

Supplementary Material

Continuing decline of the common brushtail possum in central Australia

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Appendix S1. Location of common brushtail possum survey sites in Tjoritja National Park, Northern Territory.

Site	Latitude	Longitude
WP01	-23.64855	132.39819
WP02	-23.65449	132.41380
WP03	-23.60755	132.60314
WP04	-23.64170	132.65068
WP05	-23.63969	132.64836
WP06	-23.64260	132.67705
WP07	-23.62295	132.73199
WP08	-23.61791	132.74779
WP09	-23.60885	132.76124
WP10	-23.60564	132.76475
WP11	-23.60921	132.76686
WP12	-23.64713	132.75527
WP13	-23.72828	132.91038
WP14	-23.73312	132.92982
WP15	-23.73513	132.93377
WP16	-23.75203	132.97633
WP17	-23.75465	132.98680
WP18	-23.77744	133.07013
WP19	-23.67651	133.72056
WP20	-23.597684	132.790482
WP21	-23.646159	132.852121

Appendix S2. Details of the three olfactory lures used at each camera trap targeting the common brushtail possum in Tjoritja National Park, Northern Territory.

- 1) Almond balls made from a 3:1 mix of Macro Natural Almond Spread (August deployment) or Bega Almond Spread (October servicing) and Sunbeam Almond Meal with ~1 ml/100 g of Queen Natural Almond Extract. At each camera, the almond lure was encased in flywire (to exclude ants) within a 70-ml specimen jar with drilled holes, and positioned roughly 20 cm above ground (measured to the top of the specimen jar) on the fence dropper.
- 2) 1.5 ml of Queen Natural Almond Extract (August deployment) or 4 ml of Walnut Oil (October servicing) was poured onto a rock (with a small depression if available) placed between the camera and fence dropper, about 1 m from the fence dropper.
- 3) Liquid scents were dispersed using a diffuser made from a 5 ml or 6 ml (10 mm diameter) glass test tube (August deployment) or 12 ml (14 mm diameter) glass Evacuated Blood Collection Tube (October servicing), a 12 cm length of aromatherapy diffuser stick, scent solution (see below) and masking tape to seal the tube. The diffuser was affixed to a 15 cm length of wooden ruler with predrilled holes, which was then attached to the top of the fence dropper such that the oil diffuser was enclosed between the fold of the fence dropper and the wooden board. Different scents were generally alternated between neighbouring cameras: in August, 4–5 ml of eucalyptus oil (equal parts Bosistos Eucalyptus Oil, Springfield Aromatherapy Essential Oil Dispersant and demineralised water; 13 sites) or rose oil (1:1:3 ratio of Oil Garden Rose Otto, Springfield Aromatherapy Essential Oil Dispersant and demineralised water; 13 sites) was used; and in October, ~11 ml of rosewater (equal parts Queen Natural Rosewater Flavour and water; 11 sites), strawberry (equal parts Queen Strawberry and Cream Flavour for Icing and water; 8 sites) or eucalyptus oil (100% Bosistos Eucalyptus Oil; 5 sites) was used. The constituent of liquid scents was changed in October as those used in August separated out into a cloudy and transparent liquid which evidently affected dispersal of the scent from the diffuser.

Appendix S3. Summary of food plant abundance across 19 of the common brushtail possum survey sites (Number of individual plants: 0 = 0, 1 = 1-10, 2 = 11-30, 3 = >30).

Tree occurrence and abundance

Site	<i>Atalaya hemiglauca</i>	<i>Corymbia aparrerinja</i>	<i>Corymbia opaca</i>	<i>Eucalyptus camaldulensis</i>
WP01	0	0	0	1
WP02	2	0	2	2
WP03	1	2	1	3
WP04	2	1	0	3
WP05	2	1	1	1
WP06	3	1	3	1
WP07	0	2	0	0
WP08	0	0	0	0
WP09	0	2	0	0
WP10	0	1	0	3
WP11	0	0	0	0
WP12	0	1	0	0
WP13	1	0	0	2
WP14	0	1	0	1
WP15	0	1	0	0
WP16	3	0	1	1
WP17	1	1	0	0
WP18	0	0	0	0
WP19	1	1	0	0

Tall shrub abundance

Site	<i>Acacia aneura</i>	<i>A. estrophiolata</i>	<i>A. kempeana</i>	<i>A. macdonnelliensis</i>	<i>A. tetragonophylla</i>	<i>Callitris glaucophylla</i>	<i>Capparis mitchelli</i>	<i>Grevillea striata</i>	<i>Hakea divericata</i>	<i>Ventilago viminalis</i>
WP01	1	0	0	0	0	3	0	0	0	0
WP02	1	1	3	0	1	1	1	0	0	1
WP03	0	0	2	0	0	3	0	0	1	0
WP04	0	1	0	0	0	0	0	0	0	0
WP05	0	3	0	0	1	0	1	0	1	0
WP06	0	0	3	0	0	3	1	0	1	0
WP07	0	0	0	0	0	3	0	0	0	0
WP08	0	9	0	0	0	3	0	0	0	0
WP09	0	0	0	0	0	3	0	0	0	0
WP10	2	0	0	2	0	3	0	0	0	0
WP11	0	0	0	0	0	3	0	0	0	0
WP12	0	0	0	3	0	2	0	0	0	0
WP13	3	0	1	0	0	3	0	1	0	0
WP14	2	0	1	3	0	1	0	0	0	0

WP15	0	0	0	3	0	2	0	0	0	0
WP16	2	0	3	0	0	0	1	0	1	1
WP17	3	0	2	3	0	3	0	0	1	0
WP18	0	0	0	2	0	2	0	0	0	0
WP19	0	0	0	0	0	1	0	0	0	1

Low shrub and mistletoe abundance

Site	<i>Capparis spinosa</i>	<i>Carissa lanceolata</i>	<i>Clerodendrum floribundum</i>	<i>Ficus platypoda</i>	<i>Marsdenia australis</i>	<i>Rhagodia spp.</i>	<i>Santalum lanceolatum</i>	<i>Solanum quadriloculatum</i>	<i>Leucopogon sonderensis</i>	Mistletoes spp.
WP01	0	0	0	0	0	1	1	1	0	2
WP02	0	0	0	0	0	2	0	1	0	2
WP03	0	0	0	1	0	0	0	1	0	2
WP04	0	0	0	0	0	0	0	0	0	2
WP05	0	0	0	0	0	0	0	0	0	0
WP06	0	0	0	0	0	0	0	0	0	3
WP07	0	0	0	0	1	0	0	1	1	1
WP08	0	0	0	0	1	0	1	0	0	1
WP09	0	0	0	1	0	0	0	0	0	1
WP10	0	0	0	1	0	0	0	1	0	2
WP11	0	0	0	0	0	0	0	1	0	1
WP12	0	0	0	1	0	0	0	0	0	2
WP13	0	2	0	0	0	2	2	0	0	0
WP14	0	0	0	1	0	0	0	1	0	3
WP15	0	0	0	1	0	0	0	0	0	2
WP16	0	0	0	0	0	0	0	0	0	2
WP17	0	0	0	0	0	0	0	0	0	2
WP18	0	0	0	0	0	0	0	1	0	2
WP19	0	0	0	2	0	0	0	0	0	2