



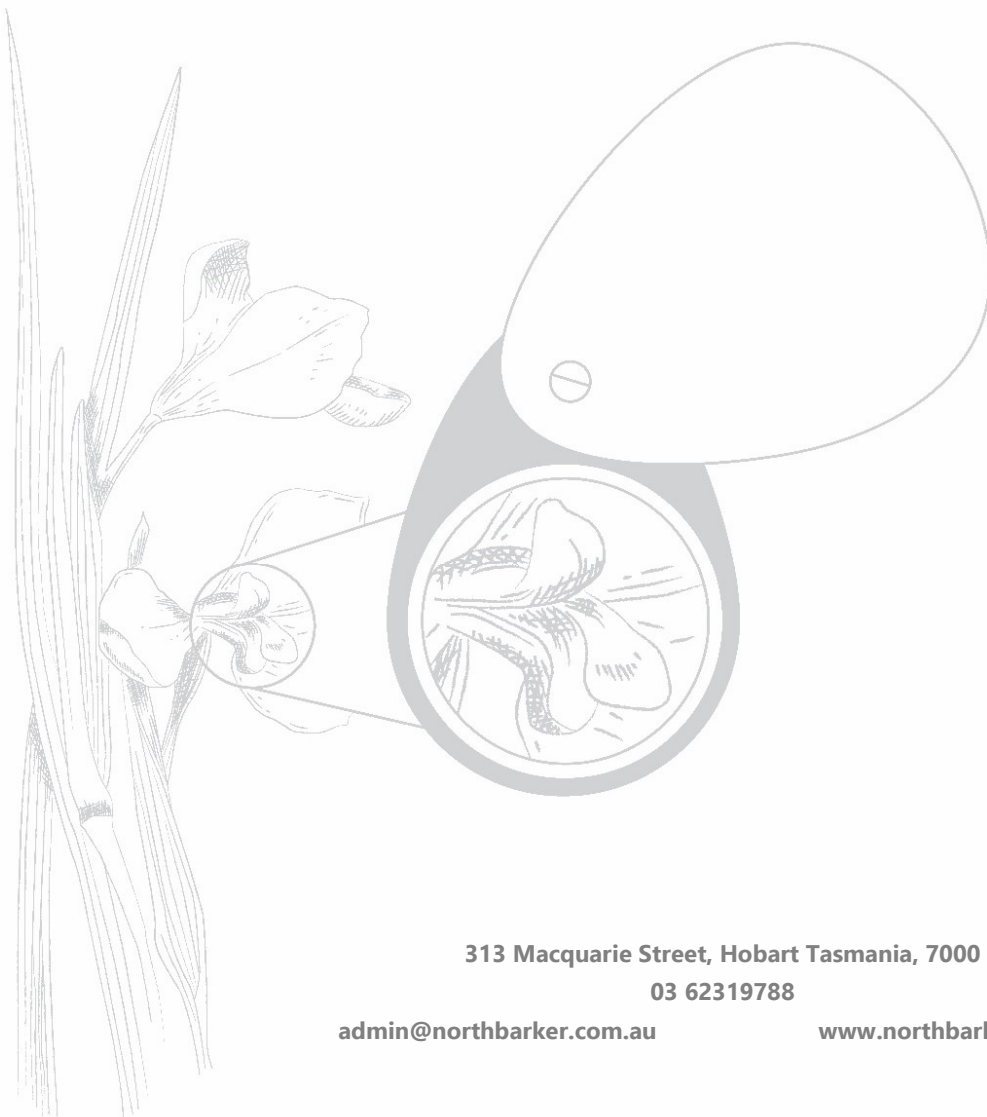
Pre-clearance Check and Unanticipated Den Discovery Protocol

Tasmanian devils, eastern and spotted-tail quolls

Northern Midlands Irrigation Scheme

26th July 2024

For Tasmanian Irrigation



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1. Background

The natural values assessment (NVA) undertaken for the Northern Midlands Irrigation Scheme (NMIS) did not record any potential dens within the design corridor for the Tasmanian devil, eastern quoll, or spotted-tail quoll, species variously listed under both the Tasmanian *Threatened Species Protection Act 1995* (TSPA) and the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). It was subsequently concluded to be a low likelihood that dens would be present within the construction corridor at the point of works. Nonetheless, as a conservative measure of precaution, the NVA recommended:

- A pre-clearance check and unanticipated den discovery protocol (for devils and quolls) must be implemented across the entire construction corridor.

The protocol will be undertaken as follows across the entire construction corridor, as well as any associated works areas that will require ground disturbance.

2. Pre-clearance Check and Unanticipated Den Discovery Protocol

Application of this protocol (sections A through D) may require approval to decommission dens under a permit to take products of wildlife, issued under the *Nature Conservation Act 2002* (NCA) by the Department of Natural Resources and Environment Tasmania.

The protocol will be overseen by a suitably qualified ecologists (the Ecologist) and Tasmanian Irrigation, with low-risk components able to be undertaken by the contractor. Some oversight and control of hold-points will be required by either regulators or Tasmanian Irrigation and in that case linked to contract requirements for the contractor.

A- Pre-clearance check for potential dens

- (i) Approximately two weeks prior to any vegetation clearance and/or ground-breaking works in a particular area, a walkover of the impact area (including a 50 m buffer) must be undertaken to systematically search for potential dens. Conditions of the pre-clearance search are as follows:
 - a. In areas of optimal and sub-optimal denning habitat, pre-clearance searches must be undertaken by the Ecologist.
 - b. In areas of highly modified and agricultural land (i.e. pasture and unsuitable denning habitat), pre-clearance searches have an option to be undertaken by the contractor under guidance and training by the Ecologist and will be audited by Tasmanian Irrigation for assurance and verification purposes.
- (ii) Any potential den sites¹ will be investigated and recorded by the Ecologist. Potential dens are mostly soil burrows/holes in the substrate with an appropriate entrance hole, but also include clusters of boulders with cavities, dense clumps of vegetation with visible animal use, rock outcrops, and dry hollow logs.

¹ As devils and quolls are known to opportunistically occupy burrows dug by other species (principally wombats), the protocol manages any burrow as potential habitat for a listed threatened species.

- (iii) The general quality of each potential den will be inspected in relation to factors such as soil warmth (sunlight), proneness to inundation, landscape position, *etc.* Factors including spider webs, delicate fungi, wear marks, hairs, scats, and footprints at potential den entrances will be noted as potential indicators of activity (or non-activity). The Ecologist will use this information to determine the likelihood of usage and the need for further assessment. The Ecologist may advise if the burrow is not being used (*i.e.* definitively inactive and vacant), in which case it can be decommissioned under a permit to destroy a product of wildlife under the NCA. (Note, if the potential den is not within the necessary clearance area, *i.e.* is within the survey buffer, it will not be decommissioned.)
- (iv) If no potential dens are found that require application of Section B, the application of the protocol can proceed to Section C.
- (v) Section B, the 'den monitoring assessment' will be applied to any potential den that the Ecologist concludes has evidence of use by a devil or quoll, or evidence of use by a species that cannot be determined, and any den that is considered to be highly suitable for devil or quoll occupation but does not have definitive evidence of being vacant at the time of assessment. An exclusion zone of a 50 m radius will be established around any potential den that warrants application of Section B and will remain in place until the requirements of Section B are completed. Note, if the potential den is not within the necessary clearance area, *i.e.* is within the survey buffer, it will simply be treated as an exclusion zone for the duration of works.
- (vi) Clearance or any other soil disturbance will not commence in the exclusion zone until that den or burrow is confirmed vacant and the exclusion zone can be lifted as per Section C and only under authorisation from Tasmanian Irrigation.

B- Den monitoring assessment

The den monitoring assessment involves the following:

- (i) At least two infra-red motion sensor cameras will be installed at each entrance of each burrow. Camera settings will be - sensitivity: high; capture method: video; capture length > 20 sec; capture delay interval: 0 seconds.
- (ii) Cameras will remain in place for at least 7 nights.
- (iii) After this time, footage will be inspected to identify captures², with the following possible outcomes (with input from the Ecologist if devils or quolls are captured).

² If this is done in the field, outcomes a, b, c or d may apply immediately. If memory cards are collected for desktop analysis, cards (and batteries if necessary) will be replaced, and camera(s) will remain in place for continued monitoring until action can be informed by the footage. In other words, monitoring will always continue up until the point of decommissioning, which will only be undertaken when an assessment of all footage up until that time has established the den is vacant at the time. A one-way gate may be used in any of the different outcomes to facilitate vacancy (only if the 7 nights of footage has sufficiently informed the action).

- a. If a pouch-laden devil or quoll, an imp (young devil) or a kitten (young quoll) are recorded using a den, or if an individual devil or quoll is recorded using a den for two or more nights and displaying natal characteristics, then the den will be treated as a likely maternal den.

For a likely maternal den, cameras and the 50 m exclusion zone must remain in place until:

- the den is no longer necessary for the rearing of young and it is confirmed that the mother and young have discontinued use of the den;
- or continued monitoring definitively establishes that the den is in fact not a maternal den (e.g. pouch-laden females may visit multiple dens before dropping their young in one location, and some females may be observed showing natal characteristics [such as lactating and scent marking] around dens in which they have not dropped their young).

Following either of these scenarios the den may be decommissioned while vacant and only under authorisation by Tasmanian Irrigation.

- b. If any devil or quoll is using a den regularly (*i.e.* almost every night) outcome 'a' will apply. If a den is found to be in regular use to this degree by a species other than a devil or quoll, a one-way gate will be installed, and monitoring will continue until a time when the den is definitively vacant and can be decommissioned.
- c. If a den is found to be in opportunistic use only by any species (*i.e.* not occupied for several consecutive nights; in which scenario there are usually several different animals and species frequenting the burrow), the footage from the night and morning immediately prior to the inspection will be used to determine occupancy at that time. If the burrow is conclusively vacant at the time of inspection, it will be decommissioned at that time. If an animal is within the burrow at that time, either a one-way gate will be installed to aid eviction, or the burrow will be revisited the following day and occupancy re-determined based on the footage from the previous night and morning. Monitoring of the burrow (with or without a gate) will continue until a time when it is conclusively vacant at the time of inspection and can be decommissioned.
- d. If a den is found to be inactive (no evidence of use), it can be decommissioned.

C- Reporting and regulation

- (i) If Section B does not apply, the contractor can advise Tasmanian Irrigation of the area searched and must seek approval for clearance (release of hold point) within the designated area.
- (ii) If Section B applies, the area approved for clearance may be conditional upon the maintenance of exclusion zones around active dens or dens still under assessment. Once the monitoring requirements of Section B are completed and dens have been decommissioned, the contractor can request exclusion zones are lifted and clearance granted for the designated area.

- (iii) Approval to clear in a designated area will only be valid for up to 8 weeks, after which time a new den check and assessment will be required.
- (iv) If the works area is divided into coupes, the process must be repeated until surveying of the entire footprint is complete.

D- Unanticipated discoveries

- (i) Notwithstanding Section C (i) and (ii), should a previously unidentified or unanticipated discovery of a potential den be found by the contractor (or other parties) during works, an assessment as per Section A (iii) and (v) must be undertaken, and, if necessary, the den monitoring assessment as per Section B adopted.