

## Diet and feeding in the Cape Cobra, *Naja nivea*

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### Abstract

It is widely reported that African cobras (genus *Naja*) are generalist predators, but examination of formal literature yields relatively little evidence of this for most species. Here, we review the diet of cape cobras (*Naja nivea*) based on examination of museum specimens, an extensive literature review, and social media reported natural history observations. We quantify dietary niche breadth and test the hypothesis that cape cobras are generalist predators. Additionally, we test the hypotheses that diet varies significantly (1) across biomes, and (2) across winter, summer and year-round rainfall regions. We gathered 101 feeding records for cape cobras and based on family-level prey frequencies calculated Levins' measure of niche breadth as  $B = 6.57$ , which we standardised to  $B_A = 0.29$ . We found no association between prey classes and biomes or rainfall region. Our data indicate that cape cobras consume a wide range of vertebrate prey from all four tetrapod classes, including a large number and diversity of snakes. Our findings suggest that cape cobras may be involved in several important ecological processes. Moreover, our study demonstrates the utility and value of collating natural history observations reported on social media platforms.

### Introduction

African cobras (genus *Naja*) are widely reported in the popular literature as generalist predators characterised by broad diets that often include other snakes (Branch, 1998; Marais, 2004). However, examination of the formal literature yields little evidence of this for most species (see Shine *et al.* 2007). This paucity of formal documentation likely arises as a result of the limited accessibility of specimens available for examination in African collections, the generally low frequency with which many snakes feed and the even lower frequency with which feeding is observed (Greene 1997), as well as the diminishing popularity of natural history studies globally (Greene 2005). However, studies that catalogue and quantify dietary habits of snakes are of foundational importance in understanding questions of evolution, ecology and conservation (Rodríguez- Robles 2002). Moreover, in the case of medically important species, such as cobras, dietary studies can be critical in understanding variation in venom action (Daltry *et al.* 1998; Barlow *et al.* 2009) with important implications for ameliorating the impacts of human-snake conflict.

















