

Establishing efficacy of the Kania Trap

An evaluation of cranial dispatch using Kania 2000 spring traps

LIFE14 NAT/UK/000467



Introduction



- RSU NI trialling use of the Kania Trap for dispatch in partnership with North Down Red Squirrel and Pine Marten Group.
- The group hosted an MSc student from Queens University to assess the effectiveness of the technique in the field in grey squirrels.

Spring Trap Approval Order



(2) Paragraph (1) is subject in all cases to the following conditions—

(a) the spring trap must be used in accordance with the instructions (if any) provided by the manufacturer,

(b) the trap must be used in a manner that minimises the likelihood of its killing, taking or injuring non-target species, whilst not compromising the purpose for which it is being used, and

(c) the spring traps specified in column 1 of Schedule 1 and any equivalent spring traps are subject to the conditions specified in column 2 of Schedule 1.

Placement

- Kania Trap 2000 should be secured to the tree trunk where the Eastern Grey Squirrels have been observed at 5 to 7 feet above the ground to prevent access from Young Children and other Non-Targets.
- To achieve the best results the trap should be set close to either Bird Feeders or Nesting sites.
- Traps can also be secured under roof eaves, inside attics, or locations on houses where squirrels frequent.
- Placing traps on the ground is effective as well, but only if Non-Target species are not prevalent in the area, i.e.: House Cats, Dogs, Raccoons, Birds and other Non-Targets.

Spring Trap Approval Order



SCHEDULE 1

Kania Trap 2000 manufactured by or under the authority of Kania Industries Inc., 63 Centennial Road, British Columbia, V9R 6N6, Canada.

The trap shall be used only for the purpose of killing grey squirrels, mink, stoats, rats, mice and other small ground vermin (except for those species listed in Schedules 5 and 6 of the Wildlife (Northern Ireland) Order 1985).

The trap must be set within the housing provided by the manufacturer.

What is a clean kill?



- An Agreement on International Humane Trapping Standards was brokered in 1997 to resolve a trade embargo threatened by the EU in 1991 against countries that traded fur from wild animals caught by inhumane methods
- The AIHTS is binding on all EU member states, and Defra has indicated that the UK will remain committed to it after Brexit.
- Defra is implementing AIHTS by means of the least possible change (GWCT 2019).

AGREEMENT

on international humane trapping standards between the European Community,
Canada and the Russian Federation

THE EUROPEAN COMMUNITY,

THE GOVERNMENT OF CANADA,

and

THE GOVERNMENT OF THE RUSSIAN FEDERATION,

parties to this Agreement (the 'Parties'),

3. REQUIREMENTS FOR KILLING TRAPPING METHODS

3.1. Definition

'Killing trapping methods' means traps designed and set with the intention of killing a trapped animal of the target species.

3.2. Parameters

3.2.1. The time of occurrence of unconsciousness and insensibility produced by the killing technique must be determined and the maintenance of this state until death must be checked (i.e., until heart function has ceased irreversibly).

3.2.2. Unconsciousness and insensibility must be monitored by checking corneal and palpebral reflexes or any other scientifically proven suitable substitute parameter (!).

What is a clean kill?



3.3. Indicators and time limits

Time limit to loss of corneal and palpebral reflexes	Species
45 seconds	<i>Mustela erminea</i> ← Stroat
120 seconds	<i>Martes americana</i> ← American Marten <i>Martes zibellina</i> ← Sable <i>Martes martes</i> ← Pine Marten
300 seconds (*)	All other species set out in paragraph 4.1.

(*) The Committee will evaluate the time limit at the three-year review referred to in Article 9(b), where data warrant such action, to adapt the time limit requirement on a species-by-species basis, with a view to lowering the 300 second time limit to 180 seconds, and to define a reasonable time-frame for implementation.

4. LIST OF SPECIES REFERRED TO IN ARTICLE 3 OF THE AGREEMENT AND THE IMPLEMENT SCHEDULE

4.1. Species list

The Standards apply to the following species:

Common name:	Species
Coyote	<i>Canis latrans</i>
Wolf	<i>Canis lupus</i>
Beaver (North American)	<i>Castor canadensis</i>
Beaver (European)	<i>Castor fiber</i>
Bobcat	<i>Felix rufus</i>
Otter (North American)	<i>Lutra canadensis</i>
Otter (European)	<i>Lutra lutra</i>
Lynx (North American)	<i>Lynx canadensis</i>
Lynx (European)	<i>Lynx lynx</i>
Marten	<i>Martes americana</i>
Fisher	<i>Martes pennanti</i>
Sable	<i>Martes zibellina</i>
Pine Marten	<i>Martes martes</i>
Badger (European)	<i>Meles meles</i>
Ermine	<i>Mustela erminea</i>
Raccoon dog	<i>Nyctereutes procyonoides</i>
Muskkrat	<i>Ondatra zibethicus</i>
Raccoon	<i>Procyon lotor</i>
Badger (North American)	<i>Taxidea taxus</i>

Additional species will be included in the future as appropriate.

What is a clean kill?



3.3. Indicators and time limits

Time limit to loss of corneal reflex and palpebral reflex
45 seconds
120 seconds
300 seconds (*)

(*) The Committee warrants such action, to adapt the time limit requirement on a species-by-species basis, with a view to lowering the 300 second time limit to 180 seconds, and to define a reasonable time-frame for implementation.

3.4. Thresholds

A killing trapping method would meet the Standards if:

- (a) the number of specimens of the same target species from which the data are derived is at least 12; and
- (b) at least 80 % of these animals are unconscious and insensible within the time limit, and remain in this state until death.

4. LIST OF SPECIES REFERRED TO IN ARTICLE 3 OF THE AGREEMENT AND THE IMPLEMENT SCHEDULE

4.1. Species list

The Standards apply to the following species:

Common name:	Species
Raccoon dog	<i>Nyctereutes procyonoides</i>
Muskrat	<i>Ondatra zibethicus</i>
Raccoon	<i>Procyon lotor</i>
Badger (North American)	<i>Taxidea taxus</i>

Additional species will be included in the future as appropriate.

Methodology



- During a six week phase of control, field data was collected to assess the effectiveness of this new dispatch technique against a number of variables.
- Effectiveness was assessed on two levels; time taken for the squirrel to enter the trap and whether the trap produced a clean kill.
- International standards used by APHA require trap to cause irreversible unconsciousness in 80% of animals within 5 minutes of trigger, our parameters were set at irreversible consciousness within 1 minutes of trigger.
- Time required to enter trap was also tested and Kania traps with modified housing, particularly Perspex fronts were tested vs non modified Kania traps.

Equipment set up



Photo 4. The Kania 2000 attached to a standard squirrel trap, two springs hold the two traps close together to avoid escapes.

With the squirrel restrained at the back of the trap using the trap comb as above. Arm the spring trap and attach it securely using the springs or bungee cords to the cage trap. The door can then be locked open using a wooden dowel, and the trap comb released. The squirrel should likely run toward the spring trap and be dispatched cleanly. The spring trap housing can be modified to have a Perspex window which encourages the squirrel to run toward the light, but this is not entirely necessary.



Photo 5. The Kania 2000 with the back cut out of the housing and Perspex window inserted to encourage the squirrel to run toward the light.

Results

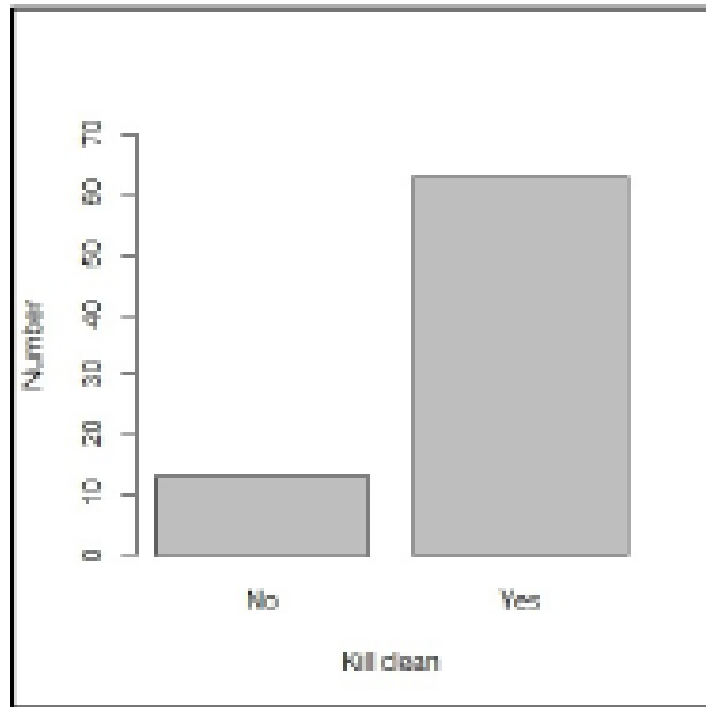


Figure 1: Number of unclean and clean kills throughout the duration of the cull.

- A total of 76 squirrels were euthanized throughout the 6 week cull, 83 % were classified as “clean” kills and 17% were classified as “unclean” kills.
- 80% of clean kills were noted in unmodified traps (n=30) and 85% in traps modified with a Perspex window (n=46).
- Animal agitation investigated as a factor in variance, significant difference between cleanliness of kill for agitated (n=38; 79%) and non-agitated animals (n=38; 87%)

Results

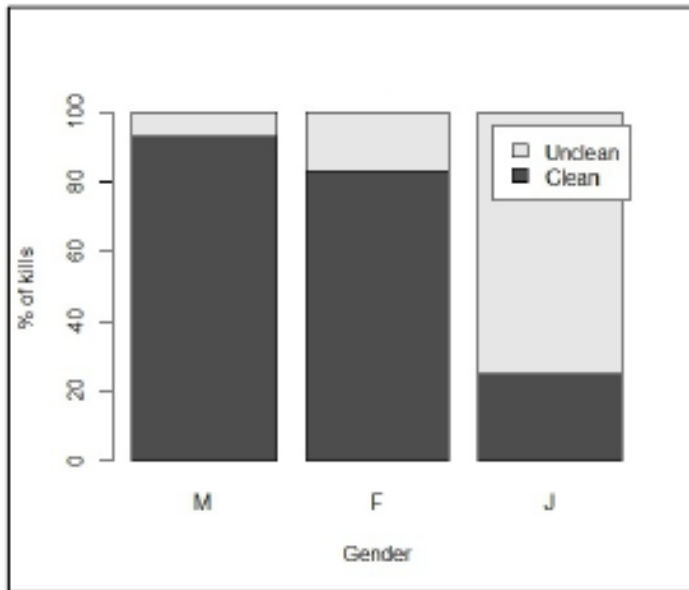


Figure 3: Trap efficiency for male, female and juvenile groups

Trap efficiency varied with gender; 93% in males (n=55), 83% in females (n=25) and 25% in juveniles (n=10)

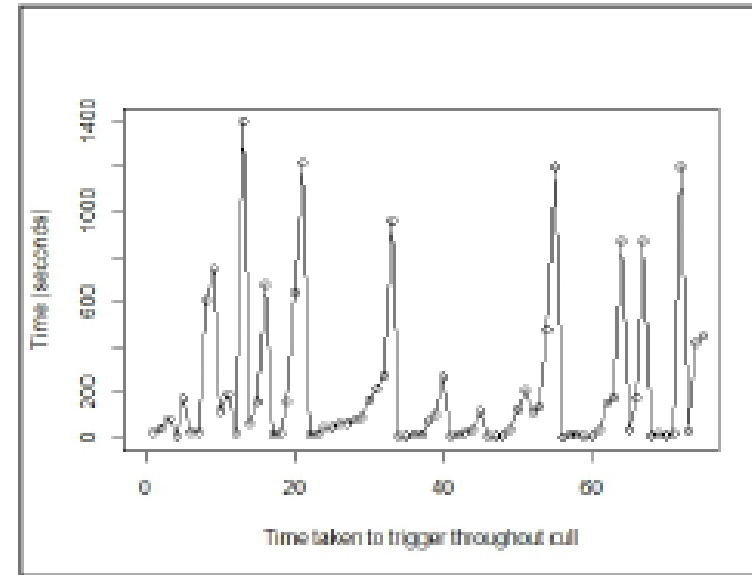


Figure 2: Times taken for squirrel to trigger spring trap throughout the duration of the cull

Time taken for the squirrel to enter the spring trap ranged from 1 second to 1402 seconds; the average time was 3 minutes 47 seconds.

(Trap combs or other techniques not used to encourage squirrel into trap)

Conclusion



- Trap efficacy in adults is high (93% males and 83% in females) but is low in juveniles (25%) as such caution is required post breeding windows.
- Kania trap usage makes dispatch of grey squirrels much more palatable for community groups.
- Modifications of the Kania Trap **housing** will increase efficacy. Modification of the trap itself is not allowed.

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