

Appendix 8

2017 Kendall and Kendall Ecological Services – Annual Nesting Box Inspection

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Teralba Quarry Extension Project Approval 50 - Annual Nesting Box Inspection

Prepared by

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Ecological Services Pty Ltd**

December 2017

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Introduction

Kendall & Kendall Ecological Services Pty Ltd was engaged by Metromix Pty Ltd to install 70 nest boxes at the Teralba Quarry. The requirement to install the boxes is a condition (Condition 50) of the project approval issued by the Minister for Planning and Infrastructure on 22nd February 2013. This report refers to the third annual field inspection.

The Condition

Condition 50 of the project approval states:

- The Proponent shall install 20 nest boxes for microbats, 20 nest boxes for Little Lorikeets and 30 nest boxes for Sugar Gliders. These boxes must be monitored and maintained regularly over the life of the project, and re-located or replaced if not used by targeted fauna for a period of 12 months.

The Boxes

Three types of boxes were installed, these being suitable for:

- Little Lorikeet (20 boxes);
- Squirrel Glider (30 boxes); and
- Microbats (20)

During the field work conducted for the project assessment Little Lorikeets were observed flying over the study area, one species of hollow-dependant threatened microbat was recorded within the study area. The field surveys did not record the Squirrel Glider within the study area however they are known to occur in the locality.

The boxes were installed on the following dates:

- 28/04/2014 & 31/4/2014;
- 22/9/14, 24 & 25/9/2014.

Nesting Box Installation and Location

The maps in Appendix 1 indicate the location of the installed boxes.

Appendix 2 includes details of each of the nesting boxes inspected each box has been given a number which relates to the number for that box on the maps provided in Appendix 1.

First Annual Nesting Box Inspection

No Squirrel Gliders, Little Lorikeets or microbats or positive evidence of use of these species was observed in the nesting boxes.

A number of boxes were being used by Sugar Gliders and other boxes contained eucalypt leaves that had been placed in the boxes by animals some of the leaves contained nesting depressions. Two of the boxes have been colonised by feral honey bees.

Of concern 16 of the boxes placed in the vicinity of the Newtech Pistol Club were missing.

Second Annual Nesting Box Inspection

No Squirrel Gliders, Little Lorikeets or microbats or positive evidence of use of these species was observed in the nesting boxes.

Feral honey bees had abandoned hives that they had established in two of the boxes as observed during the first annual nesting box inspection.

A number of boxes were being used by Sugar Gliders and other boxes contained eucalypt leaves that had been placed in the boxes by animals some of the leaves contained nesting depressions. A brown antechinus was observed in one of the boxes that had been filled with leaves. A white-throated tree creeper was observed flying out of a nesting box as the box was being inspected.

It was noted that two boxes had been destroyed by a bush fire.

Third Annual Nesting Box Inspection

The missing eighteen boxes referred to above were replaced during the field inspection. None of these were replaced in the vicinity of the gun club where 16 boxes are previously gone missing.

During the inspection numbered tags (from "1" to "70") were nailed to the trees in which there were nesting boxes. The numbers referred to in Appendix 1, Appendix 2 & Appendix 3 are the tag numbers.

Appendix 1 provides maps of the locations of the nesting boxes inspected and the locations of the replaced nesting boxes. The maps are also intended to be an aid in the finding the boxes during subsequent inspections.

Appendix 2 provides the GDA (map reference location of the nesting boxes), the type of nesting box and the tree species as well as a photograph.

Appendix 3 provides the observations of the third annual nesting box inspection.

The nesting boxes were inspected over the period of 30/10/17, 31/10/17 and 2/11/17.

No Squirrel Gliders, Little Lorikeets or microbats or positive evidence of use of these species was observed in the nesting boxes.

Feral honey bees were not evident in any of the nesting boxes.

A number of boxes were being used by Sugar Gliders and other boxes contained eucalypt leaves that had been placed in the boxes by animals some of the leaves contained nesting depressions. A bird egg shell was collected and identified as a possible white-throated treecreeper shell.

Recommendations

1. The need to re-locate or replace boxes if they are not used by targeted fauna for a period of 12 months is reviewed.

In light of the fact that:

- No target species has yet to be observed using the nesting boxes; and
 - Squirrel Gliders were not recorded within the project area during the environmental assessment fauna surveys and that Little Lorikeets were only observed flying over the project area and not foraging, sheltering or nesting within the project area. The intent of the installation of the Squirrel Glider and Little Lorikeet boxes was to enhance habitat values and subsequently connectivity across the project area.
2. It is recommended that inspections of the use of the nesting boxes be conducted biannually and that every other alternate year the integrity of the boxes be observed from the ground. Furthermore it is recommended that if in the future inspections the target species are still absent from the project area that the need for further inspections be reviewed.

In regard to the 2016 inspection recommendations:

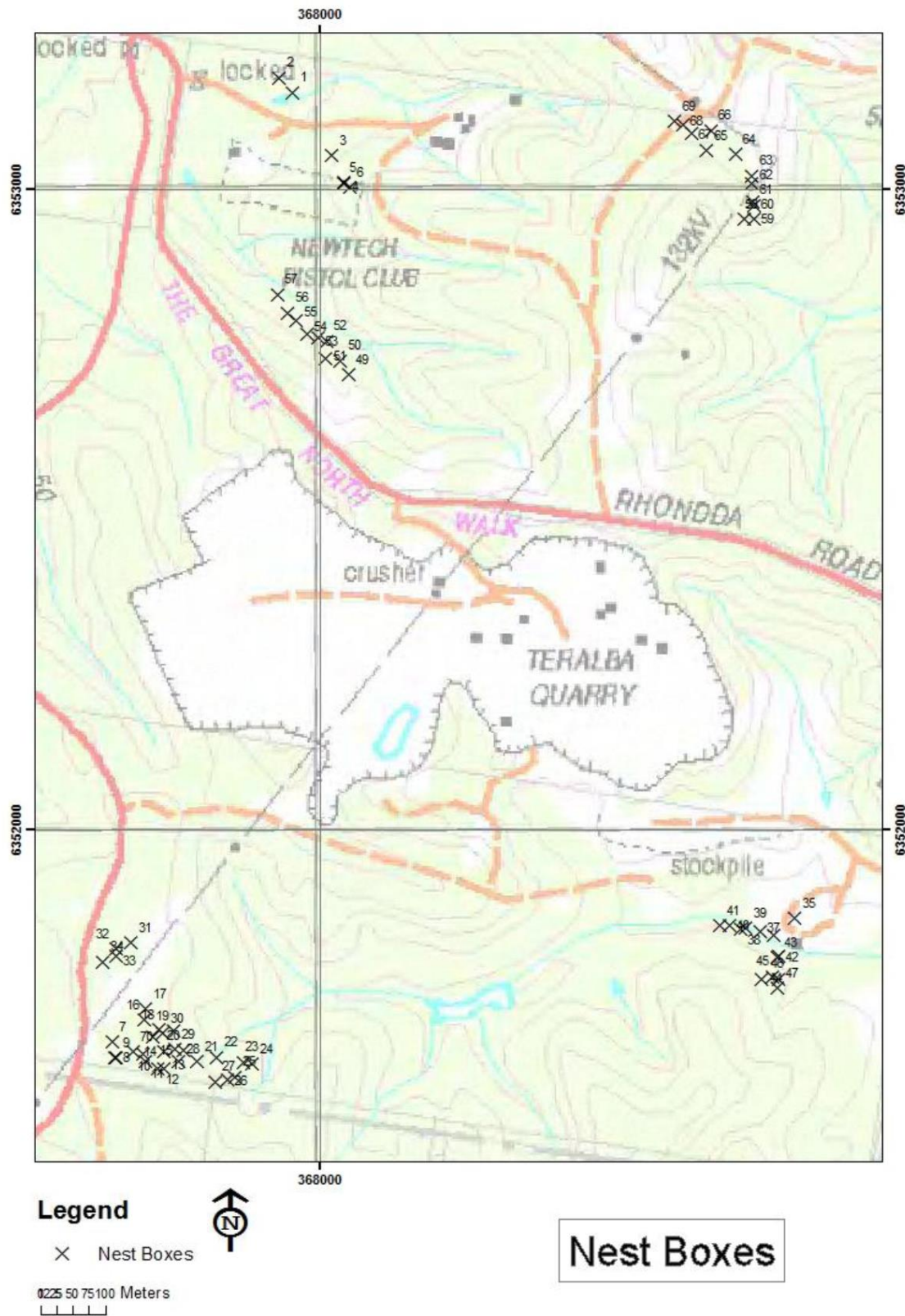
- five additional nesting boxes for each target species have been purchased and are now stored on site so that if a box is found to be missing or damaged during subsequent inspections it can be readily be replaced;
- a numbered metal tag has been nailed to each tree to assist in locating each nesting box during inspections;
- the dangerous tree near Tree No. 35 has been removed.

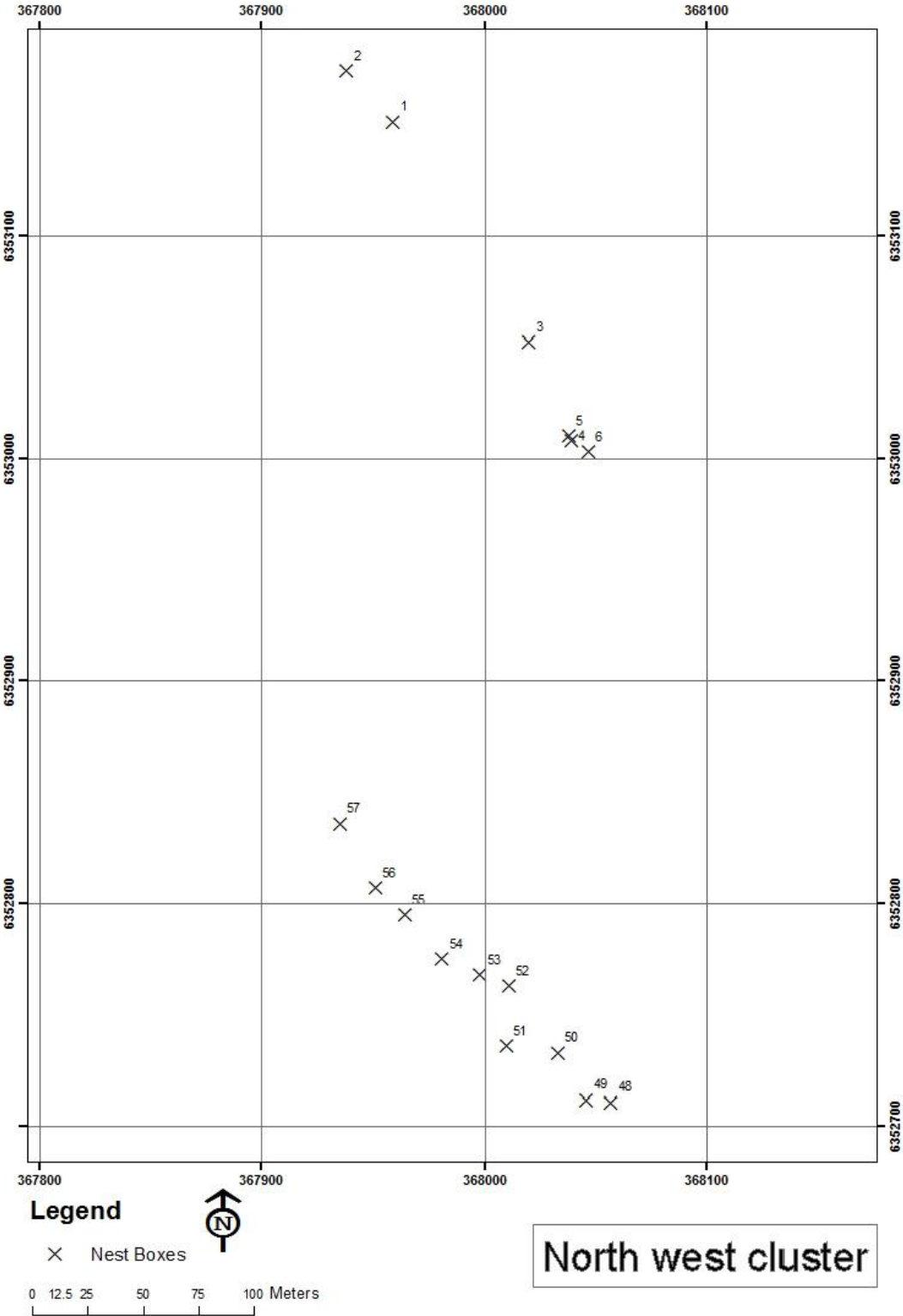
Keith Kendall

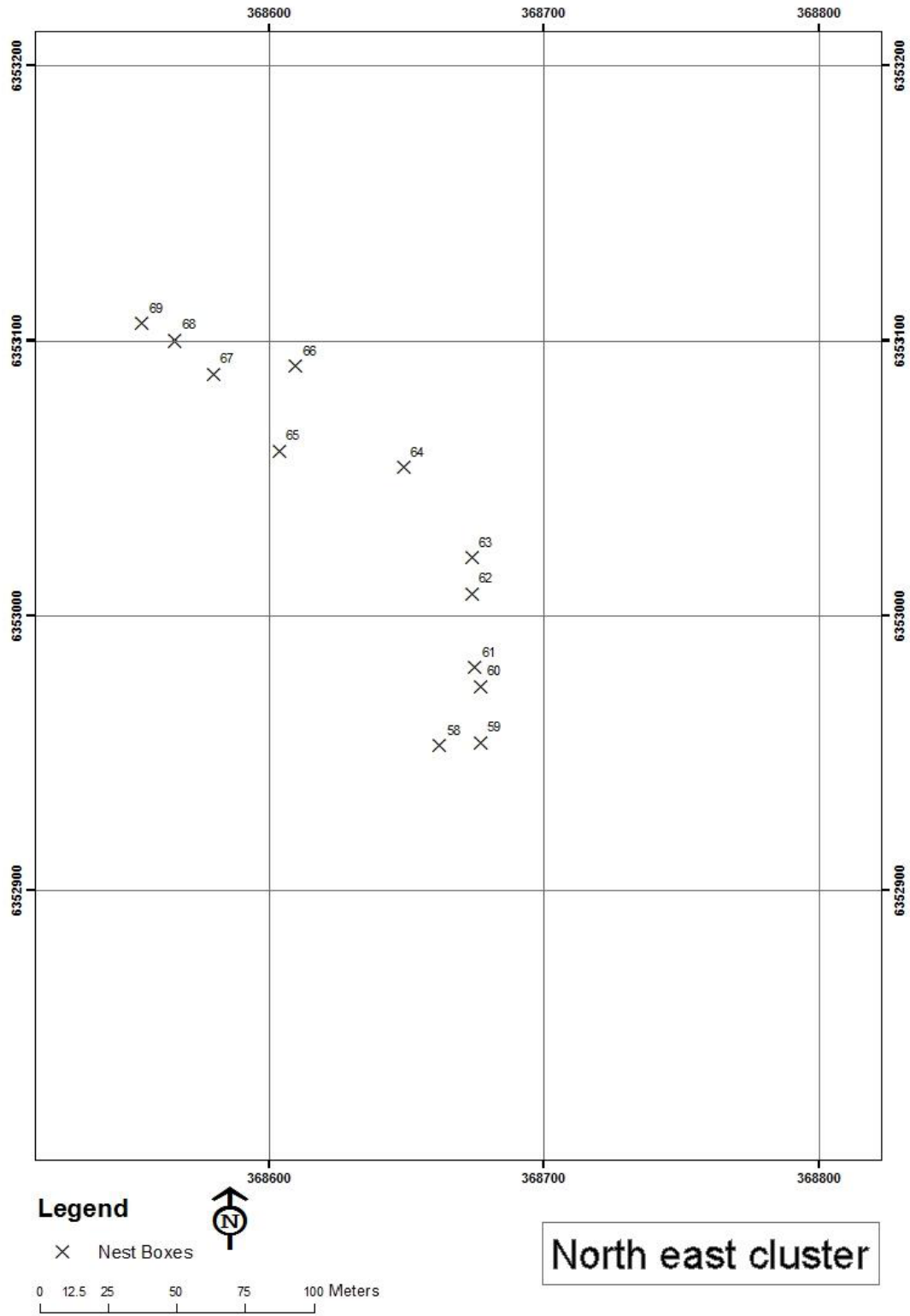
Kendall & Kendall Ecological Services Pty Ltd

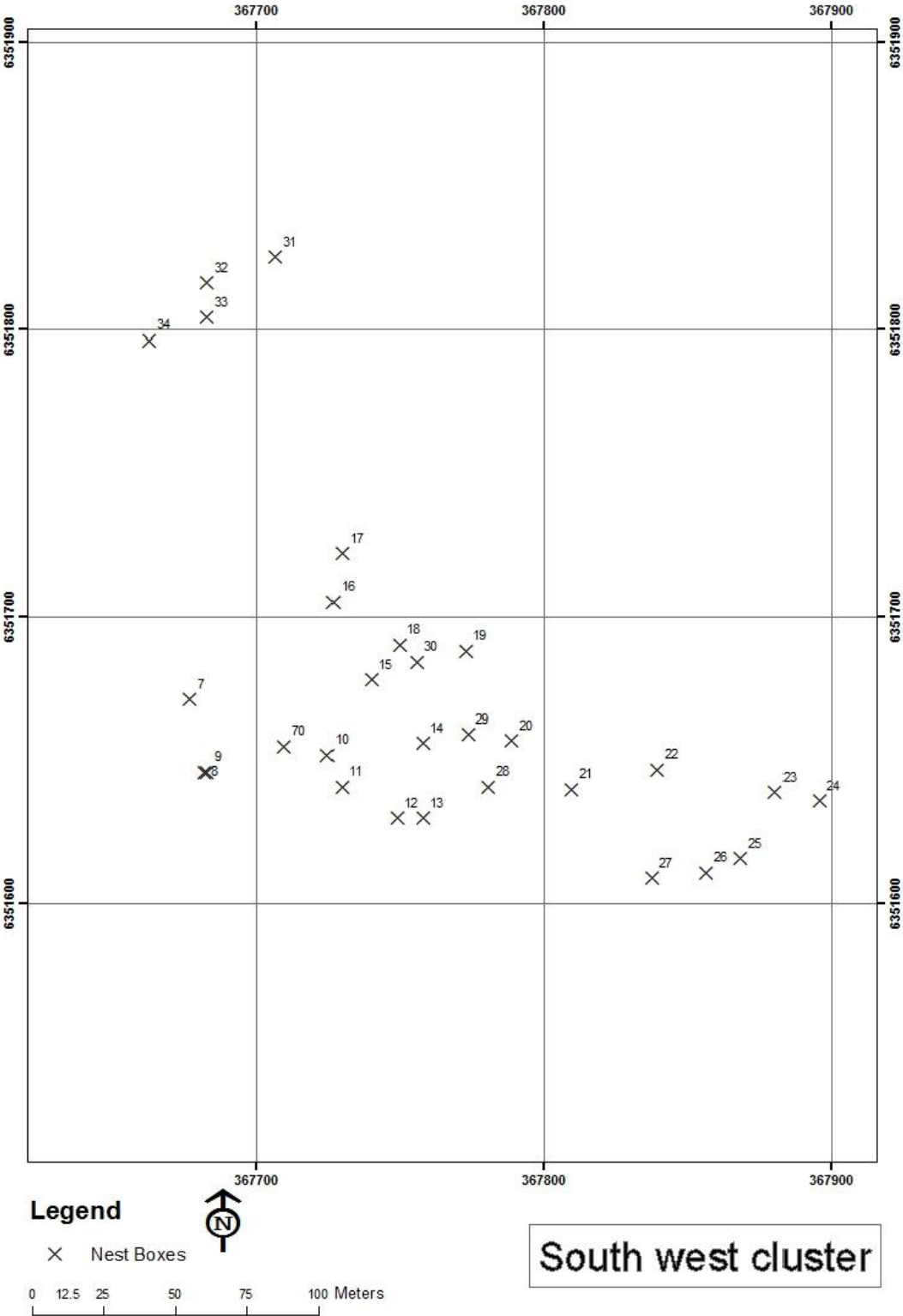
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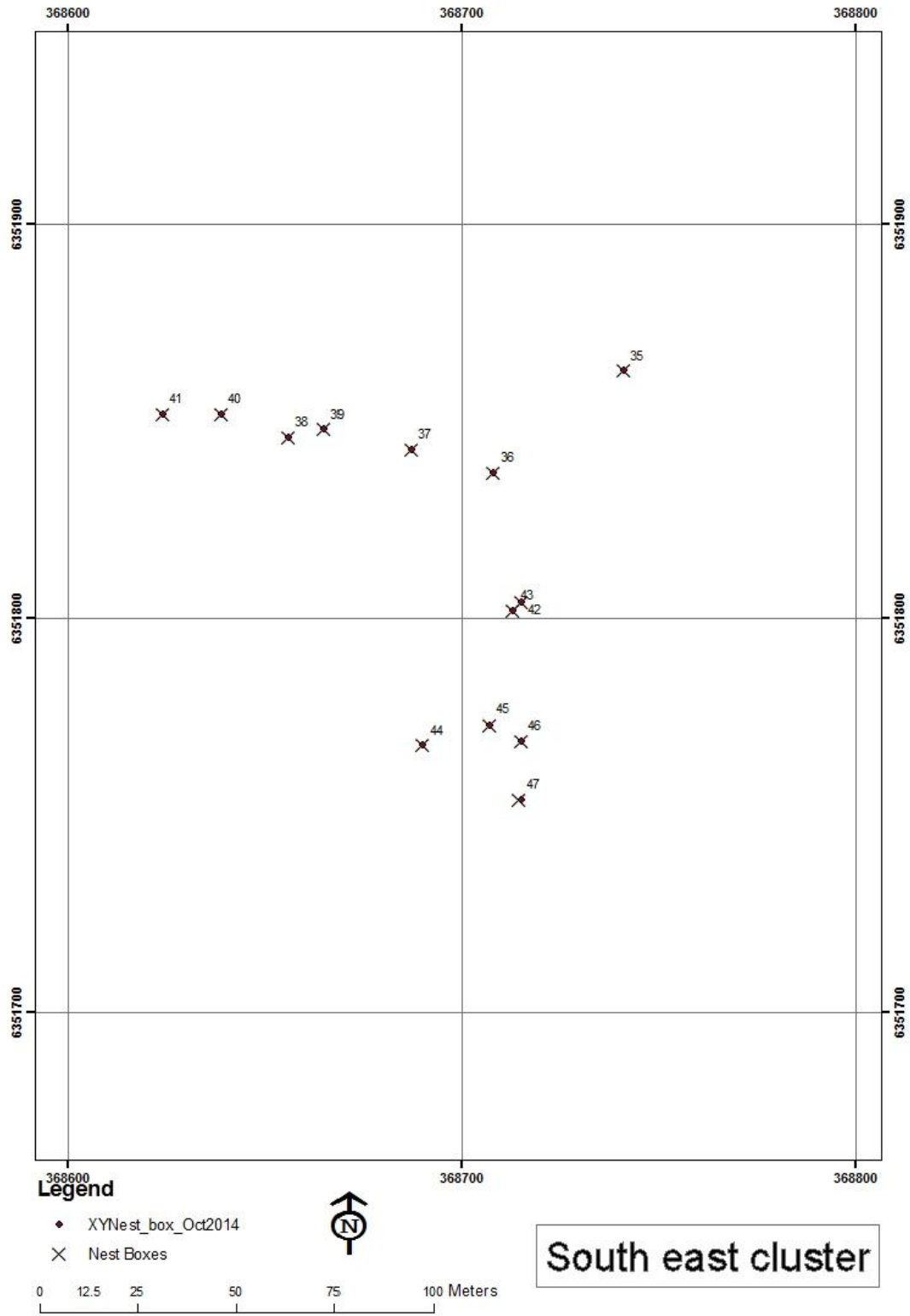
Appendix 1 - Nesting Box Location Maps











Appendix 2 - Nesting Box Details

Tag 1
Little Lorikeet Box in Spotted Gum
GDA 367959 6353151



Tag 2
Little Lorikeet Box in Stringybark
GDA 367938 6353174



Tag 3
Little Lorikeet Box in Spotted Gum
GDA 368020 6353052



Tag 4
Little Lorikeet Box in Spotted Gum
GDA 368039 6353008



Tag 5

Photo 4818
Little Lorikeet Box in Spotted Gum
GDA 368038 6353010



Tag 6

Little Lorikeet Box in Spotted Gum
GDA 368047 6353003



Tag 7

Squirrel Glider Box in Stringybark
GDA 367677 6351671



Tag 8


Microbat Box in Bloodwood
GDA 367682 6351646



<p>Tag 9</p> <p>Squirrel Glider Box in Stringybark GDA 367683 6351646</p>	
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<p>Tag 10</p> <p>Squirrel Glider Box in Stringybark GDA 367725 6351652</p>	
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<p>Tag 11</p> <p>Microbat Box in Bloodwood GDA 367730 6351641</p>	 A photograph showing a small, light-colored rectangular box attached to the trunk of a tree. The tree has a thick, dark, textured bark. The background is a dense forest with green foliage and other trees.
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<p>Tag 12</p> <p>Squirrel Glider Box in Bloodwood GDA 367749 6351630</p>	 A photograph showing a small, light-colored rectangular box attached to the trunk of a tree. The tree has a thick, dark, textured bark. The background is a dense forest with green foliage and other trees.
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Tag 13


Microbat Box in Stringybark
GDA 367758 6351630



Tag 14

Squirrel Glider Box in Stringybark
GDA 367758 6351656



<p>Tag 15</p> <p>Microbat Box in Bloodwood GDA 367740 6351678</p>	
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<p>Tag 16</p> <p>Squirrel Glider Box in Bloodwood GDA 367727 6351705</p>	
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Tag 17

Little Lorikeet Box in Bloodwood
GDA 367730 6351722



Tag 18

Little Lorikeet Box in Bloodwood
GDA 367750 6351690



Tag 19

Little Lorikeet Box in Bloodwood
GDA 367773 6351688



Tag 20

Little Lorikeet Box in Stringybark
GDA 367789 6351657



Tag 21

Little Lorikeet Box in Stringybark
GDA 367810 6351640



Tag 22

Little Lorikeet Box in Stringybark
GDA 367840 6351647



Tag 23

Little Lorikeet Box in Stringybark
GDA 367881 6351639



Tag 24

Little Lorikeet Box in Stringybark
GDA 367896 6351636



Tag 25

Little Lorikeet Box in Stringybark
GDA 367869 6351616



Tag 26

Little Lorikeet Box in Stringybark
GDA 367857 6351611



Tag 27

Little Lorikeet Box in Stringybark
GDA 367838 6351609



Tag 28

Little Lorikeet Box in Bloodwood
GDA 367781 6351641



Tag 29

Little Lorikeet Box in Bloodwood
GDA 367774 6351659



Tag 30

Little Lorikeet Box in Bloodwood
GDA 367756 6351684



Tag 31

Squirrel Glider Box in Spotted Gum
GDA 367707 6351825



Tag 32

Squirrel Glider Box in Spotted Gum
GDA 367683 6351816



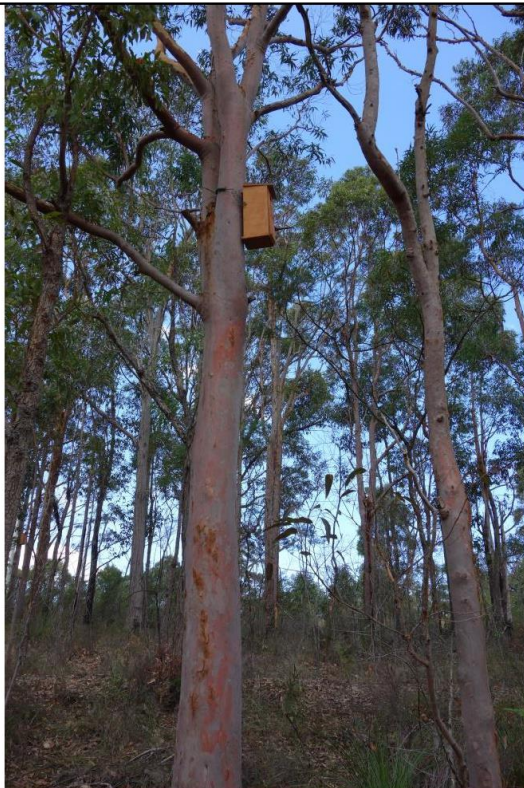
Tag 33

Squirrel Glider Box in Spotted Gum
GDA 367683 6351804



Tag 34

Squirrel Glider Box in Spotted Gum
GDA 367663 6351796



Tag 35

Squirrel Glider Box in Grey Gum
GDA 368741 6351863



Tag 36

Microbat Box in Stringybark
GDA 368708 6351837



Tag 37

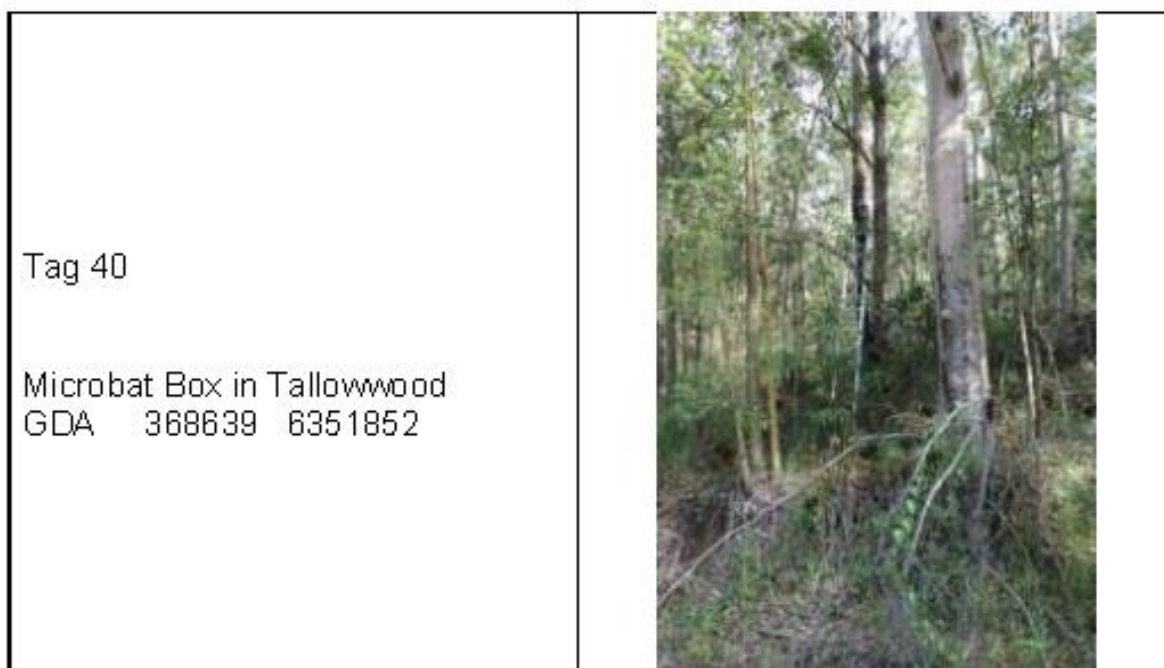
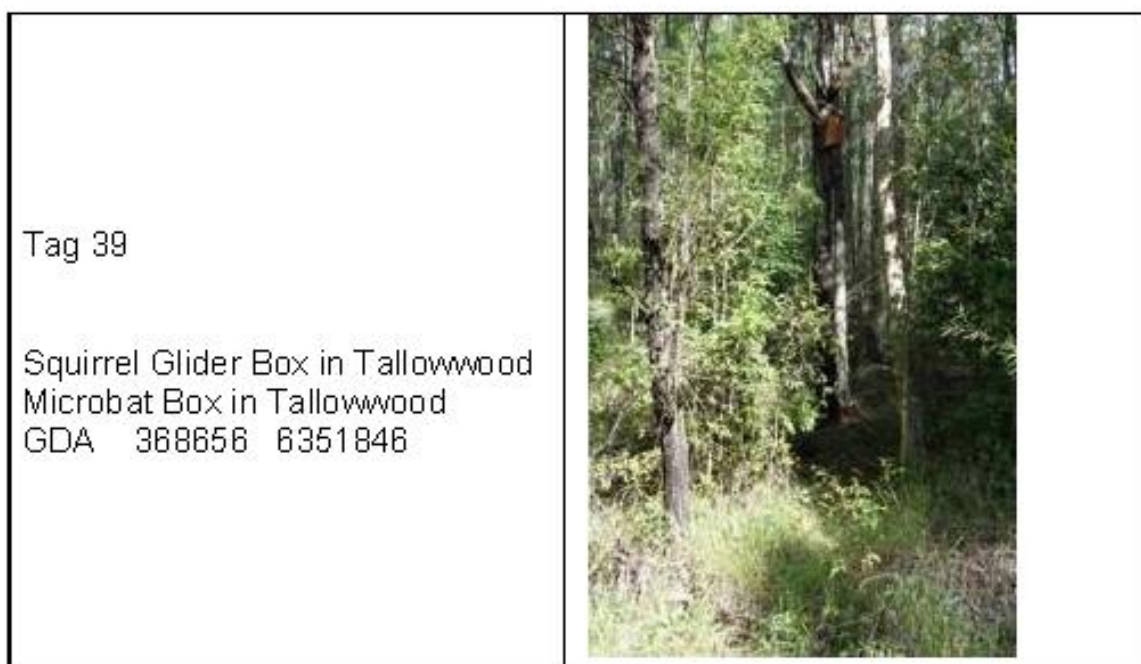
Squirrel Glider Box in Grey Gum
GDA 368687 6351843



Tag 38

Microbat Box in Stringybark
GDA 368665 6351848





Tag 41

Squirrel Glider Box in Tallowwood
GDA 368624 6351852



Tag 42

Microbat Box in Stringybark
GDA 368715 6351804



<p>Tag 43</p> <p>Squirrel Glider Box in Stringybark GDA 368713 6351802</p>	
<p>Tag 44</p> <p>Squirrel Glider Box in Spotted Gum GDA 368690 6351768</p>	

Tag 45

Squirrel Glider Box in Tallowwood
GDA 368707 6351773



Tag 46

Microbat Box in Spotted Gum
GDA 368715 6351769



Tag 47

Squirrel Glider Box in Spotted Gum
GDA 368713 6351753



Tag 48

Microbat Box in Stringybark
GDA 368057 6352711





Tag 49

Microbat Box in Stringybark
GDA 367683 6351804
GDA 368046 6352712



Tag 50
Microbat Box in Tallowwood
GDA 368033 6352733



<p>Tag 51</p> <p>Microbat Box in Stringybark GDA 368010 6352736</p>	
<p>Tag 52</p> <p>Microbat Box in Tallowwood GDA 368011 6352763</p>	

Tag 53

Microbat Box in Ironbark
GDA 367998 6352768



Tag 54

Microbat Box in Stringybark
GDA 367981 6352775





Tag 57

Microbat Box in Ironbark
GDA 367935 6352836



Tag 58

Squirrel Glider Box in Ironbark
GDA 368662 6352953



Tag 59

Squirrel Glider Box in Ironbark
GDA 368677 6352954



Tag 60

Squirrel Glider Box in Tallowwood
GDA 368677 6352974



Tag 61

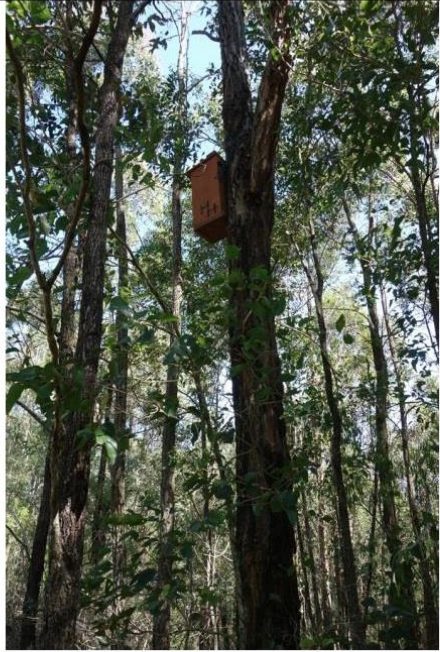
Squirrel Glider Box in Tallowwood
GDA 368675 6352981



Tag 62

Squirrel Glider Box in Ironbark
GDA 368674 6353008



<p>Tag 63</p> <p>Squirrel Glider Box in Ironbark GDA 368674 6353021</p>	
<p>Tag 64</p> <p>Squirrel Glider Box in Stringybark GDA 368649 6353054</p>	

Tag 65



Squirrel Glider Box in Ironbark
GDA 368604 6353060



Tag 66

Squirrel Glider Box in Tallowwood
GDA 368610 6353091



<p>Tag 67</p> <p>Squirrel Glider Box in Spotted Gum GDA 368580 6353088</p>	 A photograph showing a small, rectangular, light-colored box attached to the trunk of a tree. The tree has a light-colored, textured bark. The background shows a dense forest of tall trees with green foliage under a clear blue sky.
<p>Tag 68</p> <p>Squirrel Glider Box in Spotted Gum GDA 368566 6353100</p>	 A photograph showing a small, rectangular, light-colored box attached to the trunk of a tree. The tree has a light-colored, textured bark. The background shows a dense forest of tall trees with green foliage under a clear blue sky. In the bottom left corner, a person wearing a yellow hard hat and a blue shirt is partially visible.

Tag 69

Squirrel Glider Box in Stringybark
GDA 368554 6353106



Tag 70

Microbat Box in Stringybark
GDA 367710 6351655



Appendix 3 - Second Annual Nesting Box Inspection

Cluster	Number	Box type / Tree species	GDA	Observation
North west	Tag 1	Little Lorieet Box in Spotted Gum	GDA 367959 6353151	Ants
North west	Tag 2	Little Lorieet Box in Stringybark	GDA 367938 6353174	Leaves
North west	Tag 3	Little Lorieet Box in Spotted Gum	GDA 368020 6353052	2 Sugar gliders
North west	Tag 4	Little Lorieet Box in Spotted Gum	GDA 368039 6353008	Leaves with depression
North west	Tag 5	Little Lorieet Box in Spotted Gum	GDA 368038 6353010	Leaves and ants
North west	Tag 6	Little Lorieet Box in Spotted Gum	GDA 368047 6353003	1 Sugar glider
South west	Tag 7	Squirrel Glider Box in Stringybark	GDA 367677 6351671	Bird egg shell
South west	Tag 8	Microbat Box in Bloodwood	GDA 367682 6351646	
South west	Tag 9	Squirrel Glider Box in Stringybark	GDA 367683 6351646	
South west	Tag 10	Squirrel Glider Box in Stringybark	GDA 367725 6351652	Leaves
South west	Tag 11	Microbat Box in Bloodwood	GDA 367730 6351641	
South west	Tag 12	Squirrel Glider Box in Bloodwood	GDA 367749 6351630	Leaves with depression
South west	Tag 13	Microbat Box in Stringybark	GDA 367758 6351630	
South west	Tag 14	Squirrel Glider Box in Stringybark	GDA 367758 6351656	
South west	Tag 15	Microbat Box in Bloodwood	GDA 367740 6351678	
South west	Tag 16	Squirrel Glider Box in Bloodwood	GDA 367727 6351705	
South west	Tag 17	Little Lorieet Box in Bloodwood	GDA 367730 6351722	Reinstalled box at new location
South west	Tag 18	Little Lorieet Box in Bloodwood	GDA 367750 6351690	Reinstalled box at new location
South west	Tag 19	Little Lorieet Box in Bloodwood	GDA 367773 6351688	Reinstalled box at new location
South west	Tag 20	Little Lorieet Box in Stringybark	GDA 367789 6351657	Reinstalled box at new location
South west	Tag 21	Little Lorieet Box in Stringybark	GDA 367810 6351640	Reinstalled box at new location
South west	Tag 22	Little Lorieet Box in Stringybark	GDA 367840 6351647	Reinstalled box at new location
South west	Tag 23	Little Lorieet Box in Stringybark	GDA 367881 6351639	Reinstalled box at new location
South west	Tag 24	Little Lorieet Box in Stringybark	GDA 367896 6351636	Reinstalled box at new location
South west	Tag 25	Little Lorieet Box in Stringybark	GDA 367869 6351616	Reinstalled box at new location
South west	Tag 26	Little Lorieet Box in Stringybark	GDA 367857 6351611	Reinstalled box at new location

Cluster	Number	Box type / Tree species	GDA	Observation
South west	Tag 27	Little Lorikeet Box in Stringybark	GDA 367838 6351609	Reinstalled box at new location
South west	Tag 28	Little Lorikeet Box in Bloodwood	GDA 367781 6351641	Reinstalled box at new location
South west	Tag 29	Little Lorikeet Box in Bloodwood	GDA 367774 6351659	Reinstalled box at new location
South west	Tag 30	Little Lorikeet Box in Bloodwood	GDA 367756 6351684	Reinstalled box at new location
South west	Tag 31	Squirrel Glider Box in Spotted Gum	GDA 367707 6351825	Reinstalled box at new location
South west	Tag 32	Squirrel Glider Box in Spotted Gum	GDA 367683 6351816	Reinstalled box at new location
South west	Tag 33	Squirrel Glider Box in Spotted Gum	GDA 367683 6351804	Reinstalled box at new location
South west	Tag 34	Squirrel Glider Box in Spotted Gum	GDA 367663 6351796	Reinstalled box at new location
South east	Tag 35	Squirrel Glider Box in Grey Gum	GDA 368741 6351863	
South east	Tag 36	Microbat Box in Stringybark	GDA 368708 6351837	
South east	Tag 37	Squirrel Glider Box in Grey Gum	GDA 368687 6351843	Nil
South east	Tag 38	Squirrel Glider Box in Tallowwood	GDA 368656 6351846	Leaves
South east	Tag 39	Microbat Box in Stringybark	GDA 368665 6351848	
South east	Tag 40	Microbat Box in Tallowwood	GDA 368639 6351852	
South east	Tag 41	Squirrel Glider Box in Tallowwood	GDA 368624 6351852	
South east	Tag 42	Microbat Box in Stringybark	GDA 368715 6351804	
South east	Tag 43	Squirrel Glider Box in Stringybark	GDA 368713 6351802	
South east	Tag 44	Squirrel Glider Box in Spotted Gum	GDA 368690 6351768	Leaves
South east	Tag 45	Squirrel Glider Box in Tallowwood	GDA 368707 6351773	3 Sugar gliders
South east	Tag 46	Microbat Box in Spotted Gum	GDA 368715 6351769	
South east	Tag 47	Squirrel Glider Box in Spotted Gum	GDA 367707 6351825	
North west	Tag 48	Microbat Box in Stringybark	GDA 368057 6352711	
North west	Tag 49	Microbat Box in Stringybark	GDA 368046 6352712	
North west	Tag 50	Microbat Box in Tallowwood	GDA 368033 6352733	
North west	Tag 51	Microbat Box in Stringybark	GDA 368010 6352736	
North west	Tag 52	Microbat Box in Tallowwood	GDA 368011 6352763	
North west	Tag 53	Microbat Box in Ironbark	GDA 367998 6352768	
North west	Tag 54	Microbat Box in Stringybark	GDA 367981 6352775	
North west	Tag 55	Microbat Box in Stringybark	GDA 367964 6352795	

Cluster	Number	Box type / Tree species	GDA	Observation
North west	Tag 56	Microbat Box in Stringybark	GDA 367951 6352807	
North west	Tag 57	Microbat Box in Ironbark	GDA 367935 6352836	
North east	Tag 58	Squirrel Glider Box in Ironbark	GDA 368662 6352953	
North east	Tag 59	Squirrel Glider Box in Ironbark	GDA 368677 6352954	2 Sugar gliders
North east	Tag 60	Squirrel Glider Box in Tallowwood	GDA 368677 6352974	
North east	Tag 61	Squirrel Glider Box in Tallowwood	GDA 368675 6352981	Leaves
North east	Tag 62	Squirrel Glider Box in Ironbark	GDA 368674 6353008	
North east	Tag 63	Squirrel Glider Box in Ironbark	GDA 368674 6353021	Leaves with depression
North east	Tag 64	Squirrel Glider Box in Stringybark	GDA 368649 6353054	
North east	Tag 65	Squirrel Glider Box in Ironbark	GDA 368604 6353060	2 Sugar gliders
North east	Tag 66	Squirrel Glider Box in Tallowwood	GDA 368610 6353091	2 Sugar gliders
North east	Tag 67	Squirrel Glider Box in Spotted Gum	GDA 368580 6353088	
North east	Tag 68	Squirrel Glider Box in Spotted Gum	GDA 368566 6353100	Leaves with depression
North east	Tag 69	Squirrel Glider Box in Stringybark	GDA 368554 6353106	
South west	Tag 70	Microbat Box in Stringybark	GDA 367710 6351655	