

University of Wyoming Institutional Animal Care and Use (IACUC) Guidelines related to Euthanasia of Wild Ungulates

Introduction

In the event that an animal becomes mortally wounded during capture operations, it will be immediately euthanized. Researchers will follow guidance provided by the 2013 AVMA Guidelines for the Euthanasia of Animals (American Veterinary Medical Association 2013) and the 2011 Guidelines of the American Society of Mammalogists for the Use of Wild Mammals in Research (Sikes et al. 2011) in developing euthanasia protocols specific to their particular capture projects and capable of meeting individual situations. Both guidelines suggest researchers should have a broad range of options for euthanasia including chemical, captive bolt, and gunshot euthanasia based on the judgment of the researcher regarding the most humane or practical form of euthanasia for mortally wounded animals. The euthanasia methods presented here offer field researchers options when faced with variable field and capture conditions – including extreme weather, difficult topography, and safety of the capture crew. Each capture crew will be briefed before each capture operation to ensure the proper use of euthanasia procedures are carried forth in the field.

Euthanasia Options

Chemical Euthanasia

If the animal is not already anesthetized, animals will be anesthetized with the drug combination and dosage deemed most appropriate for the species, age, and sex of animals following published dosages, Kreeger and Arnemo (2007), and in consultation with Dr. Todd Cornish, Department of Veterinary Sciences, University of Wyoming (Phone: 307-766-9967; Email: tcornish@uwyo.edu).

Upon anesthetic induction, animals will be administered euthanasia via hypodermic needle @ 50 mg/kg body weight of potassium chloride intravenously (jugular vein). Anesthesia and euthanasia administration will be under the direction of Dr. Todd Cornish, Department of Veterinary Sciences, University of Wyoming (Phone: 307-766-9967; Email: tcornish@uwyo.edu). Such direction will occur by means of prior training or via remote communication during the capture operation. Chemically-euthanized ungulates should be disposed by removal and deep burial if practical.

Kreeger, T. J., and J. M. Arnemo. 2007. Handbook of wildlife chemical immobilization. Fourth edition. Laramie, Wyoming, USA.

Considerations to incorporate deep burial are typically based on the concern that scavenging species (including protected birds of prey) will ingest residual chemical while scavenging on chemically euthanized carcasses. In addition, chemically euthanized ungulates will be unsafe for human consumption. However, it is noted that residual ketamine presents minimal lethality and KCL none. Consequently, when warranted and practical, each euthanized animal will be transported to a disposal site and buried. The site will be determined by wildlife biologists or

game wardens employed by the Wyoming Game and Fish Department. To maintain safety to humans and scavenging animals it is suggested that Wyoming Game and Fish Department biologists or game wardens participate actively in those instances when deep burial is deemed necessary and practical.

Captive bolt

The use of a captive bolt may include, but not be limited to, conditions in which wildlife jurisdiction limits the use of firearms, or chemical euthanasia and/or deep burial of chemically-euthanized animals (e.g., National Parks). In such cases, a shot from a captive bolt gun should be administered to the forehead of the mortally wounded animal.

Gunshot

Gunshot euthanasia offers a safe and instantaneous method of euthanasia, that overcomes difficulties presented by other methods. For example, chemical euthanasia may be impractical because wildlife jurisdiction does not allow for removal and/or deep burial of chemically-euthanized animals (e.g., National Parks). Chemical euthanasia and captive bolt may be impractical when thrashing animals present unsafe administration; when captured animals are no longer restrained, but are mortally wounded and fleeing the capture site; the remoteness of the terrain limits the ability of field personnel to remove an entire chemically-euthanized carcass; or the capture helicopter cannot safely remove chemically-euthanized animals due to unsafe conditions for removal. With gunshot euthanasia, a gunshot wound will be administered to the head of the mortally wounded animal. Only trained Wyoming Game and Fish Department personnel or animal handlers will administer euthanasia with a firearm.

****Please be aware that researchers are still required to state in their individual protocols the methods of euthanasia that will be used specific to their particular protocol and under what circumstances those methods will be used.****

For more information please see:

2013 American Veterinary Medical Association Guidelines on Euthanasia. Available at:

<https://www.avma.org/KB/Policies/Documents/euthanasia.pdf>

Sikes, R. S., W. L. Gannon, and the Animal Care and Use Committee of the American Society of Mammalogists. 2011. Guidelines of the American Society of Mammalogists for the use of wild mammals in research. *Journal of Mammalogy* 92:235–253.

[www.mammalsociety.org/uploads/Sikes et al 2011.pdf](http://www.mammalsociety.org/uploads/Sikes%20et%20al%202011.pdf)