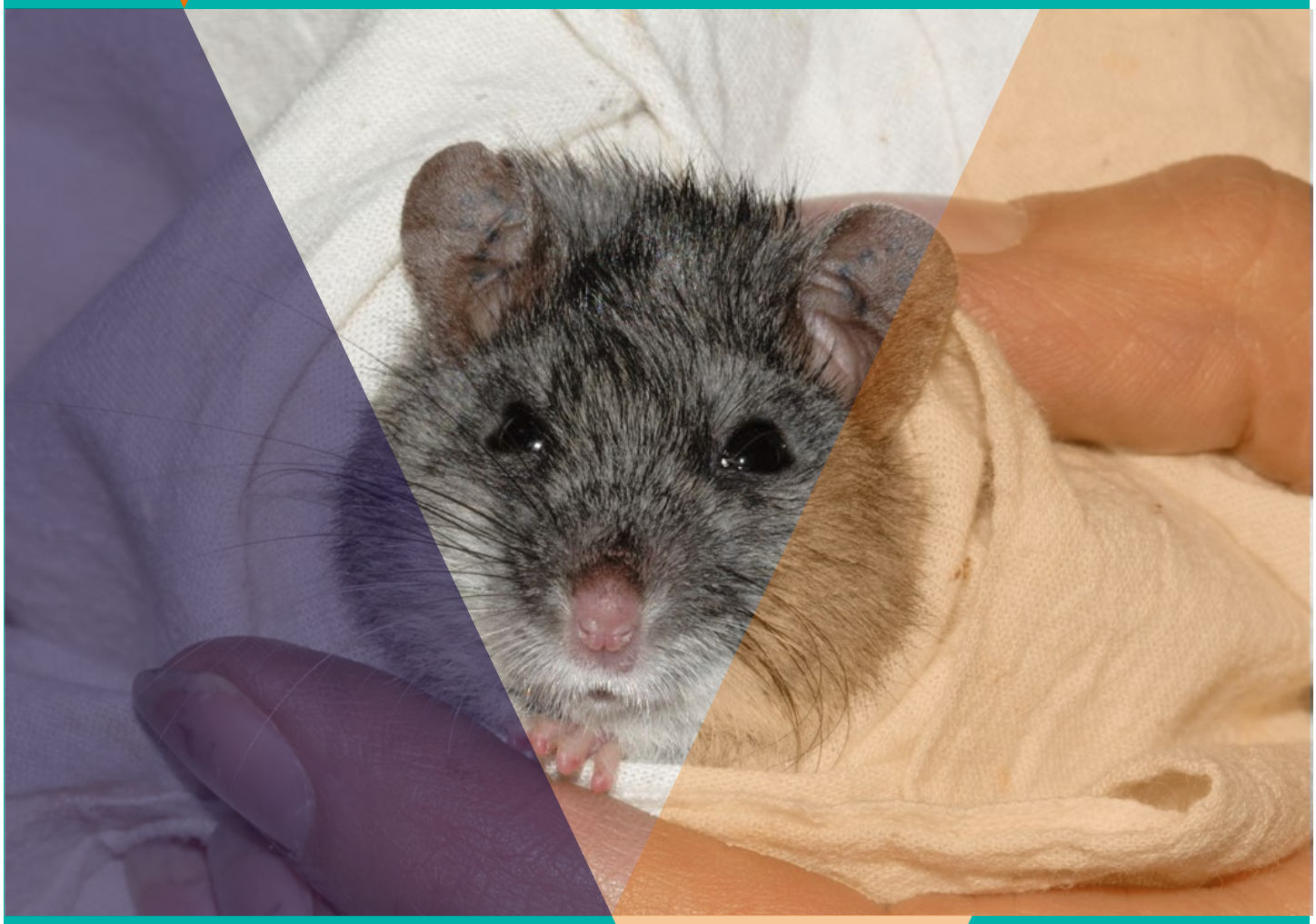
Forest Protection Survey Program

Survey Guideline - Small Mammal Elliott Trapping (V5.0)



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Author
Ryan Chick
Jenny Nelson, Arthur Rylah Institute for Environmental Research
Jamie Molloy. Project Manager Forest Protection Survey Program

V5.0 update: Jamie Molloy Program Manager, Forest Protection Survey Program

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Small Mammal Elliott Trapping

Context

Some of the threatened small mammals detected via camera trapping may not be identifiable to species level. This can be due to a paucity of suitable close-up high-quality images, or because some small species cannot be distinguished by camera trap images alone.

Elliott trapping is required to confirm the identity of some species. For example, Common Dunnarts and White-footed Dunnarts can only be distinguished from each other by physical examination in-hand.

Other threatened small terrestrial mammal species of medium to high priority which may be trapped include Antechinus species, Smoky Mouse, New Holland Mouse, Broad-toothed Rat and other Rattus species, and some glider species.

Objectives

To trap selected species which may have been detected via camera trapping surveys or that may be a priority survey target, to identify the individual to species level.

Survey effort

Surveyors are provided with the detection probabilities of the target species for each survey technique. The species with higher detection probabilities aid in determining the target species most likely to be detected by the survey technique and will thus inform survey parameters such as preferred habitat for survey, bait type, etc.

Surveyors are to plan the surveys to target those species with the highest detection probabilities for each site. Where there are multiple target species with higher detection probabilities on the same site, field surveyors will determine which of these species to target based on observations of suitable habitat within the site. Surveys are to be conducted within site boundaries or up to 50m outside site boundaries.

Grids of Elliott (type A) traps will be employed. Traps are to be spaced at 10 m intervals along lines 25 m apart for four consecutive nights.

If the survey is a follow-up to camera trapping (e.g. Dunnarts), then a single grid of 25 traps (5 lines of 5 traps each) will be used at the above spacing and duration, centred on the former location of the camera trap or animal sign that triggered the trapping survey. This will allow for 100 trap nights at each site.

A second trapping session at the former camera/animal sign site(s) is recommended if target species were undetected in the first trapping session (for a total of 200 trap nights). If repeat surveys are undertaken, then the relevant grid(s) shall remain closed for at least 3 nights between trapping sessions to allow non-target animals to recover.

If the survey is a stand-alone effort to detect small animals, then two grids of 25 traps (5 lines of 5 traps) each at the above spacing and duration, will be used (for 200 trap nights). The two trap grids must be set in the highest quality habitat for the target species in the site.

Surveyor must take their time checking and clearing each trap, ensuring each trap is thoroughly checked and then closed during the daytime. Traps should not be reopened until late in the afternoon before the next night's trapping session.

Surveyors are required to record a track log of the area covered from the start to the end within each site when setting up traps. The track log is to be converted to a GIS shapefile and submitted with the shapefile attributes as outlined in the shapefile template provided.

Surveyors are required to submit at least one, high-quality, colour, georeferenced photo of each fauna observation. The minimum number of photos required to detail the defining characteristics of the animal in order to aid and confirm identification must be taken and submitted (i.e. entire body, pelage colour, foot pad characteristics, etc.)

Surveyor requirements

A field survey team of at least two people.

Each team member to be experienced with Elliott trapping for small animals including extensive experience handling and identifying small mammals.

Familiarity, preferably via first-hand experience, with the small native and introduced mammal species likely or possibly present in the program area.

Be able to identify small mammals in-hand, e.g. be capable of distinguishing between Common Dunnarts and White-footed Dunnarts via the pads on their hind-feet.

Equipment list

- ☐ Elliott type A traps (Elliott Scientific Equipment) or same-size equivalent (e.g. Sherman trap)
- ☐ Bedding material (Dacron or Hollofil – do not use any material that absorbs water like cotton wool)
- ☐ Bait – peanut butter, rolled oats and golden syrup, rolled into a ball.
- ☐ Small rounded/safety scissors (for trimming animal fur)
- ☐ Small animal scales
- ☐ Cloth handling bags
- ☐ Gloves
- ☐ 2x GPS units and spare batteries
- ☐ Sighting compass
- ☐ Digital camera (with carry case, spare batteries, spare storage card) suitable for high quality macro-photography and, where possible, capable of including georeferencing data with each photo
- ☐ Flagging tape and marker pens
- ☐ Paper scat sampling bags
- ☐ Small plastic hair sampling bags
- ☐ 2x Small Mammal Trapping Datasheets on electronic-based pro-formas
- ☐ 2x Back-up hard copies of datasheets/forms on waterproof paper on clipboards

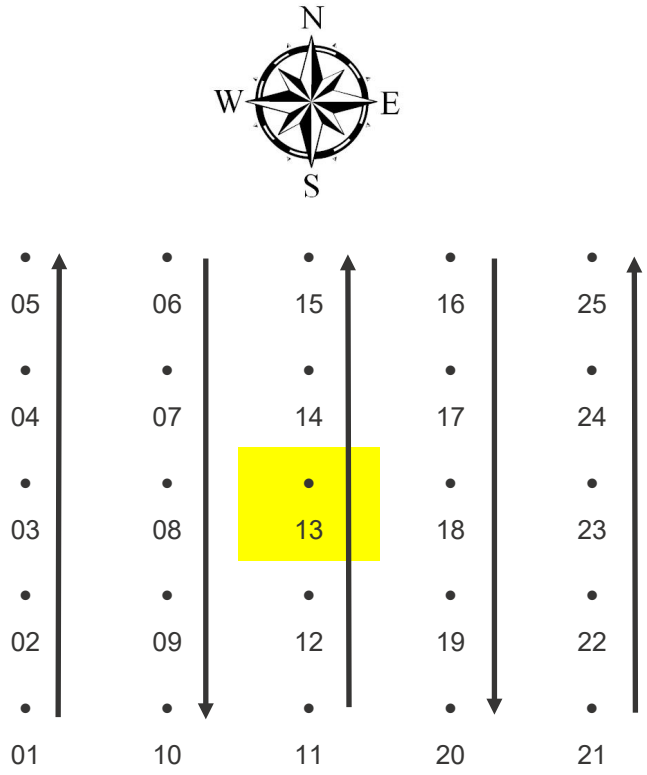
Site preparation

Trap grids may be installed at the former locations of camera trap stations where the target species was photographed in the camera trap survey, or where an animal sign was located during previous surveys.

If conducted as stand-alone surveys for small mammals, then the location of trapping grids may be pre-determined (e.g. via desktop assessment or using information provided from previous surveys). Selection of trap grid locations shall sample a variety of habitats appropriate to the target species, be it the Common Dunnart, White-footed Dunnart, Smoky Mouse, Broad-toothed Rat, or Swamp Antechinus. Other evidence of species presence shall be considered in any on-ground habitat assessment.

Trapping grids can be flagged either in advance or during the initial trap deployment. Trap lines are to be installed along magnetic bearings using a sighting compass.

Record the centre point location of the trapping grid e.g. location of trap 13. In particularly dense vegetation, consider recording each trap's georeferenced location to aid in finding the trap. Note that records of all individual trap locations are not required to be reported to the Contract manager, only the centre point. Mark each trap's location using sequentially numbered flagging tape (above the trap location but not so close as to disturb foraging animals). Trap numbers are to be numbered sequentially in a logical order commencing at a corner numbering along the line and then back down the next line and so on. See example below. Trap numbering example for Trap Grid 01 (TG01) and Trap number 13 = TG01.13



Conducting the survey

Trap deployment

Traps must be clean at the start of each survey session. When handling traps, limit unnatural scent on the traps by wearing suitable gloves or ensuring hands are clean and free of perfumes, insect sprays etc. Ensure traps are stable by placing them directly on the ground surface. The substrate can be scuffed flat using a booted foot to ensure the trap is flush with the ground. The trap should not move when an animal steps inside it.

Place the trap on level ground wherever possible. If installed on a slope, then face upslope so that the bait and bedding cannot move forward and interfere with the treadle mechanism.

False triggers by animals climbing on and around the trap can be minimised by having the back, top and/or sides of the trap in dense cover, beside a log, etc.

Where possible take advantage of potential runways and place the traps perpendicular to them, opening onto them.

Do not place traps in areas of high ant activity, or in areas where flooding may occur.

Always provide bedding, particularly in winter or when cool overnight temperatures are possible.

Ensure that sticks or leaves immediately adjacent to the entrance do not interfere with the trigger mechanism or door.

Ensure that the trap is operational and that a light weight on the treadle will activate the mechanism, by testing it when installed. Adjust if necessary, via bending the hook on the door release, or the body of the hook.

Place the bait in the back of the trap, ensuring it does not impede the trigger mechanism.

Checking / clearing traps

Check traps as soon as practicable after sunrise.

Have enough surveyors available to clear all the deployed traps within two hours.

Make sure that hands are clean and not scented by perfumes, insect sprays, etc when handling the traps and animals.

Wear suitable gloves when checking traps.

Be wary of snakes that may be investigating trapped animals and may be hidden behind the trap or otherwise in close proximity.

Exercise caution when opening the trap. Be wary of trapped snakes or insects.

Follow standard procedures for handling small animals using gloves and handling bags.

Identify all animals captured and trim a small patch of fur on their rump to allow identification of recaptured individuals. Recaptures are only to be reported as one observation not as multiple observations of the same individual.

Take a photo or series of photos of all captured target (or suspected target) species in-hand such that diagnostic features are evident. Photos are not required of non-target species captured in traps e.g. Mus and Rattus species.

Only captured target (or suspected target) species shall be sexed and weighed and diagnostic features recorded to support identifications. All captures must be reported as observations.

If necessary, to confirm an identification, scat samples (from the trap) and small hair samples may be taken.

Record the GPS location of traps of all captured species.

Release trapped animals immediately after processing at the point of capture.

For any animals suspected of being trapped three nights consecutively, consider closing the trap or traps that it has encountered to avoid further capture on the final night.

Implement all trapping permit conditions with regard to checking traps, handling animals with young, release of animals, trap deaths, non-natives, etc.

Best practice trapping procedure involve shutting down / closing all the traps after checking them. Keep traps closed during the day and reopen (and rebaited as necessary) in the late afternoon.

Devise a system to ensure all traps are checked and cleared of animals (e.g. cross off trap numbers in a notebook). If surveyors separate to check different parts of the grid, then ensure that they compare notes on which traps have been checked when they meet up or via radio/phone.

Clean traps that are soiled with urine or faeces before resetting or replace with new traps as necessary.

Remove baits affected by ants and replace with bait mixture on reopening the trap.

Do not carry any collected scats of any species (especially predator scats) in the same box as the traps.

If the target species is not trapped in the four-night session (despite the previous indications of its presence from the survey cameras) then the survey shall be repeated for a further four-night session.

Allow at least 3 nights between any repeat trapping sessions to allow non-target animals time to recover.

If no more trapping surveys are to be conducted at the site, then ensure all the flagging tape marking trap locations is removed.

Data reporting requirements

Data requirements are outlined throughout this guideline and in the datasheets/forms. Complete all required fields on the datasheet/form for each target observation.

In summary:

- Record a separate record in Survey Details for each separate Trap Grid
- Record a GPS track log only for setting up of trap grids on site and submit as a shapefile. One track log for the date of setting up the traps.
- Record and submit (georeferenced) photos.
- Record the centre point location of the trapping grid e.g. location of trap 13.
- Please enter the survey details (e.g. times and locations of the survey taking place) into the SurveyDetails page. Use the DataFieldsExplained page to help you enter the correct details.
- Ensure the site ID is entered correctly according to the survey package and in the format of xxx-xxx-xxxx with no blank spaces.
- Ensure all mandatory fields are completed and in the correct format, failure to do so will result in submitted data being returned for review.

- Record in the comments section in Survey Details if any traps are closed for any period of survey time and the reason for closure.
- A comprehensive list explaining the data entry fields and whether they are mandatory or optional can be found in the DataFieldsExplained.
- Ensure the CommonName field in ObsAttributes is entered correctly using the exact common names as spelt out in the TaxaIDLookup.
- When no target species is recorded in any Elliott traps, in the Observation Attributes sheet please record:
  - one observation entry of “Target taxa not found”.
  - for that entry of “Target taxa not found” record the TrapID of the last Trap in the grid (mandatory field)
  - for that entry of “Target taxa not found” record name of one observer involved in picking up the traps. (Mandatory field)
- **Please Note: Surveyors are expected to submit highest quality data. Please ensure you double check your data entry before submitting data. Submitting incorrect or incomplete information will result in a delay to reporting and may impact on the program outcomes.**