Alberta Wildlife Animal Care Committee Class Protocol #010

Wildlife Research Licences and Collection Permits

adopted March 22, 2011

Class Activity: Capture, Translocation and Release of Greater Sage-Grouse

Specific Activity

Hand and net capture, disease screening, transport over land, hard release

Objectives

- To capture live wild sage-grouse for translocation to bolster endangered populations in southern Alberta
- To re-establish a viable sage-grouse population and avoid provincial extirpation

Primary Contact / Authority

Director of Wildlife

Applicable Personnel

- **Project leads** must be wildlife biologists or wildlife veterinarians with Biol III 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 wild birds.
- The program will provide for input from a veterinarian as a member of the capture crew OR in 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

Greater sage-grouse (*Centrocercus urophasianus*)

Applicable Geographic Range

Southern Alberta within recent sage-grouse range, primarily Townships 1 through 6, ranges 1 through 7, West of the 4th Meridian

Methods

General considerations

- Capture and restraint should occur in early spring or perhaps fall but specifically NOT when female sage-grouse are tending young or during winter.
- Birds must not be subjected to heat or cold stress during capture, processing, transport, or release
- Birds for translocation to Alberta should be collected only in areas where West Nile virus activity is known to occur in summer months. Release of immunologically naïve greater sage-grouse into Alberta may increase the mortality risk to translocated birds.
- Only birds without visible anomalies can be considered for disease testing and possible translocation to Alberta. For sage-grouse originating from the United States, four disease tests are recommended (as indicated below). If more than 20 birds are collected, test at least 10% of the birds. If less than 20 birds are collected, test all the birds. In conjunction with veterinary supervision, broad-spectrum anthelminthic should be administered to all translocated birds.
- Minimize the number of people to those needed for safe and efficient handling of the bird. Handle sage-grouse without sudden movements, minimizing auditory, visual, and touch stimuli throughout the procedure.
- Document the entire procedure in accordance with the general standards recommended in Sutherland et al. (2010)

Birds

- Reproductively mature females or males
- Capture and move in spring during reproductive period (March & April)
- Capture on or around active leks.
- Capture at leks is most effective if done before or across sun-rise. Spotlights can be effective during nights when lek activity is high.

Capture

Effective capture of sage-grouse can be achieved through only a few methods: spotlight, net gun, walk-in traps

Spot-light and walk-in traps (modified from Wakkinen et al. 1992)

- Walk-in funnel traps should be set in place when birds generally are not at the lek (not at sunrise or sunset).
- All traps must be monitored continuously when active trapping is underway.
- Captured birds must be removed as soon as possible from the trap.
- Spot-lights are used in conjunction with a long-handled hoop net to capture one, or at most two, birds at a time.
- Captured birds should be approached slowly and quietly, manual restraint applied, the bird gently put into a burlap bag (if two birds, use separate bags), and left undisturbed for a few minutes to allow the bird to calm down prior to processing.

Rocket Nets

- Rocket net sites and deployment should be determined and in place when birds generally are not at the lek (not at sunrise or sunset).
- Shoot the net over birds in an open area.
- **Ensure that sufficient personnel are on site to minimize stress or struggling of netted birds.** A burlap bag thrown over netted birds will calm them until they can be processed.
- In the event of major injury (*e.g.,* broken wing) be prepared to quickly but humanely euthanize the bird (as below).
- Treatment of superficial wounds is not required, but treatment is recommended if wounds are more serious.
- Lek avoidance or abandonment has been documented after repeated rocket netting at one site. Rocket nets should be used at individual lek sites only once per breeding season.

Processing

General

- Total individual 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 bird arise.

- Ensure safety and comfort of the bird at all times
- Work quickly to attach any devices, collect biological samples, and/or take measurements.
- Have a crew member monitor captured birds regularly after capture and while in holding area.
- If at any time the bird shows evidence of undue stress (excessive struggle), try to minimize external stimuli, particularly auditory or potential heat or cold stress. If all else fails, consider releasing the bird at the capture site.
- Always work quietly, calmly, but quickly when handling live sage-grouse.
- Remove bird from burlap bag. Weigh each bird at the time of processing and sample collection.
- Conduct a physical exam on all birds even if they are not sampled or collected.
- Any bird with abnormalities consistent with possible infectious disease (unexplained poor body condition, evidence of chronic diarrhoea, sneezing/ respiratory dysfunction, or ocular, oral or nasal discharge,) should be collected and submitted to a local/state wildlife disease diagnostic lab for necropsy. Ideally birds should be submitted alive. If this is not possible collect blood and Avian Influenza samples from the birds prior to euthanasia.

Diagnostic tests to conduct

NPIP Blood tests

These blood tests are required as a part of the US National Poultry Improvement Program (NPIP) and are used to detect the presence of *Salmonella pullorum*, typhoid, or *Mycoplasma synoviae* infections. These diseases are important risks in domestic or captive birds. Potential for exposure to these agents in the wild is low and may have little effect on free ranging birds.

West Nile Virus

Use blood sample to assess for West Nile virus antibodies

Blood Sampling Procedures

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. For sage-grouse, collect no more than 2.0 ml.
- Blood should be drawn from a brachial vein using aseptic technique
- Blood samples must be properly collected, labeled, handled, stored, and transported.

Handling blood sample

- Collect up to 2.0 ml of blood in an Eppendorff flex tube ("bullet" tube)
- Place tube on its side for 4 hours at room temperature
- When clot begins to retract, (serum forming on top of the clotted blood) place the tube upright and refrigerate.
- Submit to the participating diagnostic lab as soon as possible.

Avian Influenza Tests

Cloacal swabs. Batch in groups of 5 birds and submit to participating diagnostic lab.

Faecal

Batch of 2-3 per tube or small whirl-pak® - submit to participating diagnostic laboratory for parasitology. Maintain at cool temperatures.

Sage-grouse should not be held more than 36 hours, and preferably less than 24 hours, prior to release. Samples must be delivered to the closest lab that can run not only the NPIP plate test but also the HI confirmation test in case of cross reactivity as well as the AI matrix screen.

Additional procedures

Radio Transmitters

- If radios are being affixed, use medium-sized (approx 30 g total weight) backpack harness or necklace harness style radios, as have been used successfully on sage-grouse

Leg Bands

- All birds should be banded with unique, size 14 split-ring leg bands

Feather Samples

- Gently pluck three or four small feathers from under the wing.
- Label and store under dry conditions.

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.

Approved Procedures

The above handling protocol is appropriate for collecting faecal samples, taking feather samples, attaching leg bands, attaching radio collars, drawing blood, taking tissue samples or biopsies, 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 more invasive procedures should be limited to those that are absolutely necessary for the objectives of the study and must be specifically described and approved conditional to issuing a valid Fish and Wildlife Research Permit or Collection Licence**

If other more invasive procedures are proposed or if chemical restraint or anaesthesia is required, specific details must be included in the research application. Chemical restraint is not recommended for sage-grouse.

Transport

- Sage-grouse should be transported in individual heavy-walled non-collapsible containers of sufficient size that the bird can stand comfortably but not large enough to allow excessive movement.
- Containers should be closed but provided with adequate airflow to ensure the bird has fresh air at all times and the container is not subject to excess heat or cold.
- Containers should have low, padded ceilings to prevent damage to the bird's head.

Release

- Choose a release site in the vicinity of an active lek.
- Minimize the number of people at the release site.
- If potential terrestrial or aerial predators are in the vicinity, delay the release and scare off or wait for the predator to leave the area.

- Carry the container well away from any obstructions. Direct the container/bird towards an open, uncluttered area and away from people, vehicles, and equipment.

- Employ hard release methods: set out containers, allow agitated birds to settle down, release as soon as possible.

- Observe the bird from a distance for injury or abnormal behaviour.

Follow-up Monitoring

Given the recent declines in local sage-grouse populations in Alberta, any translocation project must include active monitoring of radio-equipped birds to determine initial movement and survival of translocated birds as well as long-term success/population abundance. Habitat use by translocated birds is particularly critical to document as availability of suitable habitat, including areas of reduced human disturbance, may be primary limiting factors in southern Alberta. In the event of mortality the carcasses will be retrieved from the field for necropsy purposes and provided to an approved diagnostic lab.

Sutherland et al. (2010) provides general guidelines and standards for documenting and monitoring bird reintroduction projects.

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 sage-grouse is cervical dislocation, in accordance with standard approved methods as described in *AVMA Euthanasia Guidelines* (2007).

All euthanized birds should be submitted to an appropriate diagnostic facility for post mortem evaluation.

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.

- An emergency medical plan that includes evacuation of personnel to the nearest medical facility should be developed.

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Literature

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- Wakkinen, W.L., K.P. Reese, J.W. Connelly, and R.A. Fischer. 1992. An improved spotlighting technique for capturing sage grouse. Wildl. Soc. Bull. 20: 425-426.

The following documents also were consulted

- Canadian Council on Animal Care. 2003. Guidelines on: the care and use of wildlife. http://www.ccac.ca/Documents/Standards/Guidelines/Wildlife.pdf
- Resources Inventory Branch for the Terrestrial Ecosystems Task Force. 1998. Live animal capture and handling guidelines for wild mammals, birds, amphibians & reptiles.
- Animal Restraint Training Manual.

- 2007 AVMA (American Veterinary Medical Association) Guidelines on Euthanasia.

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