

Forest Protection Survey Program

Survey Guideline - Leadbeater Possum Camera Trapping (V3)



Acknowledgements

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1. Leadbeaters Possum Camera Trapping

1.1 Context

Leadbeater's Possum (LBP) is a species of high priority for survey in the FPSP. It is listed as Threatened under the Victorian FFG Act (1988) and Critically Endangered under the Commonwealth EPBC Act (1999).

LBP surveys are also conducted at selected coupes using thermal imaging and spotlighting. These surveys are planned for and conducted separately to the LBP camera trapping surveys.

1.2 Objectives

To detect the presence or infer the absence of LBP in, and immediately adjacent to, specified coupes in the FPSP.

To use 'heat-in-motion' sensing cameras with an infrared flash at baited camera trap stations to survey for the target species.

1.3 Survey Effort

A 'camera' is a single discrete camera unit.

A 'camera trap' is a camera set with a bait device to lure animals close in to be photographed.

A 'site' is a cluster of three camera traps. Individual cameras should be set 50–100 m apart, with no camera within the cluster set more than 200 m from any other camera.

Three sites are to be installed per coupe, a minimum of 200 m apart i.e. nine camera traps in total per coupe.

Camera sites are to be placed within coupe boundaries, or immediately adjacent (no further than 100 m outside the coupe boundary) in suitable habitat.

No camera traps are to be placed within already established LBP timber harvesting exclusion zones.

Camera traps are to be left in-situ for at least four weeks / 28 nights.

1.4 Staff requirements

A field survey team of not less than two teams of two working together at each coupe.

Each team will consist of:

- One qualified and trained arborist / tree climber / tree canopy specialist (hereafter 'arborist') experienced in LBP camera trapping, and;
- One qualified ecologist experienced in LBP camera trapping.

At least one team member must be capable of determining the possible or probable presence of LBP Zone 1A and 1B habitat (see Section 1.9).

1.5 Equipment

- | | |
|--|--|
| <input type="checkbox"/> Infra-red Reconyx cameras (or approved alternative).
The most commonly used models that provide high detection probabilities for LBPs (> 85%, Nelson et al. 2017) are HC500, HC600 or PC900. | <input type="checkbox"/> Attachment tools e.g. drill |
| <input type="checkbox"/> Bungee cord or similar to attach cameras to trees | <input type="checkbox"/> Small white board and marker / clipboard and paper |
| <input type="checkbox"/> Bait holders e.g. 2 vent cowls attached to a section of PVC pipe | <input type="checkbox"/> GPS unit |
| <input type="checkbox"/> Bait (creamed honey recommended) | <input type="checkbox"/> FPSP camera survey data sheet |
| <input type="checkbox"/> Flagging tape to mark camera and bait trees | <input type="checkbox"/> All relevant tree climbing equipment and associated PPE |
| <input type="checkbox"/> Attachment devices e.g. saddle clips, cable ties, screws | <input type="checkbox"/> Appropriate spare batteries for all equipment |
| | <input type="checkbox"/> Handheld UHF radio for communication between teams |

1.6 Site selection

Team members are to locate suitable LBP habitat for installing cameras. Desired habitat features include:

- predominance of smooth-barked eucalypts with exfoliating bark (providing shelter for insect prey and nesting material)
- structurally dense and interlocking canopy or secondary tree layer (to facilitate movement)
- *Acacia* spp. present in the understory or mid-storey (providing foraging resource and connectivity for movement)
- Zone 1A and 1B habitat protection triggers (see 1.9)

If suitable habitat is restricted to only part of the coupe, then fewer than three sites may be established subject to agreement with the FPSP Contract Officer.

Sites may be established in suitable habitat immediately adjacent to the coupe, but no further than 100 m outside the coupe boundary.

Note that the presence of hollow-bearing trees is not a significant predictor of LBP detection during camera trapping surveys, and some work has found decreasing detection probability of LBPs with increasing distance to known den trees. It is not advised to install camera traps on hollow-bearing trees with suspected LBP dens.

The two teams of Arborists and Ecologists are to be able to be in contact at all times via UHF radio. Teams installing different sites within coupes can thus ascertain if their chosen camera locations are sufficiently far apart. Use a GPS and radio UTM camera points between teams to ensure separation of sites from each other. No camera is to be closer than 200 m to a camera in another site, or within an existing LBP timber harvesting exclusion zone (refer to spatial layer LBPAG_BUFF_CHRFA, available via www.data.vic.gov.au).

Sites are to be set up as a cluster of three camera traps - usually set in a variably-shaped triangular pattern but can be in a straight or near-straight line targeting linear patches of habitat (e.g. along gullies). Use a GPS to ensure required separation of camera traps within each site i.e. three cameras set 50–100 m apart, and no camera within the cluster set more than 200 m from any other camera.

1.7 Camera installation

Once the site locations within a coupe have been identified, proceed to install the three camera traps at each site, in the spatial configuration stated above. Camera traps are to be set by the Arborist whenever climbing is required, under direction from the Ecologist.

Camera traps are to be installed within structurally well-connected vegetation strata, with no restrictions set on installation height above ground, other than climbing safety considerations. In some forest successional stages this may be very low (2-3 m in understory shrubs), while in others, the most suitable laterally-connected vegetation will be very high above ground (~50 m in Eucalypt canopy).

At each location selected for installation of a camera trap, consideration should be given to the immediate structural environment present in and around images captured by cameras. Baits are to be filled with creamed honey (depending on permit conditions) and securely closed prior to installation in the tree. Cameras and baits are to be set 2-3 m apart, either within the same tree or between adjacent trees. Look for bait placement opportunities with branching structures to either side, providing a substrate for animals coming into the bait that intersect with the detection bands of the camera's passive infra-red sensor (PIR; see examples for Reconyx below).

It is of paramount importance that the camera is aligned correctly, so that the bait station is precisely at the epicentre of the frame for a Reconyx camera (other camera brands will have different detection zones so alignment in these cases would be different). Animals should not be able to reach the bait without crossing the detection bands of the camera's PIR sensor.



Examples of LBP camera alignment with bait stations and the location of the Reconyx PIR sensor

Ensure the camera is coded with coupe, site and camera details (ie. save the first camera photo of small white-board or similar showing coupe number/name, site number and camera number within site).

Ensure the camera has correct date and time set.

Use advanced camera settings to set:

- high sensitivity level for the motion detector

- five pictures per trigger
- short interval between pictures e.g. RapidFire mode
- no delay between successive triggers
- night mode / programmed to turn off during day if the camera model has that capability (Reconyx PC 900s).

Camera traps that do not have capability to switch off during the day should be set facing a southerly direction where possible to avoid sun glare triggering cameras.

The Arborist should ensure correct camera placement by triggering the camera a few times. Remove the SD card (ensure camera is turned off when removing/installing cards) and pass this down to the Ecologist to confirm that the camera is correctly set. SD card should then be returned to the Arborist with instructions for resetting the camera position if required. Ensure that the camera has appropriately charged batteries (>90% charge) and is switched on (and the door firmly closed) prior to leaving the camera trap. Minimise any mobile vegetation, particularly foliage, within the frame of the images taken by the camera, to avoid false triggers. Any bark above the camera that might fall down and cause false triggers during the survey period should be removed.

The Ecologist should take a GPS waypoint at the base of the bait tree and use flagging tape to mark the camera and bait trees so they can be easily located up return to the site.

Upon retrieval of the cameras at the end of the survey session (four weeks) ensure that the camera is still operational by capturing and saving an image before retrieving the camera. Record on the data sheet if it is not working for some reason or if the batteries have gone flat.

1.8 Data and reporting requirements

All LBP detections require consideration of zoning requirements which can impact significantly on potential area available for timber harvesting. Leadbeater's Possum (LBP) detections are to be reported to the FPSP team as an interim result as soon as possible, when requested for specific coupes. This requirement is most likely when the proposed harvest date is within 1-2 months of the end of the field survey. The minimum information required to assist this step includes:

- CoupeID,
- CameraID,
- EastingBait,
- NorthingBait,
- CommonName=Leadbeater's Possum where site observed LBP, otherwise Target not found

Please ensure all required information is also recorded in theObsAttributes sheet in the DataEntry template for Camera survey.

Further data requirements are outlined in the LBP data sheet

FPSP data is to be reported in accordance with the procedures outlined in the SOP.

1.9 LBP Habitat

Where potential Zone 1A or 1B is identified, notify DELWP in data forms when reporting on camera installation. Note that Zone 1A and 1B habitat descriptions are only provided to assist with identifying potential camera site locations. Observers are not required to map the habitat, as mapping extent will be conducted by remote sensing analysis and possibly further targeted field survey.

Zone 1A Habitat

Where there are more than 10 live mature or senescent hollow-bearing trees per 3 ha in patches greater than 3 ha, and each tree is within 100 m of one of the other trees.

In Zone 1A habitat hollow-bearing trees are defined as live mature or senescent trees of Mountain Ash, Alpine Ash or Shining Gum containing hollows. During salvage harvesting after fire Zone 1A habitat is assessed as if all the trees were live.

Zone 1B Habitat

Where there are more than 12 hollow-bearing trees per 3 ha in patches greater than 10 ha and wattle density exceeds 5 m²/ ha.

In Zone 1B habitat hollow-bearing trees are dead, mature or senescent living trees of Mountain Ash, Alpine Ash or Shining Gum containing hollows. This prescription applies until either of the Zone 1B attributes (the presence of dead, mature or senescent living trees containing hollows, or wattle understorey) no longer exist.

For more detailed instructions on identifying LBP habitat in field surveys see pages 15 and 16 and Appendices 5 to 8 in DELWP (2015) Threatened Species Survey Standard: LBP. April 2015. Victorian Government.

https://www.forestsandreserves.vic.gov.au/_data/assets/pdf_file/0026/29276/Survey-standard-for-Leadbeaters-possum-revised-April-2015.pdf

