



Physical Anthropology Section - 2014

H41 Comparing Feral Pig and Coyote Scavenging and Dispersal Patterns in the Greater Yosemite Ecosystem in California

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After attending this presentation, attendees will have increased knowledge of feral pig (*Sus scrofa*) and coyote (*Canis latrans*) scavenging and dispersal patterns when the two species feed concurrently.

This presentation will impact the forensic science community by documenting feral pig and coyote scavenging in a natural setting, which can be used to suggest best practices for law enforcement officers searching for human remains in areas where feral pigs and/or coyotes are common.

Individuals left to decompose in outdoor environments may be subjected to all manner of carnivore scavenging before they are recovered. This study documents scavenging patterns to determine the effect of multiple species on human-sized pig (*S. scrofa*) remains in an outdoor setting. It is hypothesized that the interactions of multiple species of scavengers modifying the same remains will impact the dispersal of skeletal elements differently than in studies documenting single scavenger taxa.

Research was conducted on private land in the Yosemite Valley, California, USA. Six study pigs of comparable mass to adult humans were left exposed for five weeks beginning May 22, 2012, and observed daily for the first two weeks. After five weeks, one of the study pigs had been removed and the remaining five had become mummified, although some disarticulation was observed. The bones that had been moved were mapped, collected, and examined for scavenger modification. Approximately one year after the completion of the study, the original site of deposition was revisited, and any bones from the five remaining mummified study pigs were mapped and collected.

Results of this study suggest that regular human interaction has an impact on carnivore behavior. During the first two weeks of the study when the remains were being directly observed, carnivore activity was non-existent. Two days after daily observations had ceased, coyotes and feral pigs began scavenging the remains. Coyotes tended to scavenge those study pigs closest to their game trails and the dry creek bed they used for travel, while feral pigs showed no preference for location, often moving from one set of remains to the next during the course of a feeding session.

Coyotes were responsible for removing the study pig remains from the site during the initial five weeks of the trial and disturbed an additional two sets of remains during the course of scavenging. Bones located outside of the immediate area of original deposition exhibited punctures and pits indicative of canid gnawing. Remains that were scavenged exclusively by feral pigs during the trial period were largely undisturbed apart from expansion of the openings in the neck and abdomen originally created by decomposition. Parallel scoring as a result of the incisors was also found on long bones associated with remains scavenged by feral pigs, in accordance with other researchers.

When the site was revisited approximately one year after the research began, small bones such as vertebral centra, ribs, and epiphyses as well as a few long bones and a mandible could still be found in the original placement area. These bones were the only visible evidence that remains were deposited in the area.

Analysis of dispersal patterns revealed that a majority of skeletal elements were found either adjacent to the original deposition site or along nearby game trails. This suggests following game trails is an effective technique for law enforcement attempting to locate remains. However, entire carcasses can be removed with minimal skeletal elements or soft tissue left behind, as was observed with the first study pig removed from the site. Coyotes were the main agents of bone destruction and dispersal, although feral pigs did modify the remains in telltale ways. The results of this research stress the importance of detailed searches for any remaining bones, which can be used to establish the original site of deposition even a year later in outdoor crime scenes with known or suspected scavenging of remains.

Taphonomy, Scavenging, Yosemite