

Public Realm

Master Specification

PR-LS-C12 Tree Hollow Relocation and Habitat Creation

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PR-LS-C12 Tree Hollow Relocation and Habitat Creation

1 General

- 1.1 This Part defines the Requirements for tree hollow inspection, relocation and habitat creation.
- 1.2 This Part references the following documents:
 - a) Department Fauna Impact Assessment Guidelines.
- 1.3 Department publications are available from: <http://www.dit.sa.gov.au/standards/environment>.

2 Fauna Habitat

- 2.1 Natural tree hollows are valuable and often essential for many wildlife species. They provide refuge from weather and predators, and safe sites for breeding. The destruction of living or dead hollow-bearing trees displaces or kills wildlife dependent on those hollows.

3 Tree Hollow Inspection Requirements and Responsibilities

- 3.1 Prior to undertaking a vegetation clearance or pruning activity, the Contractor shall undertake a fauna inspection of tree hollows within the trees impacted by the works. Where available, refer to the project's Vegetation Survey data sheet for initial tree hollow inspection information.
- 3.2 The person undertaking the fauna inspection shall have appropriate qualifications in zoology or natural resource management or similar. If any fauna species are found on site and need to be relocated, a suitably qualified specialist shall be contacted to provide advice on the relocation of animals or treatment of injured animals (e.g. Fauna Rescue SA). A local veterinarian may be required to treat injured animals.

Tree Hollow Relocation Report

- 3.3 Following the tree hollow inspections, the Contractor shall prepare a Tree Hollow Relocation Report containing the following information:
 - a) fauna species and locations observed (include Vegetation Survey tree numbers);
 - b) tree hollows identified for relocation (include Vegetation Survey tree numbers);
 - c) tree hollow harvesting methods;
 - d) hollows to be created or relocated including:
 - i) end of a Natural Tree Hollow;
 - ii) section of a Natural Tree Hollow;
 - iii) Natural Hollows;
 - iv) Entire Trees With Hollows; and
 - v) Manufactured Hollows and Nesting Boxes.
 - e) targeted fauna species from Appendix 1: Hollow Requirements for Particular Species;
 - f) proposed sites for hollow relocation including:
 - i) arboreal;
 - ii) terrestrial;
 - iii) hollow orientation.
 - g) proposed equipment and methods for tree hollow relocation;
 - h) methods of tree hollow attachment; and,
 - i) tree hollow maintenance requirements.

- 3.4 The Tree Hollow Relocation Report will be prepared in consultation with a zoologist or person with tertiary qualifications in natural resource management or similar.

4 Habitat Creation

- 4.1 Tree hollow entrance (or aperture size), location, and orientation largely determine which species are able to make use of a hollow. Specific rare species may be targeted by relocating tree hollows of a particular aperture size.
- 4.2 Aperture sizes are generally classed as Large (150 to 200 mm), Medium (50 to 150 mm), and Small (50 mm or less).
- 4.3 Refer Appendix 1: Hollow Requirements for Particular Species for tree hollow specification requirements by species.

5 Tree Hollow Harvesting and Relocation

Hollow Type

- 5.1 The Contractor shall comply with the following hollow types.

End of a Natural Tree Hollow

- 5.2 The opening at the end of a natural tree hollow will be used as the aperture. The length of the hollow will be a minimum of 400 mm and a maximum of 1,000 mm long (unless the targeted species is the Yellow-tailed Black Cockatoo which requires a hollow length of 2,400 mm).
- 5.3 The cut end of the hollow will be capped using a galvanized, perforated end plate, and fixed with 8 g x 30 mm galvanized self-drilling screws at 150 mm centres. Nesting material 200 mm deep, such as leaf litter that would naturally fall into hollows, will be placed inside the hollow.

Section of a Natural Tree Hollow

- 5.4 A section of hollow branch that has both ends cut may have one or both ends capped. Where both ends are capped, an aperture is to be drilled or a slit formed at the top of the limb, depending on which species is targeted.
- 5.5 The length of the hollow will be a minimum of 400 mm and a maximum of 1,000 mm long (unless the targeted species is the Yellow-tailed Black Cockatoo which requires a hollow length of 2,400 mm).
- 5.6 The top cut ends of the hollow will be capped using a galvanized end plate and fixed with 8 g x 30 mm galvanized self-drilling tech screws at 150 mm centres. The bottom cut end will be capped using a galvanized, perforated end plate, and fixed with 8 g x 30 mm galvanized self-drilling screws at 150 mm centres. Nesting material 200 mm deep, such as leaf litter that would naturally fall into hollows, will to be placed inside the hollow.

Natural Hollows

- 5.7 A natural tree hollow will need no modification prior to relocation, i.e. the saw cut will be made after the extent of the hollow. The length of the hollow will be a minimum of 400 mm and a maximum of 1000 mm long (unless the targeted species is the Yellow-tailed Black Cockatoo which requires a hollow length of 2400 mm).

Entire Trees with Hollows

- 5.8 Where entire trees are identified for relocation, the tree will be retained or stockpiled until a suitable site has been selected. The tree will be handled with care so as not to diminish its habitat value.

Manufactured Hollows and Nesting Boxes

- 5.9 Manufactured hollows and nesting boxes will be appropriate for the species encountered.

Hollow Relocation Sites

- 5.10 Arboreal: The Tree Hollow Relocation Report will identify suitable host trees for the relocation of hollows. The host trees will be mature, in good health, and will be part of a vegetated area conducive to habitat development. The host trees will have sufficient height and branch structure to enable positioning hollows in positions that conform to the hollow requirements as shown in Appendix 1: Hollow Requirements for Particular Species. No more than two hollows will be placed in one tree. Hollows will be mounted vertically, or as close as possible to their original orientation. Hollows will be mounted a minimum of 5 m from ground level or at a similar height and angle to where it was in the original tree. The aperture will be faced away from prevailing weather to reduce entry of rain.
- 5.11 Terrestrial: The Tree Hollow Relocation Report will identify designated locations for hollows on the ground in areas that are targeted for terrestrial fauna habitat creation. The hollows will be placed in locations where they will not smother native vegetation or present a hazard to persons or property.

6 Maintenance

- 6.1 The location of installed hollows will be recorded spatially. The hollows will be maintained for a period of 12 months from the Date of Completion. The Contractor shall submit a program of maintenance based on site inspections at six monthly intervals.
- 6.2 At each site inspection, the Contractor shall check each installed hollow for safety, including refastening, re-orientation, tightening of fixings, and re-fixing of end caps if necessary. All activities will be recorded, and a copy of the records will be provided to the Principal after the inspection.
- 6.3 Where installed hollows are occupied, the Contractor shall make every effort to avoid disturbing the fauna. A record will be kept of hollows that are, or have been, occupied by fauna.

7 Hold Points

- 7.1 There are no Hold Points referenced in this Part.

Appendix 1: Hollow Requirements for Particular Species

Species	Interior Diameter	Depth / Length	Entrance Diameter	Vertical / Horizontal	Height off Ground	Breeding Season	Reference
LARGE HOLLOWES – 150 to 200 mm							
Black Cockatoo, Red-Tailed	300 mm	870–1000 mm	160 x 200 mm	V	> 7 m	Varied	Grant (1997)
Black Cockatoo, Glossy	300 mm	870–1000 mm	160 x 200 mm	V	> 7 m	Mar–Aug	Pedler (1996)
Black Cockatoo, Yellow-tailed	300–400 mm	600–2400 mm					
Boobook, Southern	-	-	150 mm	H	-	Sept-Nov	Trainor (1995)
Cockatoo, Sulphur-crested	300 mm	1000 mm	150 mm	V	> 7 m	Aug-Jan	Trainor (1995)
Corella, Little	300 mm	1000 mm	150 mm	V	> 7 m	Jun-Oct	Trainor (1995)
Corella, Long-billed	300 mm	1000 mm	150 mm	V	> 7 m	Aug-Dec	Trainor (1995)
Kookaburra, Laughing	150–300 mm	> 400 mm	80–120 mm	H	5–10 m	Sept-Jan	Elliott (1994)
Owl, Barn	400 mm	750 mm	150 mm (open)	H	5 m	Autumn-Spring	Adams (1980) & Trainor (1995)
Shrike – thrush, Grey	150 x 300 mm	150–300 mm	90–150 mm (open)	H	> 2-5 m	Jul–Feb	BFNC (n.d.) & Elliott (1994)
Swallow, Welcome	130 mm	-	Open	H	3 m	Aug-Dec	Adams (1980)
MEDIUM HOLLOWES – 50 to 150 mm							
Brushtail Possum	210–320 mm	400 mm	100-150 mm	V	4–8 m	Autumn	RSPCA (n.d.) & MZES (n.d.)
Duck, Australian Wood	200 mm	500 mm	120 mm	V	> 1.5–2 m	Sept–Nov	Trainor (1995)
Duck, Pacific Black	450 x 300 mm	-	120 mm	-	> 1.5–2 m	Jul-Oct	Elliott (1994)
Galah	200 mm	650 mm	120 mm	V	6 m	Aug–Nov	Adams (1980)
Glider, Squirrel	-	-	60 mm	-	-	May-Dec	Trainor (1995)
Kestrel, Nankeen	400 mm	750 mm	100 mm	V	5 m	Aug-Nov	Adams (1980)
Kingfisher, Sacred	130 mm	600–900 mm	75 mm	H	5–10 m	Sep-Mar	Adams (1980)
Lorikeet, Rainbow	130 mm	800 mm	80–100 mm	V-H 45° angle	> 5 m	Aug-Jan	Grant (1997)
Lorikeet spp.	120 mm	600 mm	60 mm	H	5 m	Aug-Jan	Adams (1980)
Owlet-nightjar, Australian	150 mm	300 mm	50–80 mm	V	> 5 m	Sep-Dec	Adams (1980) & Elliot (1994)
Parrot, Red-rumped	100–150 mm	400–600 mm	70–120 mm	V/H	5 m	Aug-Jan	Adams (1980) & Elliot (1994)
Ringtail-Possum sp.	250 mm	350–400 mm	60–90 mm	V	4-8 m	Apr-Nov	Trainor (1995) & MZES (n.d.)
Rosella spp.	120–180 mm	> 400 mm	70–120 mm	V/H	5 m	Aug-Jan	Elliott (1994) & MZES (n.d)
Rosella, Crimson	150–200 mm	350–800 mm	75–100 mm	V/H	5–6 m	Sep-Jan	Adams (1980)
Rosella, Eastern	135–240 mm	350–800 mm	60–100 mm	V/H	5–6 m	Aug-Jan	Adams (1980)
Teal, Chesnut	200–450 mm	450–750 mm	80–120 mm	V	1.5 m	Sep-Dec	Adams (1980) & Elliot (1994)
Teal, Grey	400–450 mm	450–750 mm	80–120 mm	V	1.5 m	All year	Adams (1980) & Elliot (1994)
Treecreeper spp.	90–150 mm	100–400 mm	50–80 mm	V	-	-	Elliott (1994)
Treecreeper, White-throated	75–100 mm	300–400 mm	50 – 70 mm	V	5 m	Aug-Jan	Adams (1980)

