

Alberta Wildlife Animal Care Committee Class Protocol #008

Wildlife Research Permits or Collection Licences

Adopted 11 February 2005

Class Activity: Ungulate Capture by Net-Gunning, Handling and Release

Specific Activity

Aerial net-gunning - no chemical restraint or anesthesia

Objectives

To capture live wild ungulates for research or management purposes

Primary Contact/Authority

Director of Wildlife

Applicable Personnel

- Project leads must be Wildlife Biologists or Wildlife Veterinarians with NR 9 level or equivalencies or must have appropriate experience.
- Project team must include persons trained in general wildlife capture and handling as per an approved wildlife capture/ immobilization course.
- Capture crews will include persons with experience in capturing ungulates.
- The program will provide for input from a veterinarian as a member of the capture crew or within direct contact during field operations. Preferably the veterinarian has experience with wildlife handling and capture.
- At least 2 members of the capture team should be trained in first aid and CPR.

Species

- Antelope
- Bighorn sheep
- Bison
- Caribou
- Elk

- Moose
- Mountain goat
- Mule deer
- White-tailed deer

Applicable Geographic Range

Provincial

Methods

- Generally, capture and restraint should not occur when ungulates are pregnant, breeding, or tending young.
- Animals will not be subjected to heat or cold stress by performing captures during inappropriate seasons or times of day.

Pre-capture

- Locate animals by aerial search with fixed-wing or rotary aircraft or by ground surveillance. As well, reconnaissance and pre-selection of potential capture sites is essential.
- Avoid areas with rough terrain, fences, active roads, cliffs, thin ice, or deep water. Seek areas with deep snow or soft, flat, and level terrain.

Herding

- Use rotary aircraft to herd animals to a capture area, minimizing herding time prior to pursuit. Move groups of animals in a controlled manner, at a slow speed, and with minimal disturbance, bearing in mind efficiency and safety for humans and wildlife.
- No time limits are placed on this activity; however, crews must be conscious of any indication that the animal is unduly stressed, and if so, back off appropriately. See 'Pursuit' section below for general guidelines.

Positioning (selective culling of an individual or small group)

- Generally, avoid animals that appear aged, crippled, or in poor body condition.
- Separate one or more chosen animals from the main group and press them towards a capture site.
- If animals show signs of undue stress, either back off or break off contact.

Pursuit (aerial pursuit with a rotary aircraft)

- Pursuit of animals at a full run should last **less than 1 minute** and **no more than 2 minutes** and should occur in relatively open areas away from topographic features that

may be dangerous for the ungulates (e.g., cliffs, ravines, fences, thin ice).

- If animals show signs of undue stress, either back off or break off contact.

**As a general guideline for the above activities, total chase time
(= Herding + Positioning + Pursuit) should not exceed 5 minutes.**

Capture

- Shoot the net over the animal in an open area.
- Multiple animals in one net should be avoided.
- If the net misses or the animal escapes, break off pursuit unless recapture is imminent within the next 30 seconds.
- Land aircraft and attend each netted animal immediately.
- In the event of major injury (e.g., broken leg) be prepared to quickly but humanely destroy the animal.
- Treatment of superficial wounds is not required, but treatment is recommended if wounds are more serious.

Handling

Total handling time should be less than 20 minutes, with a maximum time limit of 30 minutes unless complicating factors involving the safety and welfare of the animal arise.

- Minimize the number of people to those needed for safe and efficient handling of the animal. Handle the ungulates without sudden movements, minimizing auditory, visual, and touch stimuli throughout the procedure.
- Ensure safety and comfort of the animal at all times, and personal safety of all people involved.
- Take the animal down so that it is lying on the ground.
- Work from the dorsal side of the animal, staying above and behind the animal at all times, particularly as the net is removed. Quickly attach leg hobbles (use a quick-release system to secure the restraints), secure a blindfold over the animals eyes (all species), and protective covers over horn tips (mountain goat).
- Avoid restraining goats and bighorn sheep lambs and ewes by the horns because the skull may fracture readily.
- Do not sit on the head or chest and do not restrict normal respiratory airflow.

- Place the restrained animal in sternal recumbency, or as close to this position as possible, with the head pointing uphill or erect (for pronghorns).
- Work quickly to attach any devices, collect biological samples, and/or take measurements.
- Have a crew member stay with the restrained animal at all times.
- If at any time the animal shows evidence of undue stress (increased temperature, heart rate, respiratory rate, excessive struggle), prepare to immediately reduce the number of people in the immediate vicinity, remove all materials, clear anticipated escape route, and release the animal. Ensure the blindfold is removed!

Release

- On completion of the intended tasks, animals should be released with safety of the animal and people in mind.
- Minimize the number of people around the animal.
- Direct the animal towards an open, relatively flat area and away from people and equipment.
- Observe the animal from a distance for injury or abnormal behaviour.

Procedures

The above handling protocol is appropriate for taking basic body morphometrics, collecting faecal samples, taking hair samples, attaching ear tags, attaching radio collars or ear tag transmitters, drawing blood, taking tissue samples or biopsies, and tooth extraction under authority of a Fish and Wildlife Research Permit or Collection Licence. For all the noted procedures, previous training and experience is necessary.

Use of the following more invasive procedures should be limited to those that are absolutely necessary for the objectives of the study.

Attaching ear tags

- The size, shape, material, color, and placement should be considered so as to allow normal behaviour in the animal and to avoid potential problems.
- Applying ear tags during fly seasons or using unhygienic techniques may predispose the animal to localized infections.

Attaching radio collars

- Combined weight of transmitter and neck collar should not exceed 4-5% of the animal's body mass.
- Attention must be paid to attaching radio collars to young animals that are still growing or to species that have marked seasonal fluctuations in body condition (e.g., male adult caribou during the rut). If possible, modifications to collars should be made or capture team should consider collaring animal at a later time.
- All collars should be equipped with one or more break away devices that will release the collar at the end of the project.
- Collar width must be appropriate for age and species of animals to be captured.
- Generally, animals that are in poor condition should not be radio-collared. Similarly, recaptured animals that are negatively affected by radio collars should not be re-collared.

Drawing blood

- It is advised that no more than 10-20% of the animal's blood volume or 1.5-2.5% of lean body mass be collected during sampling.
- Blood should be drawn from cephalic or jugular veins using aseptic technique.
- Bleeding should stop before animal is released.
- Blood samples must be properly collected, handled, stored, and transported.

Taking tissue samples or biopsies

- Take only the minimum tissue necessary to satisfy research goals.
- Procedures should minimize stress and pain while obtaining adequate samples for study purposes.
- Use aseptic technique, prepare the area appropriately, and store the sample properly.

Tooth extraction

- Teeth should be removed using a dental elevator and tooth extractor.
- Extraction of vestigial teeth such as upper canines does not require anesthesia, but extraction of other teeth should only be done under local anesthesia.

If other more invasive procedures are proposed or if chemical restraint or anesthesia is required, specific details must be included in the research application.

Euthanasia

In the event of unforeseen irreversible injury or intolerable pain to a captured individual, euthanasia must be performed safely and humanely.

The preferred method for field euthanasia of ungulates is gunshot to the heart/lung area¹. If other methods are used, the researcher must provide details in the research permit application and receive approval of the proposed method.

Carcasses euthanized by chemical methods SHALL NOT be left in the field.

Evaluation

If severe injury (extensive deep, penetrating wounds, severe bleeding, or any bone fracture) or mortality is associated with capture and release projects, halt the operation and review all activities. However, even extensive superficial-deep wounds or eye injuries should be cause for review. If corrective factors cannot be identified, discontinue the operation.

Communications and Medical Emergencies:

- All members of the capture team should understand risks associated with the fieldwork.
- Communications should be made with the local hospital regarding potential hazards that could be associated with the capture.
- An emergency medical plan that includes evacuation to the nearest medical facility should be developed.

Acknowledgements and References

E. Merrill and C. Gates provided draft materials. E. Merrill, C. Gates, E. Bruns, and K. Smith reviewed this document. M. Hebblewhite also provided comments.

The following documents were also consulted

- 1) Canadian Council on Animal Care. 2003. Guidelines on: the care and use of wildlife.
- 2) Resources Inventory Branch for the Terrestrial Ecosystems Task Force. 1998. Live animal

¹ Based on the Canadian Council on Animal Care (CCAC) guidelines and the Report of the American Veterinary Medical Association on Euthanasia.

capture and handling guidelines for wild mammals, birds, amphibians & reptiles.

- 3) Resources Inventory Branch for the Terrestrial Ecosystems Task Force. 1998. Wildlife radio-telemetry. Standards for components of British Columbia's biodiversity No. 5.
- 4) Animal Restraint Training Manual.
- 5) 2000 Report of the AVMA (American Veterinary Medical Association) on Euthanasia. JAVMA Vol. 218, no. 5, March 1, 2001.

Last updated: Jan 2005