

## Bats at Organ Pipes NP, 29 Oct. 2017

The monitoring set for 8 Oct. had to be cancelled due to dangerously wild winds, and we reassembled on 29 Oct to give it another try. Just Dani and me to start with, so only one ladder. Gould's in box 14:



Along came Michelle, then two casual park visitors, Kim & Phil Seeley, who stopped for a little show-and-tell, and stayed all afternoon to help. Kim:



Phil helped me with the ladder, then scribed for me, too.



The same Brushtail was in glider box 7, as in August – a very tight squeeze!



Bat assessing got started in the Visitor Centre while Dani and I were still checking boxes below.



Michelle scribed for Dani as well as helping with box monitoring.



Our ABS secretary Pia arrived to process bats with husband Alex.





Tanya Loos drove from Daylesford, Eva Reda took time off from 3<sup>rd</sup> year microbiology exam preparation



There were 8 Freetails, nearly all first-timers, so Dani micro-chipped them.



And of course, Lindy



Kim scribed for Anita.



We only got two Large Forest bats, as they were in the multi-chamber box 46, and kept wriggling around the bark I used to try to extract them, so some were left in the box. This one had a tick on his right forearm.



It was all done soon after 5:30, so everyone went off home but Tanya and me. We sat about chatting for a while, then as Tanya had a long drive home, there was just me. Had to wait a long time for the ravens and magpies to finally settle down so it was safe to release the bats. Finally got started at 8:30 p.m.



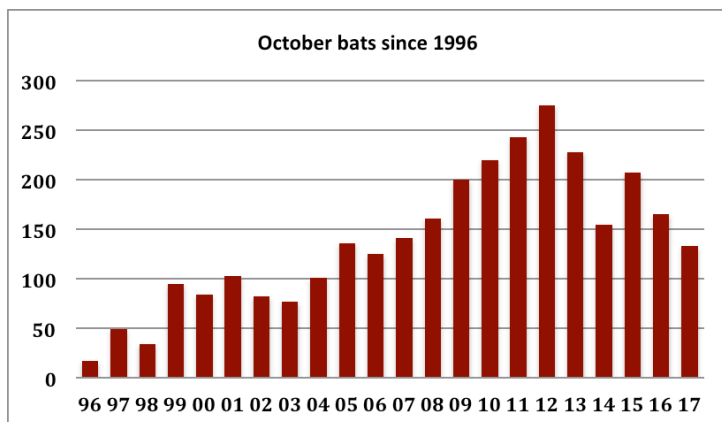
Patient little bats, snoozing away the boring waiting time in their bags.



This Freetail decided life was a drag, and just flopped on the bag. I put it on my shoulder and it flew off in a minute or so.

### October bats

Bats peaked in 2012 at 275, with far more Gould's and more Freetails, too. They have been in decline ever since, so the years of biggest workload are over. This month we got 133, a bit less than half the peak figure.



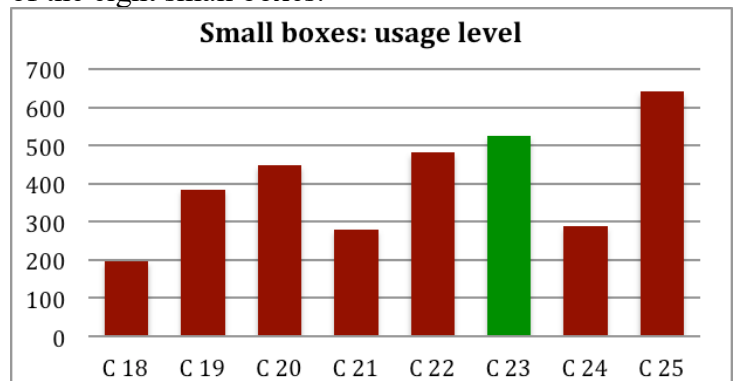
Box	Bat	Species	Adult		Esc	Left in box
			M	F		
C42	21	Gould's	2	19	1	
	2	Freetail	1	1		
C23	26	Gould's	6	20	1	
C14	21	Gould's		21		
C03	14	Gould's		14	1	
C39	11	Gould's		11	1	
C35	8	Gould's	1	7		
C46	4	Gould's	4			1 Cg 1 Vd
	1	Lge Forest	1			
C17	4	Freetail	1	3		
C06	3	Gould's		3		
C24	3	Gould's	3		1	
C45	3	Gould's	1	1*		
C15	2	Freetail		2		
C20	2	Gould's	2			
C27	2	Gould's	2			
C30	2	Gould's	2	1		
C13	1	Gould's	1			
C21	1	Lge Forest	1			
C33	1	Gould's	1			
C44	1	Gould's	1			
C36					1	
	<b>133</b>	<b>Totals</b>	<b>30</b>	<b>102</b>	<b>6</b>	<b>2</b>

\* 1 female dead, 1 living

The dead bat was PIT-tagged, a female tagged in Feb., so didn't reach her first birthday. Two of the escapees sought refuge in box 6, where we captured them a few minutes later. Others were lost sight of – we may have found them in another box, or maybe not.

### Box 23

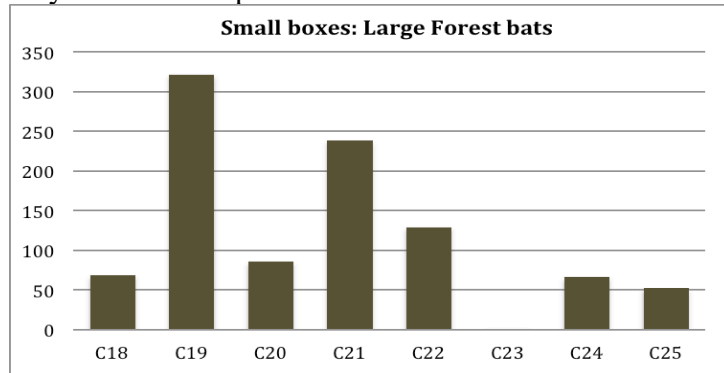
This is one of the small boxes, with smaller internal volume and smaller (12mm) entrance slits, intended to attract smaller bats (Large Forest, Chocolate Wattled, etc). This month it had 26 Gould's crammed inside, plus one more that escaped. It is the second-most used of the eight small boxes.



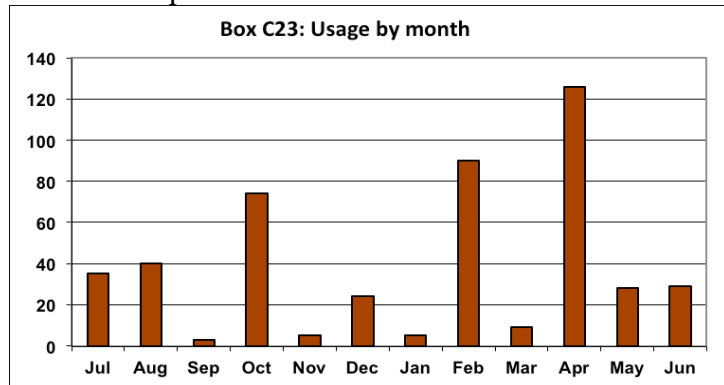
As a design to attract smaller bats, it is an abject failure. Only one Large Forest bat has ever been found in it. The species really likes boxes 19 and 21. No Chocolate



Wattled bats have used it at all. Their favourites are 22 and 19. C23 is the only SW-facing box of the 8, so maybe that is the problem.



It is most favoured in April, so this big group in Oct. is a bit of a surprise.



### Old males

Three of the Gould's were males banded 4-5 years ago. 93025 (Feb. '13) and 92969 (Dec. '13) have been captured 19 times and 92390 (Dec. '12) 13 times. 93025 was rated as a sub-adult in Feb 2013, was still with the colony all of that year, and has been captured each April since, and usually also in Feb., Oct. & Dec. He would definitely be one of the breeding males, and seems to be home-grown, as this is his birth colony.

93025	Feb	Apr	Jun	Aug	Oct	Dec
2013	Y	Y	Y	Y	Y	Y
2014		Y			Y	Y
2015	Y	Y			Y	Y
2016	Y	Y				
2017	Y	Y		Y	Y	
Total	4	5	1	2	4	3

That seems true of 92969 as well, banded as a juvenile.

92969	Feb	Apr	Jun	Aug	Oct	Dec
2013						Y
2014	Y	Y			Y	Y
2015	Y	Y	Y		Y	Y
2016	Y	Y			Y	Y
2017	Y	Y	Y	Y	Y	
Total	4	4	2	1	4	4

92390 was banded as an adult, and has generally been absent in April, breeding season, but always reappears in October. A bit harder to explain.

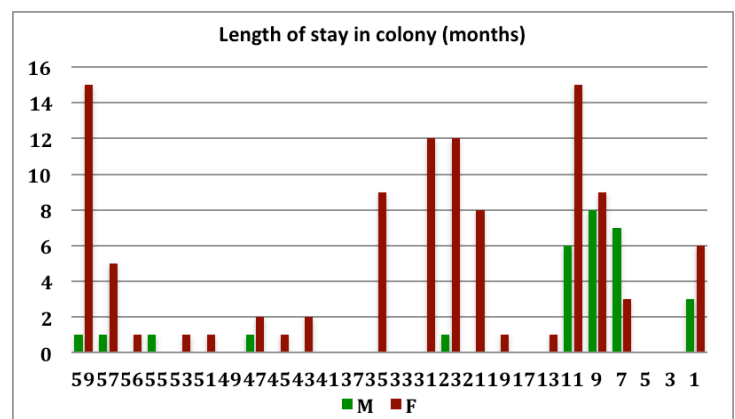
92390	Feb	Apr	Jun	Aug	Oct	Dec
2012						Y
2013	Y	Y		Y	Y	
2014					Y	Y
2015	Y				Y	
2016	Y				Y	Y
2017					Y	
Total	3	1	0	1	4	3

### Community structure

This month completes five years since banding recommenced in Dec. 2012. Most months we find a mix of age cohorts, and this month is no different. Interesting that there were hardly any males over one year old. Nearly all the young males leave home as adolescents and never return. A very few become members of the long-term adult breeding population. Far more females remain in their birth colony, plus others that immigrate when dispersing from birth colonies elsewhere.

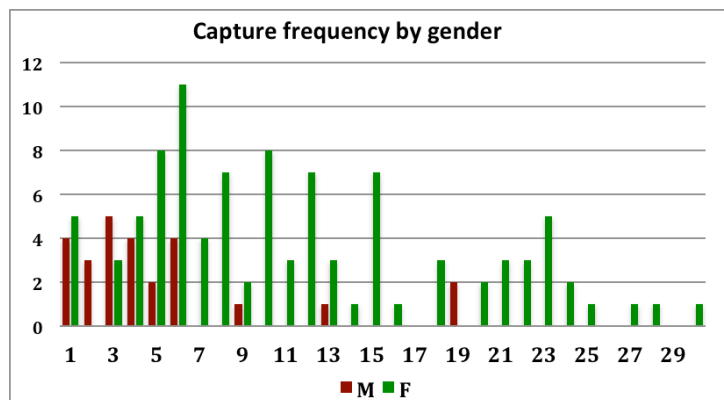
Age in Years	Bats	Male	Female	F/M
<1	57	24	33	1.4
1<2	22	0	10	
2<3	21	1	33	33.0
3<4	6	1	5	5.0
4<5	10	2	8	4.0
5+	16	1	15	15.0
Total	133	29	104	3.6

The usual mix of 5+ 4, 3, 2, 1 year-olds and adolescents. The old males listed above are the short green columns at the left of the chart. 15 females banded in Dec. '12 are still with us.



The contrast between males and females is even stronger when we look at capture frequency. All the bats cap-

tured 20+ times have been females, and nearly all the males were captured fewer than 10 times. Most would be last summer's adolescents about to depart to seek their fortunes out in the big world.



### Bat clans

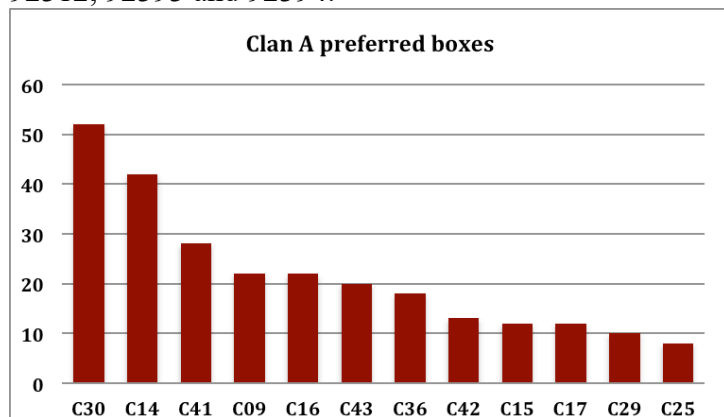
For the past year I've been looking at who roosts with whom, searching for patterns in bat friendships, and have found three "clans" of bats, which I have labeled A, B & C: within a clan, the bats often roost together. And members of any one clan almost never roost with members of the other two clans. Just recently I've examined which boxes are used preferentially by each clan.

Clan A strongly prefers to gather its members in boxes 30 and 14, clan B in boxes 42, 7 and 16; clan C in boxes 1 and 39. Consternation recently as box 1 has been taken down for repairs.

The three elders of clan C are bats 92322, 92323 and 92329. This month they were found in boxes 3, 39 and 6. Box 6 had three bats in it, two of which were seen to move in after escaping from other boxes, one of them from box 39.

Clan A elders were gathered in boxes 14 and 35: bats 91907, 92266, 92382 and 92386.

Clan B elders were all in the big group in box 42; bats 92312, 92393 and 92394.

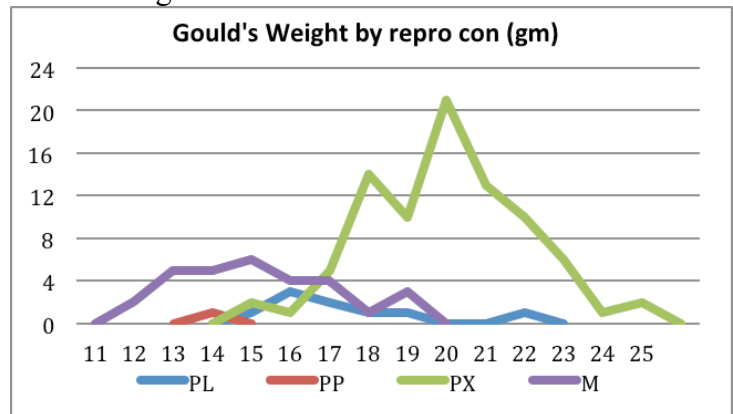


The data for the above chart is almost entirely from bats banded in Dec. 2012 – all now over 5 years old and "elders" of the colony. Clan A seems to have more members, and stronger relationships than the other two,

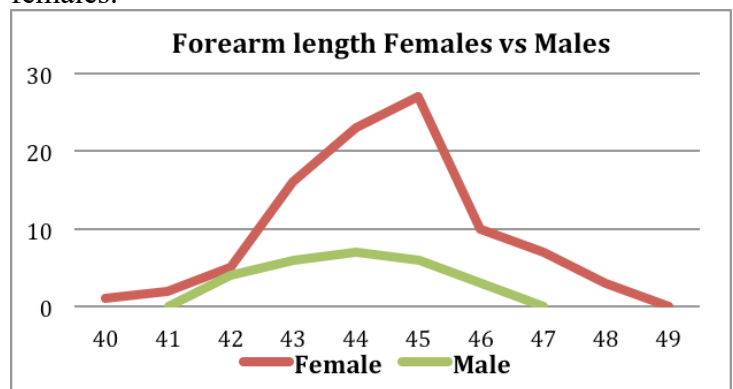
but the pattern of which bats tend to be found roosting together has persisted for the entire five years.

### Pregnant bats

October is the month when female Gould's are detectably pregnant, with twin bulges. 86 Gould's were judged to be pregnant, another 9 possibly post-lactating (though the weights of some of them suggest otherwise) and one prepartous. A female Gould's is normally 14 to 16 grams when not pregnant, and they put on a lot of weight near full-term, far more as a percentage of normal weight than do humans.



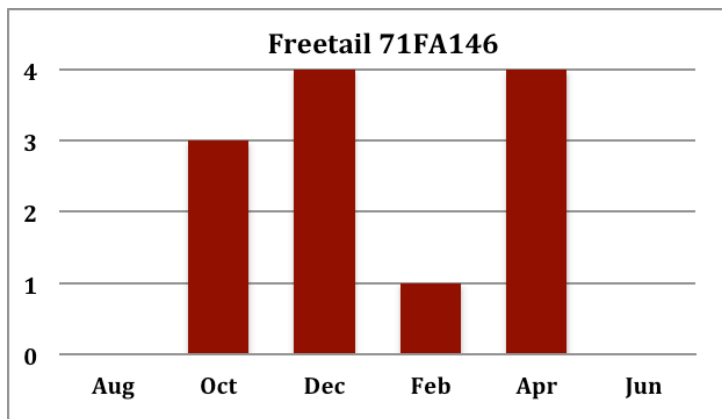
The chart shows males spread from 12 to 19 grams – 19 is very unusual for a male; and the pregnant females from 15 to 25 grams. 6 were 23 grams, 1 was 24 and 2 were 25 grams, about 40% heavier than when not pregnant. This is equivalent to a human female normally 60 kg ballooning out to 84 kg near full-term pregnancy, an amazing weight increase. There is very little overlap between males, and full-term pregnant females.



By contrast, forearm lengths overlap completely. Churchill's *Australian Bats* has Victorian Gould's averaging 43.5 mm, and ranging from 35 to 47 mm. Our bats averaged 45, and ranged from 40 to 48 mm. Males are very slightly smaller on average than females.

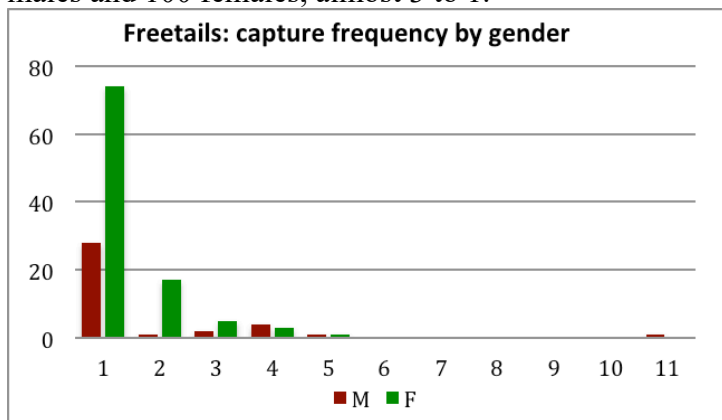
### Freetailed bats

This month we found 8 Freetails, 6 young females, one young male and one old male with PIT-tag 71FA146. He has been found in one of the boxes 11 times now, most often in Oct.-Dec., then April.

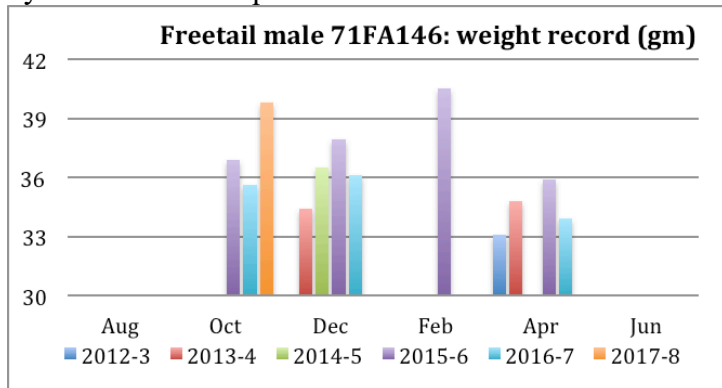


This is very different from the pattern we see with the Gould's, of females being captured far more often than any males.

At this stage, 136 Freetails have been PIT-tagged, 36 males and 100 females, almost 3 to 1.



But nearly all the females have appeared once only, and by far the most frequent visitor is this male.



His weight record is a bit odd: loses weight in April, but heaviest in Feb and Oct.

**Next box check: Sunday 17 Dec. 12 noon**