



## Physical Anthropology Section - 2012

### H78 **Taphonomic Signatures of Animal Scavenging: The Benefits of Using Remote Recording Equipment to Monitor Scavenging Activity**

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The goals of this presentation are: (1) to provide an assessment of regional variation in relation to animal scavenging behavior; (2) to provide an evaluation of the benefits of using remote recording equipment; and (3) to encourage a discussion using actual experimental data including surface deposit and burial scenarios.

This presentation will impact the forensic science community by providing a critical evaluation of taphonomic research and present the benefits of using remote recording equipment to enhance taphonomic analysis.

Historically anthropological research was based on direct observation of the research subjects. The practice of direct observation causes minute changes to the test sites and test subjects. Further, the continued presence of human activity at a site can discourage the natural scavenging and decomposition progression. Daily observation introduces human scent, and human presence affects an accurate picture of activity at the site. This tradition can be modified using remote recording equipment to monitor scavenger behavior. The taped video recordings and motion activated still images provide actual observations of scavenger behavior and feeding as it occurs. This research was conducted in ecological reserve in rural northern California and in a wooded area of suburban northern Virginia.

The California portion of the study was conducted in October 2009 and November through December of 2011. Common northern California scavengers include the black bear, western spotted skunk, gray fox, coyote, raccoon, as well as the domestic dog and cat. Digital game cameras were positioned at six sites within the Big Chico Creek Ecological Reserve (BCCER) to monitor scavenger activity on a single adult mule deer, and five 100 pound pig carcasses. Two pictures were taken each time the motion sensitive laser was triggered, with a delay of one minute between pictures. Sites were monitored daily and the camera was repositioned if the carcass had been moved out of the cameras' field of view. The carcasses were placed on the surface and to prevent immediate removal from the site location, each carcass was tied down to rebar stakes with lengths of wire wrapped around the forelimbs and hindlimbs. Documented scavengers include: black bear, gray fox, turkey vulture, red-tailed hawk, golden eagle, and common raven.

The Virginia portion of the study occurred in three phases, from May 1999 through July 1999, May 2000, and from November through December 2000. Common scavengers in this area of northern Virginia include coyotes, domestic dogs, turkey vultures, red foxes, opossum, and the common crow. Site scenarios included surface deposit and shallow burial of less than one foot involving child-sized pigs (approximately thirty pounds). The 1999 study used four high-resolution video cameras with an infrared light source. Cameras used on site focused on a site overview and/or on a close up of the remains. The cameras were set to record for various lengths of time. The researcher also monitored the sites physically. Documented scavengers include: turkey vultures, crows, red foxes, raccoons, striped skunks and opossums.

The use of remote recording equipment allowed researchers to document a clear division of diurnal or nocturnal predilection amongst the scavengers, as well as a hierarchy within the specific scavenger niches. This study also highlights the differences in large-body scavengers (black bear) versus small-bodied scavengers (raccoon and opossum). Although there are now several studies regarding the effect of scavengers on human remains, direct evidence of scavenging is still scant. Traditional anthropological techniques can be updated using modern technology, and regional studies should be conducted to create contextual information regarding scavenger behavior across the country.

#### **Taphonomy, Scavenging, Remote Recording**