoic igneous rocks especially trachyte) interspersed with boulders and small caves. The area of woodland in the Conservation Estate is ~2200 hectares, and one of the largest patches of remnant vegetation in Ipswich and Logan Local Government Areas (the Conservation Estate borders the two local government areas). Cameras were not baited, were set to take three

images when triggered, with a delay of 1 minute between triggers, and had been positioned to detect the presence of Brush-tailed Rock-wallabies *Petrogale penicillata*. They were collected and the images searched for Rock-wallaby presence and to compile a species list at the site. Wedge-tailed Eagles were observed sunning (Figures 1a–c) on images from one camera (located at –27.75953, 152.7988) but did not appear on images from any of the other three cameras.

I observed 79 images with Wedge-tailed Eagles on them, across 4 days (out of 30 when the camera was deployed). Most images (56) had one individual, but 23 had two individuals: a juvenile and an adult in some images, a pair of adults in others. On the relevant dates, the juvenile would likely still have been dependent or associating with the adults. The Eagles appeared between 0930 and 1230 h on all occasions. The maximum temperatures at the nearest weather station on the days when the Eagles were sunning were between 28 and 29°C. Forty-nine images showed the Eagles basking in the sun, with the other images showing the Eagles preening or standing in front of the camera.

Discussion

This observation of Wedge-tailed Eagles sunning is significant as I could find no previous documentation or photographs of this behaviour for this species.

Many species of birds will expose themselves to solar radiation (sunning or sunbathing to control ectoparasites: Blem & Blem 1993; Bush & Clayton 2018). This has been widely observed in common Australian species such as Australian Magpie *Gymnorhina tibicen*, as well as other Australian birds of prey, such as the Little Eagle *Hieraaetus morphnoides* (Debus 2017). The ultraviolet radiation may kill the ectoparasites directly, or increase their vulnerability to preening as they escape from the heat (Clayton *et al.* 2010; Gutiérrez *et al.* 2020). It is likely that the heat also helps the preen oil to be distributed throughout the feathers, which may in turn help to remove parasites (Clayton *et al.* 2010). Interestingly, some birds will sun to the point of heat stress (as evidenced by panting), with



Figure 1. Wedge-tailed Eagles sunning on the slopes of Mount Goolman, Flinders–Goolman Conservation Estate, Queensland. (a) Pair of adults, March 2023. (b) Adult, March 2023. (c) An adult and a juvenile, April 2023. Photos: Hannah Thomas

Black Noddies *Anous minutus* sunning more frequently during hotter temperatures (Moyer & Wagenbach 1995), and Hooded Vultures *Necrosyrtes monachus* observed sunning on a sandy substrate that reached almost 60°C (Gutiérrez *et al.* 2020). Similarly, some ectothermic animals use higher temperatures to combat parasites; Desert Iguanas *Dipsosaurus dorsalis* have been observed moving to warmer microclimates in response to bacterial infection (Kluger *et al.* 1975). It is likely that the Wedge-tailed Eagles observed here were also controlling their ectoparasite load.

This observation also highlights the importance of camera monitoring on non-target species. For example, if researchers are targeting nocturnal species, images taken during daylight hours may be ignored. It is therefore important to thoroughly check all camera images when time and resources permit.

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