

Small Mammal Trapping (Live Trapping)

Prepared for:

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(Live Trapping)

This project involved the preproduction work for a video, which will be used to instruct field personnel on methods to be used in conducting a small mammal trapping study. This section illustrates only the live trap methods, using Longworth traps. Museum Special trapping is covered separately.

The following is an outline of scenes, components of scenes, photo notes, and suggested script notes. We have not attempted to provide a precise script as some of the methods are still in question, and because a qualified biologist will be able to describe this from his/her own knowledge in a way much less stilted than using a script. It is best to avoid reading the script notes but to use them as a guide.

We have more or less used the term “mouse” for all small mammals, but these could be voles, mice, shrews, or lemmings.

Because the preproduction work on this project was done in March, we were unable to obtain the same type of photos as will be obtainable in August, due to deep snow. Where snow made photos impossible, we have included notes as to what will be included. Some summer photos were contributed by different scientists, so these were used where appropriate.



Video

*Photo of masked shrew with title: **Small Mammal Survey (Live Trapping)**.*

Follow with a series of still photos of other small mammals including southern and northern red-backed voles, brown lemming, collared lemming, deer mouse and a couple of shrews, just to show people the variety of possibilities.

Script notes

Small mammals play a keystone role in northern ecosystems and are major prey species for foxes, martens, other carnivores, and for raptors. Fluctuations in the populations of small mammals are reflected by cyclic changes in the abundance of their predators.

This study is designed to help monitor changes in density indices for small mammals including mice, voles, lemmings, and, to some extent, shrews in several areas in the NWT, and in typical habitat types. It is hoped that studies of this type can assist in predicting furbearer abundance and to detect links between small mammal population fluctuations and the breeding success of other animals.

The goal of this study is to achieve 500 “trap nights” every year. A “trap night” is one trap set for one night. This can be achieved by running 50 traps for 10 nights, or 100 traps for 5 nights. The study will be run in August.

This study will likely last over 10 years, and is designed to enable us to collect as much information as possible on small mammals without removing animals from the population. The small mammals caught in the live traps will not be collected, but will be measured, marked, and released.

It is possible that the individual animals may become “trap happy” and will visit the traps multiple times, if they perceive the traps as a reliable food source. We will be able to identify animals recaptured in a season, as they will be marked, likely by clipping a pattern in their fur.

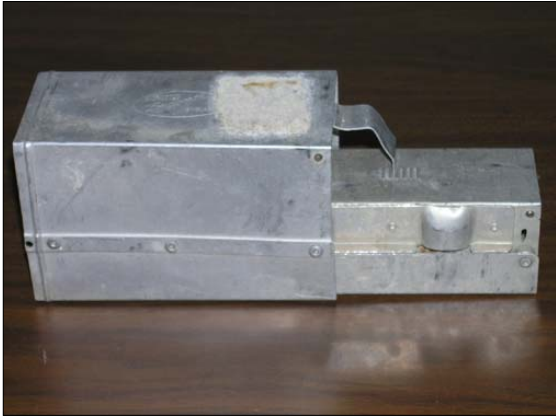
This video will help you learn how to handle and set Longworth live traps, how to prepare bait, set up and mark transect traplines, establish trap locations, set traps in the field, remove small mammals from the traps, and handle, mark, and release those animals.

This is a very detailed study, so you may need to watch the video several times to learn all the techniques involved.

This study works best with two field technicians, rather than one. It is difficult for one person to handle and measure the small mammals alone.

1) Trap preparation and operation (in lab):

- **Type of traps to be used: Longworth live traps.**



Video

Close-up of Longworth trap. (Not much can be seen when this trap is triggered, so it might be best to film a trap being assembled, rather than triggered.)

Script notes

The Longworth trap is a live trap that does not kill. It consists of two sections, a main section with a bedding chamber, and a tunnel that leads into the nest chamber.



For storage, the tunnel is rotated 90° and inserted into the bedding chamber. To set the trap up, pull the tunnel out, rotate it so the ridges are up, and insert it into the larger chamber.

The rear chamber is furnished with soft bedding, food, and a water source, and the tunnel leads into this space.

- **How to clean (brush off, flick off any peanut butter, wash in plain water using scrub brush if really dirty)**



Video

Cleaning traps with brush and water, attaching wires and flagging tape to traps.

Script notes

If traps are really dirty, clean them with a brush and clean water. Do not use soap or bleach. Allow to dry on a clean surface.

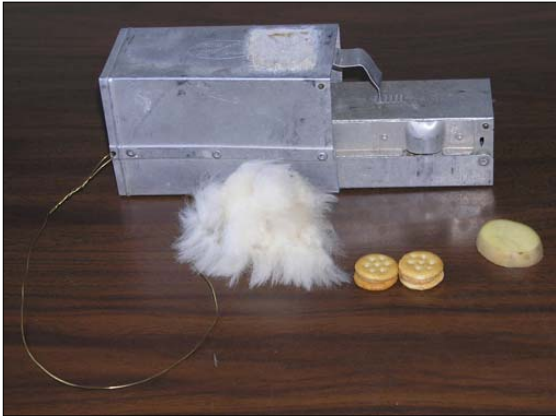


Attach about 40 cm of snare wire and flag each trap with flagging tape near where the wire is attached. This is to make it easier to find the trap if a predator manages to carry it off.

- **Bait and bedding**

Video

Peanut butter “sandwiches”, wool bedding and potato (or apple) for water.



Script notes

Bait is made up of small “sandwiches” of crackers and peanut butter. It’s easiest to use a Ritz product that is tiny crackers with peanut butter in between. A piece of potato or apple is also placed in the trap to provide water. Sheep’s wool works well for bedding and insulates even when wet.



- **Practice handling and setting the Longworth trap.**



Video

Longworth trap with bedding and food in place; trap set.

Script notes

Longworth trap is a live trap, which has an entrance tunnel plus space in back for bedding and bait. The Ritz mini-crackers with peanut butter filling make ideal bait as the crackers keep the peanut butter from getting on the bedding and are entirely edible.



To set the Longworth trap, lift the pointed bar and insert the tunnel into the larger chamber and push it in until the roof partition drops down and engages the flap on the tunnel. The pointed bar should then fit neatly into the ridges on the top of the tunnel portion of the trap.

Then, simply push the door in until you feel it click into place. Door should remain open when you remove your hand.

- **Preparing materials for measuring mammals: scale, small ruler (cut ends off parallel to last mark so you can get exact measurements).**

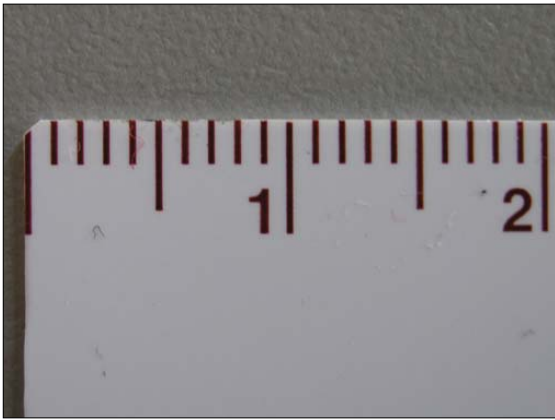
Video

Equipment laid out, including trap, small pesola scale, bags (Zip-loc and fabric), ruler, clipboard or notebook, pencil, small metal tag and flagging tape to identify trapline. Extra bait, extra water source (slice of potato or apple), extra dry bedding. Close-up of ruler with end cut off, or process of cutting end off ruler. Practice pacing.



Script notes

You'll need this equipment to be able to weigh and measure your catch. Metal tag and flagging tape identifies the transect line, bags are used to hold/handle the small mammals, ruler to take measurements. A clipboard or notebook makes it easier to record data on the data sheet. Use a pencil instead of a pen, as it is permanent.



Cut off the end of the ruler, so the metric scale is right at the end. This enables you to drape the tail of the mouse over it to get tail length, and to insert it in the ear to get ear length.



If you do not have a hip chain measuring device, you will need to pace off your transect lines. In a ***practice area***, like a ball field, measure off 50 meters and mark both ends. Then, walk this line three times, counting your steps. Average the number of paces it takes to go 50 meters, and the number of paces you take in 50 m will become your “ruler” for determining the location of the trap sets 50 m apart.

If you do have a hip chain device, make sure the counter is set to “0” and that there is plenty of thread in the unit before going into the field.

2) Locating traplines

- Selecting location for pairs of lines (near office, etc.)

Video

Pan across general bush habitat.



Script notes

Select the location for your traplines in a place with typical habitat for your area. This place needs to be accessible from your office by a short vehicle ride. The area should not be on a list for any kind of development during the next 10 years.

- **Marking start of the transect, measuring, establishing trap locations along a line.**
- **GPS use to identify start and finish of line.**



Video

Sample of aluminum tag.

Tying metal tag and flagging tape to tree (three flags).

Use of GPS to identify beginning of line.

Habitat photo.

Use of hip chain measuring device.



Script notes

Mark the start of the transect with a small aluminum tag fastened to a nail in a tree or follow locally recommended methods of marking the transect. This may vary in different areas of the NWT.



Place *three* lengths of flagging tape nearby, but not right at the tag. This flagging tape may need to be replaced each year, as it fades and may fall off.



Use GPS unit to get coordinates for the start and finish of the line. Record these on the data sheet.

Take a photo of the area.



Use hip chain measuring device or pacing to measure off 10 m. to the first trap set. Make sure the counter on the hip chain device is set to "0" before starting.

If you do not have a hip chain unit, then measure by pacing.

It is best if the trap site is not at the beginning of the line.

Mark the trap location with *two* flags of flagging tape.

3) Habitat descriptions:

- Use of habitat forms: kind of info,



Video

Filling out habitat forms.

Script notes

Standing in the line, complete the habitat description using forms provided by ENR.

4) Setting traps

- Locating traps in pairs along the lines

Video

Person holding trap.



Script notes

Traps will be set in pairs about 1 m apart, at 10 meter intervals along the transect (10 m between trap locations).

Set your first traps 10 m from the beginning of the line so they are not right at the start. There is less chance of disturbance that way.

- Establishing best location for each trap:

(This photography is being done in winter, so it's impossible to compare with summer habitat. The difficult thing is to illustrate how to locate each trap. See written suggestion below. In the video, this will be properly filmed.)

Example: Look for “runs” along ground and along the base of logs or on logs. Look for activity spots at the base of trees, gnawed bark, or any scats, pressed down grass, burrows or holes in vegetation.

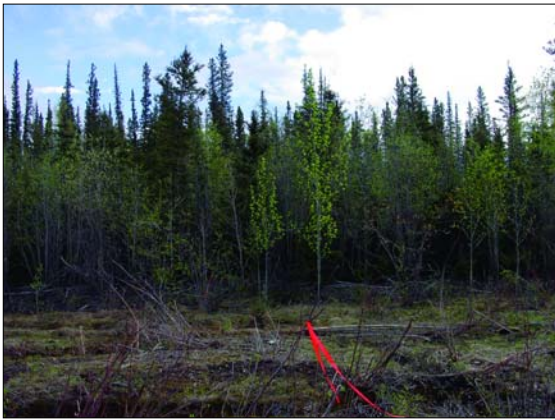
Examine the general area for latrines (piles of scats) or grass nests, flattened vegetation, etc.

Place traps with the open mouth right in the run or at right angles to the run with the mouth just at the edge. Sometimes mice are not caught with bait, but because they run into the trap.

Live traps work better if you are able to set them in a baited condition with the doors wired open for several days before beginning the study.

Video

Close-up video of general possible trap location.



Summer, video of forest floor showing possible trap locations

Script notes

In summer, look for places a small mammal would use. Look for runs along ground and along the base of logs or on logs. Also check for activity spots at the base of trees, gnawed bark, any scats or latrine areas, pressed down grass, burrows or holes in vegetation.

Make sure the entrance of the Longworth trap is right in the run. The tunnel can be angled to adapt to the.

- **Marking trap locations, use of flagging tape over trap location.**



Video

Tying flagging tape to branch above trap location.

Script notes

Mark each trap location by tying two flags of flagging tape to a branch over the trap. Try to keep these at least a meter away from the traps.

- **Securing traps with wires (wire to tree, or branch)**



Video

Securing trap with wire, flagging trap.

Script notes

Fasten each trap with wire to prevent predators from carrying it away. Each trap should be marked with flagging tape at the wire attachment. Tuck this tape under the trap when setting it. It is there to make the trap easier to find if a predator moves it.

- **Setting trap (same technique as practiced in lab)**

Video

Trap baited and set in the field.



Script notes

Follow the same procedures you practiced in the lab, being careful, as there is more vegetation to interfere with the working of the trap.

Try not to remove vegetation, but try to set trap where the vegetation will not touch any moving parts or interfere with the closing of the trap.

During the summer, if you are working in an area without deep shade, you will need to provide shade for the trap. You can heap moss over the trap, and then wet the moss down to keep the trap cool. Or, you can construct “shades” from shingles or lightweight boards. (Some shingles can be bent in the centre and placed over the trap like a tent, to shade it.)

5) Checking traps:

- When to check (early am, avoid rain if possible by going out earlier).
- What you will need to take with you in the field (Zip-loc bags, field labels, pencils, data sheet, mammal guide, cloth bag and plastic ruler).
- How to check: visual examination of area, follow wire.
- Use of data sheet and field labels.
- How to identify small mammals.
- How and where to record any indications of predators robbing traps, etc. (Shrews and weasels will take mice from traps; other mice will sometimes feed on them as well.)
- Record all “misfires”, (no bait left, trap sprung, trap gone, trap refuses to snap if touched with stick, trap with animal other than a small mammal)

Video

Equipment needed for live trapping, technician with all equipment needed inc. clipboard, hip chain device, bait, bag, ruler, plywood square, data sheets, Zip-loc bags, gloves (lightweight gardening variety), etc..



Script notes

Check carefully to see that you have all needed equipment before setting out. It's easiest to carry all gear in a small backpack. If you are not experienced at handling small mammals, it may help to take along a square of plywood to provide a firm surface on which to work.

Also, bring along a small first aid kit. Make sure your kit contains betadine iodine swabs or antiseptic for use if you get nipped.

Check your traps as early as possible in the morning as most small mammals are active in the darker hours. They are also very sensitive to heat, so survival rates will be higher if you check them early. 6 AM is ideal.

If the weather is very hot, close your traps during the day and reset them (replenishing the water source) about 7 PM, operating them only during the cooler hours. Or, check them twice a day.



If the weather is unbearably hot, abort the check for the following night and spring all traps, leaving them sprung overnight or until the heat wave passes, then resume trapping.

Walk into your transect until you see the two flags, and then scan for the traps. Try not to step on the trap, but check to see if the door is shut. If so, you may have been successful.

If door is still open, check to see that the bait and potato is still in place. Record any indications of “misfires” including predators robbing traps, bait removed, but trap still set, trap sprung, trap gone, or something other than a small mammal in the trap.

If the door is shut, there’s a good chance you have caught something. Take care when handling the trap, and ensure that the tunnel remains firmly in the bedding chamber until you are ready to take the animal out.

6) Removal of mammal from trap:

- **When you are using live traps the animal is not dead and will be marked and released.**
 - **Use of cloth bags to handle animals.**
 - **How to get animal out of trap using bag**



Video

Sequence of whole procedure, putting bag on trap, sealing off all escape routes, then removal of tunnel from trap using bag.

Video of removal of animal and bedding from trap, using bag.

Script notes

Use bag to remove animal from trap and handle it. Put the bag on the trap and seal off all escape routes. You have to get the “tunnel” out of the trap first, so put bag on the trap, seal off all escapes, locate the tunnel and pull it out and into bag.

Close off entrance to trap by tilting trap forward onto bag, or blocking entrance with your hand (outside the bag), keeping mouse and bedding in the trap.



An alternate method preferred by some researchers is to use a deep plastic bucket such as those containing bulk items like detergent, to simply dump the trap and mouse carefully into the bucket and remove it with a gloved hand.

Check to see if mouse is in tunnel (shake it through the bag or peek in). Work tunnel out of bag alongside the bedding chamber, keeping entrance to bedding chamber sealed.

Then seal the bag around the trap and shake animal and bedding into the bag.

7) Handling mammal for measurement, etc.

- **How to use cloth bag to grip animal by nape of neck, flip bag inside out, hold mammal over rest of bag, take measurements.**
- **Species identification of live-trapped mammals in the field. (Use of guides to identify, what to look for, what species to expect.)**
- **How to handle animals by different methods, using Zip-loc bag, or plastic bucket.**



Video

Sequence of locating animal in bag, catching it, and handling animal using bag to help hold it.

Sequence of measuring small mammal.

Marking small mammal.

Alternative methods of small mammal handling, using Zip-loc bag and using plastic bucket.

Script notes

Working from the outside of the bag, feel around and locate the animal. Working through the bag, grasp of the animal by the back of the neck with your left hand.

Flip the bag back over your hand, and work on the animal with it held firmly in your left hand. If you do this right, if the animal gets away, it has a good chance of falling into the bag, and may not be lost.

Measuring live small mammals requires two people. One simply cannot do it alone.





To handle the mouse, grip mouse by the nape of the neck and hold the tip of the tail with the other hand.

The second technician holds the ruler and may hold the tail or leg to measure the hind foot. Measure total length, length of tail, length of hind foot, length of ear from notch.



Identify species, sex if possible, and if female, note whether lactating or not, or if it seems to be pregnant.

Check for warble fly larvae. If they are present, they are usually readily visible as a lump in the inguinal area. If present, record on data sheet.

If you plan to mark the small mammal, then do the marking now.



There are a couple alternative methods that could be used.

You can use a clear Zip-loc bag. Use the largest one in the heaviest grade plastic you can get as you will need to manipulate the tunnel out of the bag while keeping the mouse in the bag. Mineral sample bags will also work, but you will have to be careful not to lose the mouse as you can't quickly seal the bag. If you use a clear bag, measure the mouse while it is in the bag.

You can use a bucket. Get the tall white kind that are used by many restaurants. Must be at least 18" deep or the more athletic mice can jump out. They may still run up your arm, so be prepared. You will need to use gloves, light leather gloves or ordinary gardening gloves.

Working down in the bucket, remove the tunnel from the trap and shake the mouse into the bucket. Capture it with your gloved hand. If you can catch the mouse and hide its head in a crease in the glove, where it cannot see out, the mouse will be easier to handle.

(Actual method of marking has not yet been worked out; may be marking with felt tip marker on head, or by clipping a bit of fur from the haunch.)

Video sequence of marking animal,
method to be determined.

8) Completing field forms

- One technician holds the animal and other fills out forms.

Video

Sequence of one person holding animal and other measuring and then filling out form. The “handler” keeps holding onto the animal and can’t fill out forms.



Script notes

It is best to organize yourselves so one person does all the handling and the other measures and records data.

9) Weighing the small mammal.

- Weigh Zip-loc bag empty, so you can subtract weight of bag. Make sure bag is dry as water can add weight.
- Weighing live-trapped mammals.

Video

Sequence of weighing empty Zip-loc bag, transfer of animal to Zip-loc bag for weighing, then weighing animal in bag with Pesola scale. If using plastic bucket, show transfer of animal from glove to small Zip-loc bag and weighing, then weighing empty bag.



Script notes

Prior to starting fieldwork, be sure to weigh the empty Zip-loc bag so you have a base weight. You will subtract this weight from the total weight of mouse and bag.

When done with all measurements/marking, put the plastic Zip-loc bag around mouse and shake it down into the Zip-loc bag. If you already have the mouse in a Zip-loc bag you can weigh it in this bag.



Seal bag, hang bag from Pesola scale, weigh mouse quickly, and release.



Don't forget to subtract the weight of the empty bag from the total weight to get the weight of the critter.

10) Recording data

Video

Writing on field form on clipboard.



Script notes

The second technician will record information on the field form, including species of mammal, immature or mature, sex, whether lactating, and any field measurements wanted.

If you catch a small mammal that is already marked, this is a recapture. Be sure to note this on your field form. Process the animal as usual, and add another mark. Sometimes individuals will be caught multiple times.

11) How to release mammal

- **Weigh in clear Zip-loc bag or by an alternate method.**
- **Put bag on ground and open seal, shake mouse out of bag or let it run out.**

Video

Animal in Zip-loc bag, bag conveyed to ground, and opened.



Script notes

Keep animal in plastic bag only a short time. When ready to release, just put bag on ground and open the seal.

Let it run out, or dump it gently onto the ground.

Check field form to see that you completed all sections, add any anecdotal information, and go on to the next set.

If you find any small mammal dead in a trap, proceed as for the snap trap project, make out a field label, identify the animal, and seal it in a Zip-loc bag along with the field label. Freeze it as soon as possible.

**12) Continue on to the next trap
and then to other transect**

Video

Team packing gear, leaving one set and continuing on to the next.

Script notes

Pack your gear, make sure you have everything, and continue on to the next trap station.