# Pre-clearance Check and Unanticipated Den Discovery Protocol

*Tasmanian devils, eastern and spotted-tail quolls*

Northern Midlands Irrigation Scheme

EPBC Number: 2022/09295

Tasmanian Irrigation

| Version | Date | Author | Reviewer | Comments |
|---|---|---|---|---|
| Version 1 | 30/06/2024 | North Barker | North Barker and TI | North Barker format. |
| Version 2 | 26/07/2024 | North Barker | North Barker and TI | North Barker format. Changed survey responsibilities (optimal and sub optimal habitat must be surveyed by ecologists). |
| Version 3 | 25/11/2025 | MF (TI) | CL (TI) | Plan was updated to make survey and exclusion zone requirements clearer and include flow charts. Also changed plan to TI format. |
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# Glossary

| Abbreviation | Definition |
|---|---|
| BT | Balance tank |
| CEF | Construction Environmental Feature (as identified on CEP and CET) |
| CEMP | Construction Environmental Management Plan |
| CEP | Construction Environmental Plan |
| CET | Construction Environmental Table |
| Contractor | Party responsible for constructing the NMIS Project and managing the Project's environmental obligations, including compliance with the Permit. |
| Department | Department of Climate Change, Energy, the Environment and Water (DCCEEW) |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* |
| Heavy vehicle / machinery | Any vehicle or machine that has a gross vehicle mass (GVM) or aggregate trailer mass (ATM) exceeding 4.5 tonnes. |
| km | kilometre |
| MNES | Matters of National Environmental Significance |
| NBES | North Barker Ecosystem Services |
| NMIS | Northern Midlands Irrigation Scheme |
| NRE | Department of Natural Resources and Environment Tasmania |
| PS | Pump Station |
| Project Environmental Consultant | Suitably qualified ecologist |
| The Permit | EPBC 2022/09295 |
| The Project | Northern Midlands Irrigation Scheme |
| The Protocol | Pre-clearance Check and Unanticipated Den Discovery Protocol |
| Threatened species | Species listed as threatened under the EPBC Act or Tasmanian *Threatened Species Act (1995)*. |
| TI | Tasmanian Irrigation Pty Ltd |

# 1. Introduction

## Project Background

The Northern Midlands Irrigation Scheme (the Project) involves the construction of a new irrigation scheme to supply 25,500 megalitres of water per annum from the Poatina Tailrace to 40 landowners located across the suburbs of Cressy, Campbell Town, Epping Forest, and Ross, in the Northern Midlands region of Tasmania.

The Project will allow for the irrigation of approximately 128,400 hectares and consists of the following key components:

- Approximately 155 km of large diameter pipeline
- An offtake dam, to be constructed adjacent to the Poatina Tailrace
- Two balance tanks (BT), the Poatina BT, with an adjacent overflow dam, and the Valleyfield BT.
- Access roads to both the Poatina BT and Valleyfield BT.
- Three pump stations (PS):
    - Valleyfield PS
    - Poatina PS
    - Barton PS

Further information on the Project, including the locations of project elements is provided in Section 3 of Construction Environmental Management Plan (CEMP).

## Purpose

Potential Tasmanian devil (*Sarcophilus harrisii*), eastern quoll (*Dasyurus viverrinus*) and spotted-tail quoll (*Dasyurus maculatus*) dens were not recorded during the Project's natural values assessment (NVA) and the likelihood of dens occurring in the construction corridor at the point of construction was considered low. However, as a precautionary measure, the NVA recommended developing a protocol for these species to help mitigate potential impacts during construction.

The Pre-clearance Check and Unanticipated Den Discovery Protocol (the protocol) was subsequently developed to meet Condition 4 of EPBC 2022/09295 (the Permit) which requires the implementation of an action management plan (i.e. the protocol) to mitigate harm to the Tasmanian devil, eastern quoll and spotted-tail quoll within the Project area[1]. TI's summary of commitment to Condition 4 of the Permit is outlined in Table 1. Relevant mitigation measures, monitoring requirements and corrective actions are outlined in Table 2 and Table 3.

The protocol is also linked to the Project's State permit to take wildlife products. The Department of Natural Resources and Environment Tasmania (NRE Tas) issued TI with a permit to take (DA23145) on 14 August 2025. This permit authorises TI to take products of wildlife (dens and burrows) in the construction corridor by way of decommissioning or blocking entrances. As per Schedule 1 of permit DA23145, each den or burrow must be managed in accordance with this protocol and NRE notified of dens that have been decommissioned in accordance with the permit.

[1] Note: potential impacts to the Tasmanian devil, eastern quoll and spotted-tail quoll from roadkill are addressed in the Project's Roadkill Mitigation Strategy (Appendix H of the CEMP).

Table 1 Conditions of approval reference table (EPBC 2002/09295) relevant to the Pre-clearance Check and Unanticipated Den Discovery Protocol (from Table 2.1, CEMP)

| No. | Condition | Condition requirement | Section of CEMP | Summary of commitment |
|---|---|---|---|---|
| 4 | ACTION MANAGEMENT PLANS – Pre-clearance Check and Unanticipated Den Discovery Protocol | To mitigate harm to the Tasmanian Devil, Eastern Quoll and Spotted-tail Quoll within the project area, the approval holder must commence implementing the Pre-clearance Check and Unanticipated Den Discovery Protocol no later than the commencement of the Action and continue to implement the Pre-clearance Check and Unanticipated Den Discovery Protocol for any construction works until completion of the Action. | Table 10.1<br>Appendix B – Construction Environmental Plans and Construction Environmental Tables<br>Appendix E – Pre-clearance Check and Unanticipated Den Discovery Protocol | **Preclearance check** - Prior to the commencement of the action, the contractor must implement the pre-clearance check and unanticipated den discovery protocol. This includes the walkover of the impact area (including a 50 m buffer) and systematically searching for potential dens as detailed in Section A of the protocol.<br>**Den monitoring assessment** -If dens are located during the preclearance surveys, they must be subject to a den monitoring assessment as detailed in Section B of the protocol.<br>**Den decommissioning** – Inactive dens in the construction corridor will be decommissioned by the Project Environmental Consultant in accordance with Section D of the protocol. |

Table 2 Summary of mitigation and avoidance measures relevant to the Pre-clearance Check and Unanticipated Den Discovery Protocol (from Table 10.1 of the CEMP)

| MNES | Mitigation / avoidance measure | Description | Responsibility | Timing |
|---|---|---|---|---|
| Dasyurids (Tasmanian devil/ eastern quoll/ spotted-tail quoll) | Pre-clearance check and unanticipated den discovery protocol | **Preclearance check** - Prior to the commencement of the action, in accordance with Appendix E - Pre-clearance check and unanticipated den discovery protocol. This includes the walkover of the impact area (including a 50 m buffer) and systematically searching for potential dens as detailed in the protocol. | Project Environmental Consultant - suitably qualified ecologist (Hazell Bros subconsultant) | Two weeks prior to any vegetation clearance |
| | | **Den monitoring assessment** - If dens are located during the preclearance surveys, they must be subject to a den monitoring assessment as detailed in Section B of the protocol. | Project Environmental Consultant - suitably qualified ecologist (Hazell Bros subconsultant) | As required |
| | | **Den decommissioning** - The Project Environmental Consultant requires authorisation from TI to decommission a den. | Project Environmental Consultant - suitably qualified ecologist (Hazell Bros subconsultant) | As required |
| | | **Authorisation to clear** - the contractor must complete a pre-clearance checklist prior to commencing clearing and construction that summarises den survey findings and required exclusion zones (where applicable). TI will review the checklist prior to works commencing to ensure surveys have been completed and exclusion zones are in place (where required). | Contractor<br>TI | As required |

Table 3 CEMP performance targets, monitoring and corrective actions relevant to the Pre-clearance Check and Unanticipated Den Discovery Protocol (from Table 10.2 of the CEMP)

| MNES | Performance target/trigger value | Monitoring | Corrective action |
|---|---|---|---|
| Dasyurids (Tasmanian devil/ eastern quoll/ spotted-tail quoll) | All inactive dens within the impact area will be decommissioned prior to commencement of clearance and construction. | Preclearance surveys and den decommissioning will be undertaken in accordance with the pre-clearance check and unanticipated discovery protocol. The Project Environmental Consultant (Hazell Bros subconsultant) will monitor any vegetation clearance and/or groundbreaking work in the areas shown as optimal habitat on the CEPs to ensure that the protocol has been implemented.<br>The contractor must complete a pre-clearance checklist prior to clearing to ensure compliance with the protocol and confirm relevant hold points have been released by TI.<br>In cases where a Den Monitoring Assessment is required the Project Environmental Consultant (Hazell Bros subconsultant) will inspect exclusion zones during the monitoring assessment to ensure they are maintained and in good repair.<br>TI will maintain an ArcGIS file which records the cumulative total area of optimal denning habitat cleared. This will be reviewed when the contractor seeks authorisation from TI to clear optimal denning habitat.<br>Reinstatement of disturbed habitat will be undertaken in accordance with the rehabilitation and reinstatement plan (Appendix M – Rehabilitation and reinstatement plan). | A stop works notice must be issued if a non-compliance occurs and an internal investigation undertaken.<br>Authorisation to commence works must be sought from TI. |

## Document History

This protocol was originally drafted by North Barker Ecosystem Services (NBES) on 30 June 2024 (version 1) and submitted to the Department as part of the Project's CEMP. Version 1 of the protocol allowed the Contractor to undertake all pre-clearance surveys under guidance from suitably qualified ecologists. Dens that contained protected matters could also be decommissioned by suitably qualified ecologists without seeking approval from TI.

The protocol was updated 26 July 2024 (version 2) and required suitably qualified ecologists to undertake surveys in sub optimal and optimal areas (instead of the Contractor) and TI approval to decommission dens identified as a maternal devil or quoll den.

Version 2 of the protocol was approved by the Department 23 August 2024 as part of the CEMP.

TI updated the protocol (version 3) in response to multiple non-conformances during construction. Updated in TI format, the revised protocol provides additional background information, including applicable survey guidelines and state permit requirements, and clearer instructions on the following:

1) Timing of pre-clearance surveys (i.e. when the Protocol applies).
2) Survey methodology.
3) Exclusion zones (including how to manage active dens in close proximity to the construction corridor).
4) Den commissioning.
5) TI approval requirements.

The protocol has also been updated to include references to survey and pre-clearance checklists and the Project's den point layer in GIS, which were introduced in late 2024 to help manage and communicate survey information and ensure all requirements (including exclusion zones) are met prior to commencing construction. In May 2025, the pre-clearance checklist was updated to include a TI hold point. The Contractor is now required to submit checklists to TI for review and clearing and construction can only commence once TI has reviewed the form and conditions outlined in the review form have been met (where applicable).

## Survey Guidelines

Survey guidelines that have been used to develop this protocol include the following:

- Section 3.3.6 of the Commonwealth Survey Guidelines for Australia's Threatened Mammals (2011). Guidelines for detecting mammals listed as threatened under the *Environment Protection and Biodiversity Conservation Act* 1999.
- NRE Survey Guidelines and Management Advice for Development Proposals that may Impact the Tasmanian Devil (*Sarcophilus harrissii*)(2023). A supplement to the Guidelines for Natural Values Surveys - Terrestrial Development Proposals.

# 2. Pre-clearance Check and Unanticipated Den Discovery Protocol

The protocol is overseen by the Contractor's Project Environmental Consultant and Tasmanian Irrigation, with low-risk components such as unsuitable denning habitat surveys undertaken by the Contractor.

## A. Pre-clearance Surveys

### Timing

Approximately two weeks prior to machinery entering an area, the construction corridor and a 50 m buffer must be surveyed for potential dens.

Potential dens are mostly soil burrows/holes in the substrate with an appropriate entrance hole, but can also include clusters of boulders with cavities, dense clumps of vegetation with visible animal use, rock outcrops, and dry hollow logs.

In areas of optimal and sub-optimal denning habitat, pre-clearance surveys must be undertaken by a suitably qualified ecologist (the Ecologist).

In areas of highly modified and agricultural land (i.e. pasture and unsuitable denning habitat), pre-clearance searches can be undertaken by the Contractor under guidance and training by the Project Environmental Consultant and will be audited by Tasmanian Irrigation for assurance and verification purposes.

### Pre-clearance Survey Requirements

*Contractor (Unsuitable Denning Habitat Surveys)*

If a potential den is discovered during a pre-clearance survey, the following steps must be undertaken:

1) Add a den point to the NMIS Construction Planning Map and select "Requires assessment". Update the following fields in the den point:
    a) Line and chainage (e.g. E1_500)
    b) Confirm if den is within construction corridor (use a rover GPS if required)
    c) Confirm 50m exclusion zone is in place (Yes/No)

    Leave the remaining den point fields blank (the Ecologist is responsible for updating the remaining fields when assessing the potential den).
2) Establish a 50m exclusion zone around the potential den.
3) Complete the NMIS Den Survey Checklist for the section that has been surveyed.
4) Notify the Contractor Environmental Representative(s) to confirm the location of the potential den and that the 50m exclusion zone has been established around the den.
5) Contractor Environmental Representative(s) to arrange for the potential den to be surveyed by the Ecologist.

If the Contractor does not identify any potential dens during unsuitable denning habitat surveys, the person undertaking the survey must update the NMIS Den Survey Checklist for the section they have surveyed accordingly.

*Ecologist (Assessing Dens Identified by the Contractor)*

If the contractor has identified dens during pre-clearance surveys, the Ecologist must undertake the following:

1) Review all dens identified by the Contractor and confirm activity by assessing factors such as soil warmth (sunlight), proneness to inundation, landscape position, presence/absence of spider webs, delicate fungi, wear marks, hairs, scats, and footprints around potential den entrances.
2) If a potential den is not considered a den, update the den point to "not considered a den by the ecologist".
3) If a potential den is deemed inactive and outside the construction corridor, update den point to say "inactive" and complete the remaining applicable fields (e.g. den ID and den type). Confirm monitoring is not required and update the NMIS Den Survey Checklist with the survey findings. If the den extends into the construction corridor and is at risk of impact, refer to the flow chart in Figure 3.
4) If a potential den is deemed active or potentially active or it is located inside the construction corridor, the Ecologist must undertake the following:
    a) Commence monitoring in accordance with Section B – Den Monitoring Assessment.
    b) Update the monitoring start date in the den point.
    c) Ensure a 50m exclusion zone is established around the potential den to prevent entry during monitoring.
    d) Update the NMIS Den Survey Checklist with the latest survey findings.

*Ecologist (Unsuitable Denning Habitat and Suboptimal and Optimal Habitat Surveys)*

The Ecologist is responsible for undertaking surveys in suboptimal or optimal habitat. They may also survey unsuitable denning habitat on behalf of the Contractor.

If the Ecologist identifies potential dens during pre-clearance surveys, they must complete the following:

1) Add each den point to the NMIS Construction Planning Map and update each field including den ID, location, den type, and whether required exclusion zones are in place.
2) If a potential den is deemed inactive and outside the construction corridor, update the den point to say "inactive". Confirm monitoring is not required and update the NMIS Den Survey Checklist with the survey findings. If the den extends into the construction corridor and is at risk of impact, refer to the flow chart in Figure 3.
3) If a potential den is deemed active or potentially active or located inside the construction corridor, the Ecologist must undertake the following:
    a) Commence monitoring in accordance with Section B – Den Monitoring Assessment.
    b) Update the monitoring start date in the den point

c) Ensure a 50m exclusion zone is established around the potential den to prevent entry during monitoring.

d) Update the NMIS Den Survey Checklist with the latest survey findings.

## B. Den Monitoring Assessment

If the Ecologist identifies a potential den that requires den monitoring (i.e. active or potentially active den, or a potential den inside the construction corridor), the Ecologist must undertake den monitoring as follows:

1) Install at least two infra-red motion sensor cameras at each den/burrow entrance. Camera settings will be - sensitivity: high; capture method: video; capture length > 20 sec; capture delay interval: 0 seconds.

2) Keep cameras in place for at least 7 nights.

3) Inspect footage to determine activity.

After reviewing camera footage, the Ecologist must follow the relevant steps outlined in Figure Figure 1 (threatened species), Figure 2 (non-threatened species) or Figure 3 (inactive dens). Management measures in the flow charts have been developed to consider the following:

- Location of the den (i.e. inside or outside the construction corridor).
- Risk of impact to dens outside the construction corridor.
- Den activity (i.e. inactive or active).
- Conservation status of species using the den (i.e. threatened vs non-threatened).
- Whether individuals using the den are displaying maternal characteristics (i.e. breeding or non-breeding).

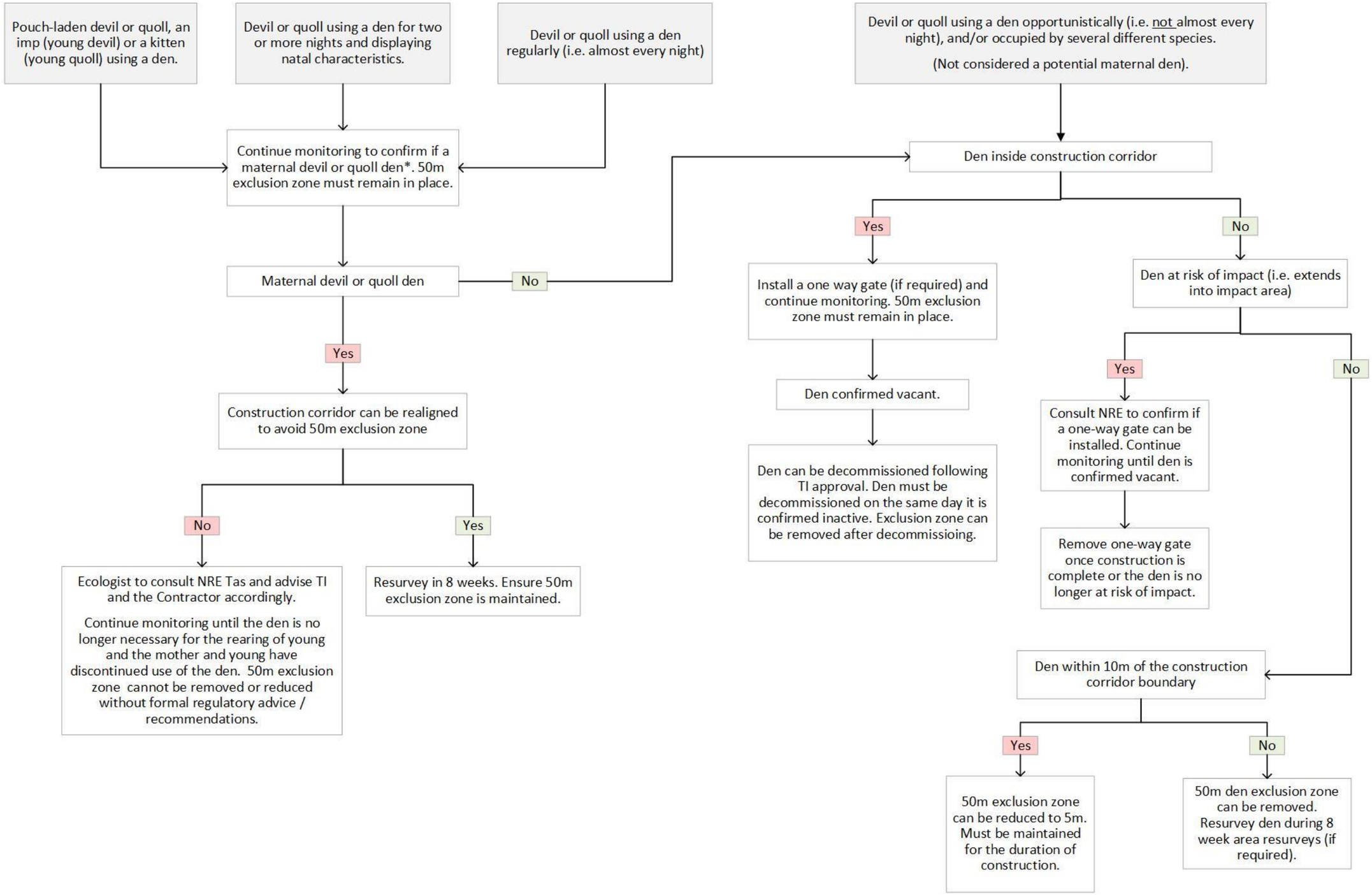
Monitoring details must be captured in a NMIS Den Survey checklist and GIS (den point layer) and updated throughout monitoring to ensure den activity status remains up to date.

The pre-clearance checklist must reference the relevant NMIS Den Survey checklist as evidence the required surveys have been completed.

## C. Den Decommissioning

Dens must be decommissioned in accordance with the relevant flow charts in Figures Figure 1 to 3. Approval to decommission dens is dependent on whether (1) the den is in the construction corridor (as shown in the permit to take), (2) it is a maternal den, and/or (3) it belongs to a threatened species.

Only dens within the construction corridor can be decommissioned following approval from TI. If an active den is outside the construction corridor and at risk of impact (i.e. den extends into the impact area), the Ecologist will need to provide advice as per the relevant flow chart. If an inactive den is outside the construction corridor and at potential risk of impact, a one-way gate must be installed to prevent occupancy during construction. The one-way gate must be removed upon completion of construction or when the den is no longer at risk of impact.




**Note: 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*

Figure 1 Den Management for threatened species or dens with no recorded activity after 7 nights monitoring

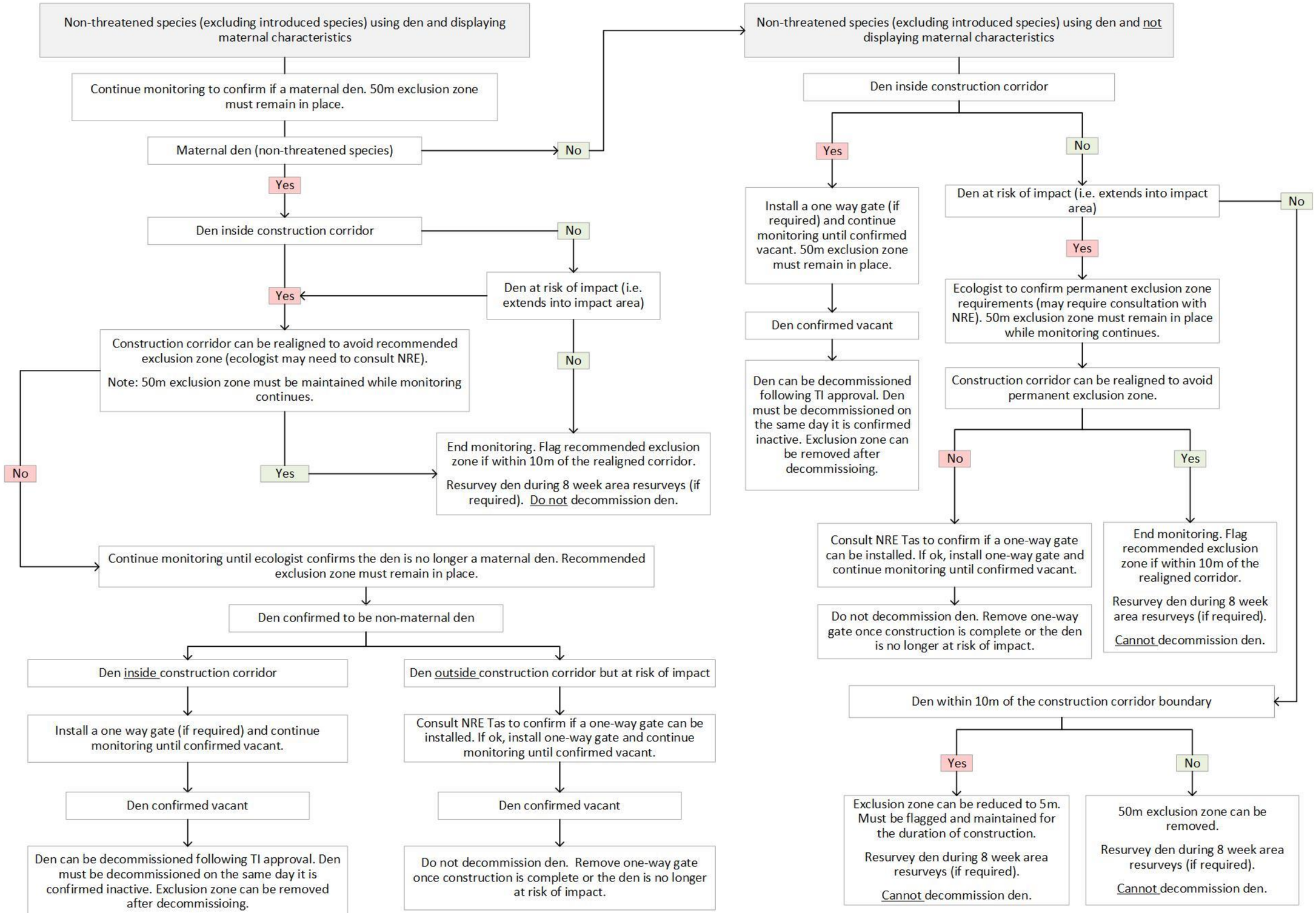



Figure 2 Den Management for non-threatened species dens

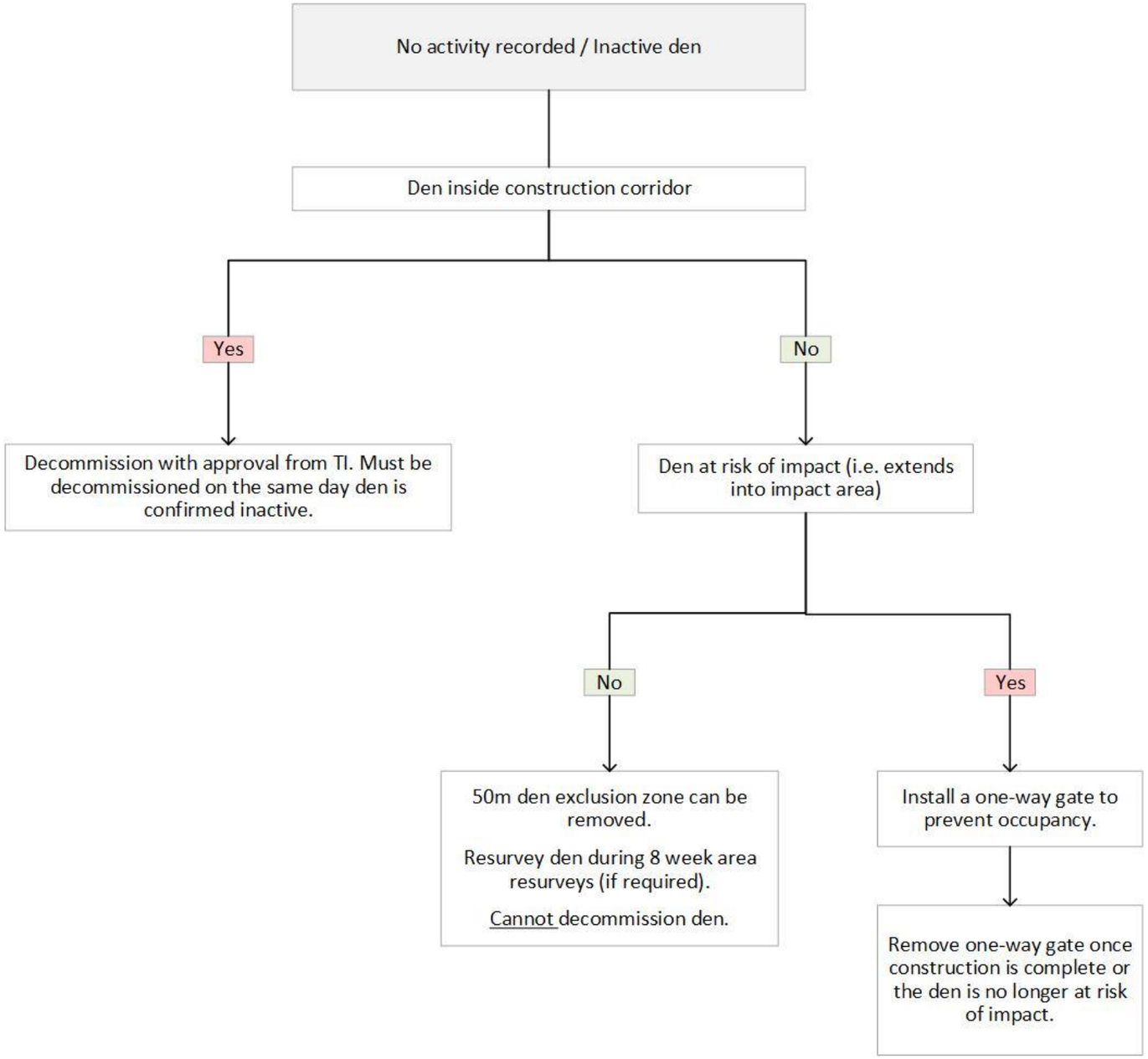



Figure 3 Den Management for dens with no recorded activity after 7 nights monitoring

## D. Unanticipated discoveries

Should a previously unidentified or unanticipated discovery of a potential den be found by the contractor (or other parties) during works, the following steps must be undertaken:

1. Contractor to add a den point to the NMIS Construction Planning Map and select "Requires assessment". Update the following fields in the den point:
    a. Line and chainage (e.g. E1_500)
    b. Confirm if den is within construction corridor (use a rover GPS if required)
    c. Confirm 50m exclusion zone is in place (Yes/No)

    Leave the remaining den point fields blank (the Ecologist is responsible for updating the remaining fields when assessing the potential den).

2. Immediately establish a 50m exclusion zone around the potential den (Contractor).
3. Contractor Environmental Representative(s) must be informed of the potential den location and that a 50m exclusion zone has been established around the den.
4. Contractor Environmental Representative(s) must then arrange for the potential den to be surveyed by the Ecologist and update the relevant NMIS Den Survey Checklist with latest information.
5. Ecologist must assess potential dens in accordance with Section 2A Ecologist (Assessing Dens Identified by the Contractor).
6. Monitoring and den decommissioning of dens must be undertaken in accordance with Section 2B and 2C of the protocol.

## E. Resurvey Requirements

Areas must be resurveyed if clearing and construction has not commenced within 8 weeks of surveys[2]. If the works area is divided into coupes, the process must be repeated until surveying of the entire footprint is complete.

[2] The resurvey date is 8 weeks from the date a survey commenced, not when monitoring (if undertaken) was completed.

# References

Environment Strategic Business Unit (2023). Survey Guidelines and Management Advice for Development Proposals that may impact the Tasmanian Devil (Sarcophilus harrisii). Department of Natural Resources and Environment, Tasmania.

Commonwealth of Australia (2011). Survey guidelines for Australia's threatened mammals. Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999.