**Tree-scale**

**Hypothesis 1:** Koalas preferentially use ‘Preference 1’ trees over ‘Preference 2,3,4,5,6’ trees.

CONFIRMED.

Management implications: Protect and restore ‘preference 1’ tree species.

**Hypothesis 2:** Koalas preferentially use tree species that are larger in diameter than smaller in diameter.

CONFIRMED.

Management implications: Protect mature trees.

**Hypothesis 3:** Preferential use of large trees is more pronounced for ‘Preference 2,3,4,5,6’ trees than ‘Preference 1’ trees.

BUSTED – GOOD EVIDENCE THAT THE OPPOSITE IS TRUE – THE PREFERENCE FOR LARGE TREES IS MORE PRONOUNCED FOR ‘PREFERENCE 1’ TREES.

Management implications: Particularly import to protect mature ‘preference 1’ tree species.

**Site scale and tree-site cross-scale interactions**

**Hypothesis 3:** Koalas preferentially use trees in sites that occur on higher nutrient soils than sites on lower nutrient soils.

PLAUSIBLE, BUT WEAK EVIDENCE: –VE NITRATE, +VE AMONIUM, +VE PHOSPOROUS

Management implications: little need to prioritise habitat protection and restoration based on soil characteristics.

**Hypothesis 4:** The preferential use of trees on sites that occur on high nutrient soils is more pronounced for use of ‘Preference 1’ trees than ‘Preference 2,3,4,5,6’ trees.

BUSTED. LITTLE EVIDENCE.

Management implications: little need to prioritise habitat protection and restoration based on soil characteristics.

**Hypothesis 5:** Koalas preferentially use trees in sites with higher proportions of ‘Preference 1’ trees than sites with lower proportions of ‘Preference 1’ trees.

PLAUSIBLE, BUT WEAK EVIDENCE: IT IS ALSO A MARGINALLY –VE EFFECT OVERALL FOR THE EFFECT OF THE PROPORTION OF ‘PREFERENCE 1’ TREES IN A SITE.

Management implications: see next hypothesis.

**Hypothesis 6:** The preferential use of trees in sites with high proportions of ‘Preference 1’ trees is most pronounced for use of ‘Preference 2,3,4,5,6’ trees than ‘Preference 1’ trees.

CONFIRMED. THE EFFECT OF THE PROPORTION OF ‘PREFERENCE 1’ TREES IN A SITE HAS A POSITIVE EFFECT ON USE OF ‘PREFERENCE 2,3,4,5,6’ TREES.

Management implications: prioritise protection and restoration of preference 2,3,4,5,6 tree species in close proximity to preference 1 tree species. Prioritise protection and restoration of preference 1 tree species wherever they are in relation to other tree species.

**Landscape scale and tree-landscape cross-scale interactions**

**Hypothesis 7:** Koalas preferentially use trees in sites that have a large area of highly suitable (P&2A) habitat in the surrounding landscape than a small area of highly suitable (P&2A) habitat in the surrounding landscape.

PLAUSIBLE, BUT WEAK EVIDENCE.

Management implications: see next hypothesis.

**Hypothesis 8:** The preferential use of trees in sites with large areas of highly suitable (P&2A) habitat in the surrounding landscape is most pronounced for use of ‘Preference 2,3,4,5,6’ trees than ‘Preference 1’ trees.

CONFIRMED. THE EFFECT OF THE PROPORTION AREA OF HIGHLY SUITABLE HABITAT IN THE SURROUNDING LANDSCAPE HAS A MORE POSITIVE EFFECT ON THE USE OF ‘PREFERENCE 2,3,4,5,6’ TREES. THE USE OF ‘PREFENCE 1’ TREES APPEAR TO DECLINE UNDER THESE CIRCUMSTANCES’

Management implications: prioritise broad-scale landscape protection and restoration of landscapes containing high amounts of preference 2,3,4,5,6 tree species (in these cases intactness of landscapes is important – less important for patches of preference 1 tree species).