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### E72 The Use of Forensic Osteology in Animal Cruelty Investigations

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**Learning Overview:** The goal of this presentation is to inform attendees of the value of forensic osteology analysis in animal cruelty investigations.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by illustrating that the use of forensic osteology in cases of animal cruelty may not only offer more specific information than radiographs, but also how this information could be used to file additional charges against the abuser.

Forensic anthropology is a common discipline utilized in the identification of human remains that are decomposed or otherwise unrecognizable. Unfortunately, it is not possible to glean all the same information from animal bones as is possible with a forensic anthropological analysis of human skeletal remains. For example, ancestry/breed and sex are often indeterminable. These factors, in addition to the technical definition of anthropology (the study of man), make the term forensic anthropology inappropriate in an application to animals. Therefore, the phrase forensic osteology is recommended when referring to the analysis of non-human skeletal remains. Applied to both humans and non-humans, forensic osteology is the study of skeletal remains to determine the causes and circumstances of death. In addition to developing in the same manner as human bones, animal bones also respond to trauma in generally the same manner. While there are structural and morphological differences (such as the shape of the cranium) that result in different effects, how bones react under force is generally predictable, making it possible to employ similar practices to the analysis of trauma in animals as are utilized for human victims.

The discipline of forensic osteology is not generally utilized in the investigation of animal cruelty crimes. The forensic examination of deceased animals is performed by veterinarians who typically rely on radiographs or Computed Tomography (CT) scans to visualize the skeleton. Although it is possible for injuries to not be visible through imaging, many veterinarians do not have the time, resources, equipment, or training to process deceased remains down to just skeletal elements. Similarly, veterinarians are trained to analyze skeletal trauma in regard to fixing it—not as it applies to a cause of death. This lapse in analysis occurs despite the results of a survey that was conducted of prosecutors and indicated that “bones” ranked higher than DNA when survey participants were asked what types of evidence from the scene influenced their decision(s) to prosecute animal cruelty crimes.

This presentation will discuss two specific animal cruelty cases for which the discipline of forensic osteology was utilized. Both victims to be discussed were dogs, with one death the result of multiple gunshot wounds and the other related to blunt force injuries. In both cases, the osteological analyses were able to offer additional and more specific information than the radiographs. In one case, this additional information resulted in an additional felony animal cruelty charge. Finally, there will be discussion of the osteological findings that have been found to be suggestive of dogfighting.

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#### Animals, Cruelty, Osteology