

Dead Blue Wildebeest legacy: an unexpected opportunistic thermoregulation support for Nile Monitor, *Varanus niloticus* (Linnaeus, 1766), in Kenya

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Reptiles are ectotherms that rely on behavioural or physiological mechanisms to regulate their body temperature (Huey, 1982; Nowakowski et al., 2018; Chessman, 2024). Basking is the most common thermoregulatory behaviour, typically occurring on natural substrates like vegetation, rocks, or banks (Capula et al., 1994; Erdélyi et al., 2021). However, when conventional basking or refuge sites are limited, reptiles may opportunistically exploit alternative substrates for thermoregulation, including other vertebrates. For instance, some turtles utilise the backs of domestic Water Buffaloes, *Bubalus bubalis* (Linnaeus, 1758), as basking platforms (Özkoç et al., 2025). Similarly, in environments where suitable large shelters are scarce, Darwin's Marked Geckos, *Homonota darwinii* Boulenger, 1885, have been observed using carcasses, specifically those of Magallanic penguins (as daytime refuges), a behaviour likely driven by thermal requirements (Entringer-Jr. et al., 2023). While interactions with megafauna are rarely documented in reptiles, these interactions offer unique insights into the plasticity of thermoregulatory strategies (Stebbins et al., 1967; Dickman, 1992; Kerley, 2021; Jameson et al., 2024). Here we present an observation of unexpected opportunistic thermoregulatory support for the Nile Monitor, *Varanus niloticus* (Linnaeus, 1766), involving the carcass of a Blue Wildebeest, *Connochaetes taurinus*

(Burchell, 1823), in Kenya.

The observation was made on 31 August 2025 by Tom Heijnen at Purungat Bridge in the Masai Mara National Reserve, Kenya (1.5459°S, 35.0188°E; elevation 1471 m). While observing numerous carcasses of Blue Wildebeest that had drowned while crossing the Mara River, an adult Nile Monitor was observed basking on the carcass of one of the antelopes (Fig. 1). The interaction



Figure 1. Adult Nile Monitor, *Varanus niloticus*, basking on the carcass of a Blue Wildebeest, *Connochaetes taurinus*, at Purungat Bridge, Masai Mara National Reserve, Kenya, 31 August 2025. The carcass likely provided an elevated and heat-retaining substrate for opportunistic thermoregulation. Photos by Tom Heijnen.

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was photographed from a sufficient distance to avoid disturbing the animal. At the time of observation, the sky was mostly clear, with an ambient temperature of 24–25 °C and a light wind. The observation lasted approximately ten minutes, during which the lizard remained motionless on the remains. No other monitor lizards were observed in the immediate surrounding area.

To the best of our knowledge, this is the first documented evidence of this type of basking behaviour in Varanids observed in Kenya, and perhaps anywhere. Our observation provides a new example of opportunistic interaction between a large reptile and the remains of a large mammal for thermoregulatory purposes. Although the use of carcasses as basking supports is rarely documented, it highlights the behavioural plasticity of monitor lizards in savanna ecosystems. Monitor lizards are known to use a large diversity of basking sites to optimise their body temperature (King and Green, 1999). Nile Monitors typically bask on riverside trees, and are rarely observed in groups (Zdunek and Chew, 2023;

Zdunek et al., 2024). In the Mara River, the seasonal abundance of Blue Wildebeest carcasses provides not only a potential food source but also elevated, semi-open structures that may offer better exposure to solar radiation than the surrounding riverbanks (Subalusky et al., 2017). Interestingly, at the observation site, the riverine vegetation had been significantly impacted by the high level of flowing water and some human activity, with several trees having been cut down (Fig. 2). Although some Yellow-fever Trees, *Vachellia xanthophloea*, were still present along the riverbank, the overall reduction in natural arboreal structures may have limited the availability of traditional basking sites. Such modified environments may increase the likelihood of unintentional or opportunistic substrate use.

The choice of a carcass as a basking support may be linked to the substrate's specific thermal properties. Large mammal remains, especially when exposed to direct sunlight, can act as effective thermal sinks (in association with the fermentation of the decomposing body), absorbing and retaining heat more efficiently



Figure 2. Modified river habitat at the observation site. Remains of trees cut down by local residents along the banks of the Mara River. Partially cleared area showing the reduction of natural basking substrates, which potentially drives opportunistic behaviour in *Varanus niloticus*. Photo by Tom Heijnen.

than damp riverine soil or certain types of vegetation. The lizard likely optimised its body temperature through a combination of solar basking and thigmothermy, exploiting the carcass as a stable heat source in an environment where natural arboreal basking sites were limited (Huey, 1982; Seebacher, 2005; Vitt and Caldwell, 2014). This opportunistic use of organic matter mirrors other documented cases where reptiles utilise unusual biological supports, such as freshwater turtles using the backs of domestic Water Buffaloes as basking platforms (Özkoç et al., 2025). In both cases, the reptiles appear to exploit available surfaces that provide stable elevation and potentially advantageous heat-retention characteristics (Vignoli et al., 2015). These observations, even as single events, can broaden the scope of information about the influence of a modified environment and the plasticity of habitat use in monitor lizards.

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