A67 Vulture and Black-Backed Jackal Scavenging: Forensic Implications for the Recovery of Scattered Remains in South Africa

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Learning Overview: The goals of this presentation are to present the scattering patterns of vultures and black-backed jackals in South Africa and to highlight the influence of specific environmental features on the scattering patterns. The principles of the link search method, and their combination with the grid search pattern, are outlined as the ideal search method for scattered remains.

Impact on the Forensic Science Community: Scavenging animals occur globally. This presentation will impact the forensic science community by providing a better understanding of scavenger scattering patterns that will assist forensic specialists in the holistic recovery of scattered remains. The basic recovery principles of the link search method, combined with grid search pattern, are applicable internationally.

Twenty pig carcasses (*Sus scrofa domesticus*) (40–80kg) were placed at two research sites (ten at each site). Each site represented a different environment in South Africa. The Wits Rural Facility in the Limpopo province (Lowveld) represents a rural wildlife environment. The Mierjie Le Roux Experimental Farm in the Gauteng province (Highveld) represents a peri-urban agricultural environment. Vultures (white-backed, lappet-faced, and hooded vultures) were the dominant scavengers in the Lowveld site and black-backed jackals were dominant in the Highveld site.

Vulture scavenging resulted in the rapid skeletonization of the pig carcasses between 5 and 98 minutes. The skeletal remains were scattered within a circular area of 157.9m^2/1705.5ft^2, with a radius of 7.09m/23.3ft. Black-backed jackal scavenging resulted in the skeletonization of the pig carcasses between 1 and 42 days. The skeletal remains were scattered linearly, in two general directions within a 90° arc, over a maximum distance of 73.7m/241.8ft. The scattering pattern of vultures was heavily influenced by the proximity of fences (particularly electrified fences). The pattern of black-backed jackal scattering was heavily influenced by the restriction of movement by fences, the location of their dens, and the presence of established animal trails. The link search method, in conjunction with the grid pattern method, increased the number of recovered remains. By combining the two methods, the recovery of remains scattered over a large area was improved.

This combined search method is more flexible than other methods and relies on the searcher to adjust their direction based on the identification of scattering cues. Although the scattering patterns highlighted in this study are focused on South African scavengers, scavenging occurs globally and the suggested recovery method could be successfully implemented internationally in forensic cases that have been scattered by scavenging animals.

Scavenging, Scattering Patterns, South Africa

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