Risk Categorisation
GUIDELINES for the keeping and MOVEMENT of captive Tasmanian devils

Overview

This classification system has been developed as a guide to help assess the relative risk of infection with devil facial tumour disease (DFTD) of Tasmanian devils held in and moved between captive facilities.

To maintain the same risk of any captive population, Tasmanian devils should only be introduced to a captive facility that is at the same or higher risk category compared to the captive facility from which it originated. A single captive facility may hold populations of devils in more than one risk category provided the groups are separated by devil-proof perimeter fencing, animals are not moved between groups, keepers observe biosecurity protocols including servicing low risk animals before higher risk groups each day and maintaining accurate records (within ZIMS or equivalent system) of animal movements, breeding and housing locations.

Categories are numbered from 1 (lowest risk) to 4 (highest risk) of DFTD infection. The classification is for the whole population, not individual devils.

Devils MAY be moved from one captive facility to a captive facility of higher risk without restriction; however, they are then categorised at the risk status of the receiving captive facility. **If a devil from a higher risk captive facility moves to a lower risk captive facility, the whole recipient captive facility takes on the higher risk category of that devil and cannot progress to a lower risk category for 15 months, unless there are quarantine facilities at the receiving captive facility that can ensure complete separation of the higher risk devil from the remainder of the population for a 15 month period.**

Table 1 provides guidelines for when devils can be introduced into a captive facility. Special conditions apply to pouch young and juvenile animals.

To be eligible for movements described in the document all young should be clinically healthy with no visible bite wounds or skin lesions and not housed with devils other than their mother and littermates.

Background

The mode of transmission of DFTD is by transfer of tumour cells by direct contact between devils(Pearse and Swift 2006). Incubation period (time between infection and onset of clinical signs) is poorly known but anecdotal information initially suggested between 6-10

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months based on DFTD occurring in captive populations (McCallum et al. 2007). More recently (in 2013), the longest known possible incubation period for DFTD was recorded as 13 months. As a result, the time to progress between risk categories has been set at 15 months\(^1\).

**Devil facial tumour -2**

In 2015, a second transmissible cancer known as devil facial tumour-2 (DFT-2) was detected in south-eastern Tasmania D’Entrecasteaux Channel Peninsula (Pye et al. 2016). There is currently no information on the incubation period of this tumour and therefore wild devils from this region are not being brought into captive populations. Where orphans or injured wild adult devils from the Channel region are held by wildlife carers, no devils from outside this region should be held at the same facility and disinfection of premises should be undertaken when the devils have left the site.

**Risk Categorisations**

The risk categorisations in Table 1 are listed in order of highest risk (category 4) to lowest risk (category 1), as this is the order in which captive facilities will generally progress over time.

Note that any captive facility cannot progress to a lower level of risk until it meets the criteria for the lower level of risk and has maintained the criteria for the lower risk category for a minimum of 15 months. The tables below show the biosecurity measures required for each of the risk categories including devil proof pens and perimeter fence specifications and biosecurity practices required for managing devils in categories 1, 2 and 3 (Table 2).

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\(^1\) Other data available on incubation period include the depopulation of devils from the Forestier peninsula in 2012, in which 23/35 devils were free of DFTD at the time of capture and isolation, and only one went on to develop DFTD. Clinical signs appeared 27 days after capture.
Table 1. Criteria for risk categories and biosecurity measures required for progression to lower risk categorisations

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Biosecurity measures required for progression to lower risk category</th>
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</table>
| **4** (high risk) | Captive facility: Devils maintained in pens which do not have devil proof solid walls *and* there is no secure, devil proof perimeter fence, | • All diseased devils removed, *and*  
• Infected pens de-stocked, cleaned with appropriate disinfectants (F10, Virkon or bleach) and left empty for one month prior to restocking, *and*  
• All high-risk devils identified (i.e.: in contact or from same source as diseased animal), *and*  
• All suspect DFTD lesions reported to Natural and Cultural Heritage (NCH) Division vets, and biopsied and sent to DPIPWE Animal Health Laboratories (AHL), Mt Pleasant, Launceston, *and*  
• All dead devils necropsied, reported to NCH vets, and any suspect lesions sampled and sent to DPIPWE AHL, *and*  
• High-risk devils examined quarterly for DFTD, for a 15 month period immediately following last known DFTD exposure, *and*  
• A biosecurity plan is developed and/or reviewed with DPIPWE. This will include measures to progress the captive facility to category 3:  
  o Construction of pens with devil proof solid walls  
  o Biosecurity practices (as per captive facilities biosecurity plan) to be carried out |
| **3** (medium risk) | Captive facility: Devils maintained in pens with devil proof solid walls *and* NO secure devil proof perimeter fence, | • Construction of a devil proof perimeter fence, *and*  
• No contact with devils of higher risks for at least 15 months after completion of the devil proof perimeter fence. |

Captive facility DFTD status: DFTD confirmed or possible in the captive facility, i.e.:  
- History of confirmed disease in one or more animals in the captive facility, *or*  
- A captive facility that has received devil(s) from another category 4 captive facility, *or*  
- Adult wild devils captured and kept in the captive facility under secure conditions for less than 15 months, *or*  
- Juvenile devils (i.e. post departure from the pouch) removed from DFTD mothers

Captive facility DFTD status: DFTD not present in the captive facility, i.e.:  
- Biosecurity practices (as per captive facility’s biosecurity plan) are in place, *and*  
- No contact with wild devils or devils from a higher risk category captive facility for at least 15 months. *or*  
- Pouch young removed from DFTD females. NB prior to removal from female, the condition of female, possible housing and welfare of female and young should be considered.
<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
<th>Biosecurity measures required for progression to lower risk category</th>
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<tr>
<td>2 (low risk)</td>
<td>Captive facility: Devils maintained in pens with devil proof solid walls surrounded by a devil proof perimeter fence, Captive facility DFTD status: DFTD not present in the captive facility, i.e.: - Biosecurity practices (as per captive facility’s biosecurity plan) in place, and - No contact with wild devils or devils from a higher risk category captive facility for at least 15 months or - Orphaned pouch young removed from pouches of females with no-signe of DFTD</td>
<td>• No contact with devils of higher risks for at least 15 months, and • No public access and off display if in Tasmania</td>
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<tr>
<td>1 (very low risk)</td>
<td>• Captive facility: Devils maintained in pens with devil proof solid walls surrounded by a devil proof perimeter fence for at least 15 months without contact with wild devils or devils of higher risks Captive facility DFTD status: DFTD not present in the captive facility</td>
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### Table 2. Fence specifications and biosecurity requirements

<table>
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<tr>
<th>Solid devil proof pen walls (for Categories 1, 2 and 3)</th>
<th>Lockable devil proof perimeter fence (for Categories 1 and 2)</th>
<th>Biosecurity practices (for Categories 1, 2 and 3)</th>
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<tbody>
<tr>
<td>• Smooth faced, unclimbable pen walls (e.g. metal sheeting) of a sufficient and appropriate design to prevent devil movement either into or out of the pen, and</td>
<td>• Lockable fence at least 1.8m high of a sufficient and appropriate design to prevent devil intrusion, as outlined below. Fence should have an outward pointing floppy top or a flat metal section of sheeting near the top to prevent devils climbing up and over; or the entire fence be made of colour bond; or include two strands of electric wires at the top of the 1.8m fence that will prevent devils from climbing over.</td>
<td>• Dedicated foot wear for the devil captive facility, or</td>
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<td>• Walls must be a minimum of 1.2m high, and</td>
<td>• Fence posts should be on the inside of the captive facility or covered in metal sheeting (if located on the outside of the captive facility).</td>
<td>• Use of regularly maintained foot baths or sprays into and out of secure devil proof pens</td>
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<td>• Burrow-proof base/foundations such as wire mesh skirting (400 mm wide either side) or skirting extend below the ground (500mm deep)</td>
<td>• Fence must have a burrow-proof base such as wire mesh skirting. Skirting should extend at least 400mm on either side or skirting should extend below the ground at least 500mm deep.</td>
<td>• Dedicated clothing worn only onsite.</td>
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<td>• Gates must incorporate a flat metal section of sheeting near the top to prevent devils climbing up, and concrete footings to prevent animals digging underneath.</td>
<td>• Gates must be maintained in good repair.</td>
<td>• A lockable devil proof perimeter fence must be in place to prevent unauthorized movement of people or animals.</td>
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<tr>
<td>• Fences and gates must be maintained in good repair.</td>
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### Notes

- Devils held in captive facilities of risk category 1, 2 or 3 may not be fed roadkill or collected carcasses due to the unknown potential risk of DFTD transmission. If this practice does occur, the captive facility will immediately be downgraded to category 4.

- If devils are taken off site for display or other purposes they can be returned to the captive facility with no impact on its categorisation, provided the devils have not visited a higher-risk facility or had any opportunity to come in contact with wild devils.
devils or their environments. Removal for less than 12 hours where animals are kept in a transport crate at all times when not being handled and is only being handled under the supervision of the keeper does not present a risk, provided there is no contact with other devils. Patting of devils by members of the public is not considered a DFTD risk.

### Glossary

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<tr>
<th>Term</th>
<th>Description</th>
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<td>Pouch Young</td>
<td>Unweaned young still in the pouch (less than 500g)</td>
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<td>Juveniles</td>
<td>Young up to the point of weaning</td>
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<tr>
<td>Dispersing Young</td>
<td>Weaned young that have just left the maternal den (under 4kg, normally January-March)</td>
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</table>

### References

Harrison, Alicia. 2014. ‘Vertical Transmission of DFTD’. Final Year Student Report. DPIPWE.

Hogg, Carolyn, and Jocelyn Hockley, eds. 2013. ‘Husbandry Guidelines for the Tasmanian Devil’. DPIPWE, ZAA.

