

# HFNC Bear State Forest fauna nest box report 20 Nov. 2016

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**Participants:** Rod Bird & Diane Luhrs, Reto Zollinger and Hillary Turner. Members from Hamilton left the Visitor Centre at 9 am and met Hilary at East-West Rd/Hallams Rd before entering the Bear SF.

## Background

On 20-21 April 2012 ten nest boxes were installed at Sites 2, 3, 5, 6 & 10 (pairs of a large and a small box) in the Bear SF. Boxes were moved from Sites 6 & 10 to Sites 14 & 15 in April 2014.

John Burtonclay from Mandurang constructed the boxes ([www.nestboxenviro.net.com](http://www.nestboxenviro.net.com))

The fauna nest boxes were of 2 types, both with a 40 mm entry hole specific for our target species:

- Tuan/Glider box – 370 mm x 197 mm x 235 mm internal spaces (H x W x D), with top-hinged lid.
- Bush box – 271 mm x 195 mm x 157 mm internal spaces (H x W x D), with side opening.

The aim was to survey small mammals, hopefully including Brush-tailed Phascogale, Sugar Glider, Pygmy Possum and *Antechinus* spp. Boxes were sited in pairs 10-20 m apart to allow Brush-tailed Phascogales the chance to use a box in areas where the dominant Sugar Gliders were present (gliders may not allow another glider family to live close by but might allow phascogale to do so). Bees were a problem in some large nest boxes. Wool carpet was stapled on the upper walls and/or under the lid of the large boxes. Two boxes also had a movable flap fitted over the inside of the hole to exclude bees.

## Inspection of mammal nest boxes: results from Nov. 2012 to Nov. 2016

In 2015 we acquired a pole camera unit to enable us to view (and photograph) the inside of the boxes from the ground, obviating the use of a ladder. This practice was continued in 2016.

**Site 2** – 1.2 km from Bear SF sign on Hallams Tk. [Waypoint 003; gps 37-22-35/142-02-25]

Habitat – dense *E. baxteri* forest with *X. minor* understorey (unburned >60 years).

- Nov. 2012 – bees in the large box were sprayed with insecticide. No bees in the small box.
- 7 May 2013 – dead bees & honeycomb was removed from the large box and carpet was stapled under the lid and the upper 150 mm section of walls.
- 19 Nov. 2013 – there were leaves and several Sugar Gliders in the large box but not in the small box. No bees found in either box.
- Apr. 2014 – no animals were seen in either box. Green leaves were among old leaves in the large box. No bees in either box.
- 25 Nov. 2014 – no leaves in the small box; fresh leaves with old leaves in the large box. No bees in either box.
- 21 Nov. 2015 – there were green leaves and 2 or more Sugar Gliders in the large box. The small box had some green leaves ~50 mm depth but no animals. No bees in either box.
- 21 Nov. 2016 – the large box had 2 or more Sugar Gliders (Photo 5), despite being upset from the top peg and resting at 90 degrees to the trunk (Photos 1 & 2). It was reset (Photo 3), apparently without disturbing the occupants. The small box had 10 cm of fresh green leaves and may have had 2 or more animals present but the image is not clear (Photo 6). Bees were seen but not in the boxes.

**Site 3** – 2.7 km from Bear SF sign on Hallams Tk. [Waypoint 005; gps 37-21-46/142-02-2]

Habitat – a valley with *E. leucoxydon*, *E. melliodora*, *E. viminalis*, *E. baxteri*, *B. marginata*.

- Nov. 2012 – there were no bees in either box.
- 7 May 2013 – there were no bees in either box. Carpet was stapled under the lid of the large box.
- 19 Nov. 2013 – the large box contained leaves and Sugar Gliders. Many leaves were in the small box. No bees were found in either box.
- Apr. 2014 – no animals were found in either box but green leaves were among the old leaves in the large box. Only dry leaves were in the small box. No bees in either box.
- 25 Nov. 2014 – old leaves in the small box; fresh leaves & old in the large box. No bees in either.
- 21 Nov. 2015 – there were green leaves and 2 or more Sugar Gliders in the large box. The small box had some dead leaves ~50 mm depth but no animals. No bees found in either box.
- 21 Nov. 2016 – the large box had 3 or more Sugar Gliders (Photo 7); the small box had old and fresh leaves and possibly Sugar Gliders but the image is not clear (Photo 8). No bees were seen.

**Site 5** – west of fire dam on track to McAdams Rd, in a flat. [Waypoint 008; gps 37-21-20/142-01-30]

Habitat – *E. melliodora*, *E. baxteri*, *B. marginata*, *A. mearnsii* and *X. Minor* and many logs.

- Nov. 2012 – bees in the large box were sprayed with insecticide. The small box was empty.
- 7 May 2013 – dead bees & honeycomb was removed from the large box. Carpet was stapled under the lid and a 50 mm circular, black-painted sheep ear tag was loosely attached inside the box on a screw, over the 40 mm entry hole, to deter bees from entering.
- 19 Nov. 2013 – green-coloured but dry gum leaves filled a depth of about 6 cm in the large box but there were no animals present. The small box was empty. No bees in either box.
- Apr. 2014 – green leaves were found among the dry leaves in the large box but no animals were seen. There were no leaves in the small box. No bees in either box.
- 25 Nov. 2014 – no leaves or animals in small box or old box. No bees in either box.
- 21 Nov. 2015 – there were green leaves and 2 or more Sugar Gliders in the large box. The small box had some dead leaves ~10 mm depth but no animals. No bees in either box.
- 21 Nov. 2016 – the large box had 2 or more Sugar Gliders (Photo 9), as did the small box (Photo 10), the first time the animals had been seen in small boxes.

**[Site 6** – 0.9 km on 2011 Burn Tk from jn 2011 Burn Tk/McAdams Tk. [gps 37-20-51/142-01-40]

Habitat – *E. leucoxyton* & *E. baxteri* and *X. minor* in an area partially burned in 2011.

- Nov. 2012 – bees in the large box were sprayed with insecticide. No bees in the small box.
- 7 May 2013 – dead bees & honeycomb was removed from the large box and carpet was stapled under the lid and a flap was fitted over the hole (as for Site 5).
- 19 Nov. 2013 – both boxes were devoid of leaves or animals. No bees in either box.
- Apr. 2014 – no leaves, bees or mammals were found in either box. Both were shifted to Site 14.

**[Site 10** – 0.7 km N on Hallams Tk from McAdams Tk jn, then 250 m west. [gps 37-20-50/142-02-12]

Habitat – *E. leucoxyton*, *E. melliodora*, *E. viminalis* & *B. marginata* open woodland with *X. minor*.

- Nov. 2012 – no bees in either box.
- 7 May 2013 – there were no bees in either box. Carpet was stapled under the lid of the large box.
- 19 Nov. 2013 – both boxes were empty of leaves or animals. No bees in either box.
- Apr. 2014 – no leaves, bees or mammals were found in either box. Both were shifted to Site 15.

**Site 14** – 1.3 km N on Hallams Tk from McAdams Tk jn. [Waypoint 019; gps 37-20-32/142-02-31]

Habitat – *E. leucoxyton* & *E. melliodora* open woodland

- 25 Nov. 2014 – both boxes were empty of leaves or animals. No bees in either box.
- 21 Nov. 2015 – there were no mammals, bees or leaves present in the large or small boxes.
- 21 Nov. 2016 – the large box had fresh leaves present and possibly 2 gliders present (Photo 11). The small box had some leaves but no animals (Photo 12).

**Site 15** – 1.9 km on Hallams Tk from McAdams Tk jn. [Waypoint 020; gps 37-20-32/142-02-48]

Habitat – *E. leucoxyton* open woodland adjacent to *E. baxteri* forest & *E. camaldulensis* creek line

- 25 Nov. 2014 – both boxes were empty of leaves or animals. No bees in either box.
- 21 Nov 2015 - There were no mammals, bees or leaves present in the large or small boxes. There were some chew marks around the entrance hole of the large box, probably from Cockatoos.
- 21 Nov. 2016 – there were no leaves, bees or mammals in either box (Photos 11 & 12).

#### **Conclusions to date:**

1. The action taken to exclude bees from the large boxes has worked. Sugar Gliders successfully negotiated the flap in the large box at Sites 5 & 14. The flap alone may be enough to exclude bees.
2. Bees have not set up in the small boxes, all of which were left untreated.
3. Sugar Gliders were the only mammals to use the boxes and they preferred the large boxes, taking green leaves inside for bedding.
4. Leaves were found in 4 small boxes, proving that Sugar Gliders will attempt to nest close to another nest site (perhaps juveniles from the same family?) but no animals were present.
5. Boxes at Site 15 in Yellow Gum woodland were unused. It was hoped that Brush-tailed Phascogales might be present there or at Site 14 but no sign was found.
6. The small boxes are not recommended for small mammals.
7. The pole camera used to inspect the interior of the boxes did not provide high quality images, and it was not possible to detect animals under the leaves, but it did obviate the need for a ladder.



Photo 1. Site 2, Large Box found tipped over



Photo 2. Site 2, using the pole-mounted camera



Photo 3. Site 2, re-erecting the Large Box



Photo 4. Site 2, inspecting the re-erected Large Box



Photo 5. Site 2, Sugar Gliders in the Large Box



Photo 6. Site 2, Sugar Gliders in the Small Box??

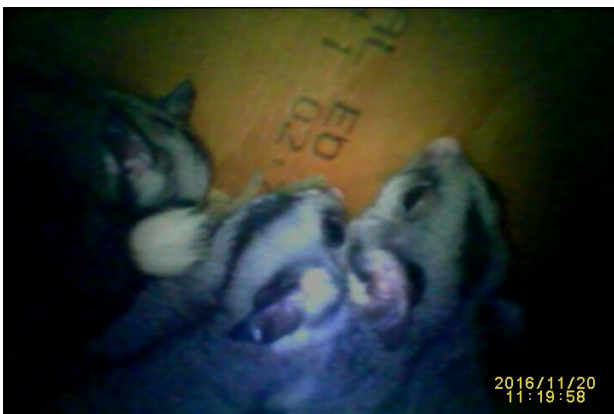


Photo 7. Site 3, Sugar Gliders in the Large Box



Photo 8. Site 8, Sugar Gliders in the Small Box??



Photo 9. Site 5, Sugar Gliders in the Large Box



Photo 10. Site 5, Sugar Gliders in the Small Box



Photo 11. Site 14, Sugar Gliders in the Large Box??



Photo 12. Site 14, leaves in the Small Box



Photo 13. Site 15, empty Large Box



Photo 14. Site 15, a spider in the Small Box



We found many *Caladenia tentaculata* in flower and the *Brunonia australis* were blooming on Lookout Hill where, unfortunately, we also found (and pulled up) 700 African Weed orchids.