



## Physical Anthropology Section – 2008

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### H32 Taphonomic Effects of Vulture Scavenging

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Upon completion of this presentation, attendees will understand how vultures accelerate decomposition rates, leave markings on remains, and disperse elements. They will also recognize how this information affects interpretations made by forensic anthropologists.

This presentation will impact the forensic community and humanity by highlighting important factors for forensic anthropologists to consider when interpreting taphonomic events and determining accurate postmortem intervals in scavenging cases.

One of the goals of forensic anthropologists is to understand and recognize the processes that occur at, during, and after death. Scavenging is one of these taphonomic processes that affects the decomposition and dispersal of an organism after death, or postmortem. Many published studies of scavenging focus on the effects of terrestrial scavengers, while relatively few concentrate on avian scavengers. In the New World, vultures range from Canada to the southern tip of South America. The most common vulture species are the Turkey Vulture (*Cathartes aura*) and the Black Vulture (*Coragyps atratus*). Because these birds inhabit wide ranges and their main dietary component is carrion, it is important for forensic anthropologists to examine changes in decomposition, the extent of bone alteration, and the degree of bone scatter/movement that result from vulture scavenging activity. Isolating and analyzing the specific effects vultures have on remains will help in the evaluation of scavenging cases.

In the summer of 2007, three pig carcasses (*Sus scrofa*) were placed outside in a large, grassy area in central Texas. The carcasses were exposed to vultures in succession, only one being offered at a time. Each was placed in the middle of a sixteen by sixteen foot fenced area to prevent access by terrestrial scavengers. A fourth pig carcass, used as a control for the rate of decomposition, was positioned in a large wire cage in the same area. The cage, wrapped in additional chicken wire, prevented vulture access but allowed for the same exposure to the elements and insects. Pigs were chosen as a substitute for humans due to their similarities in internal structures and progression of decomposition. To best represent adult human weights, each pig carcass utilized in the study weighed at least 100 pounds. Modification of the carcasses was recorded through the use of two motion-sensing digital cameras and daily on-site observations. Date and time stamp features on the cameras provided an accurate record and timeline of events.

Both the Turkey and Black Vultures waited approximately twenty-four hours after placement of the carcasses before beginning to scavenge, and did not feed at night. After their arrival, vultures alone completely skeletonized the exposed pig carcasses in less than twelve hours. In the midst of feeding, vultures were observed dragging, carrying, and dispersing elements of the carcasses around the original deposition site, leaving identifiable scratches and cuts on the bones. Turkey and Black vultures returned repeatedly to the remains, even after skeletonization, and continued to disturb and distribute elements. In at least one instance, elements were found outside of the six-foot tall enclosure. The movement of the carcass and markings on the remains are specific indicators of vulture scene modification and body alteration. While the carcasses exposed to vultures were skeletonized less than forty-eight hours after placement, the unexposed carcass took weeks to reach the same state.

The significantly accelerated rate of decomposition, the signature markings on the bones, and the degree of bone scatter and transportation discovered in this study are important factors for forensic anthropologists to consider when interpreting taphonomic events and determining an accurate postmortem interval at vulture modified scenes.

#### **Taphonomy, Scavenging, Vultures**