

## Bats, Organ Pipes NP 16 Dec. 2018

In the three days prior to our bat boxing, Melbourne airport recorded 60 mm of rain, but the 16<sup>th</sup> was dry and windless, just right. We had three ladders, so Steve, Dani and I collected the bats. I found a somewhat mashed orb weaver on the rim of C43



C42 had a large assembly of Gould's, mainly mums and pups, with 3 Freetails



And C44 had just a small group of Gould's



C27 held a big surprise: a male Eastern Broadnosed bat, *Scotorepens orion*, the first new species in over a decade.



There were nine female bats banded at our first banding session in Dec. 2012, this one being 92322



Steve thought he'd try a new arrangement of tables: sets of hexagons with a bat-handler, scribe and computer checker, to put some order into the chaos. It worked

very well. Anita and Caroline at the left table, Emma Hood scribing



The next one had Veronica Peric handling bats and Peter Blyth scribing



Emmi van Harten at this one, handling bats, Kerry Borkin (NZ) managing the computer, Ann Templar (UK) scribing



Danielle and Nathan handling bats at this one, Emma Window managing the computer and Michael Crain scribing



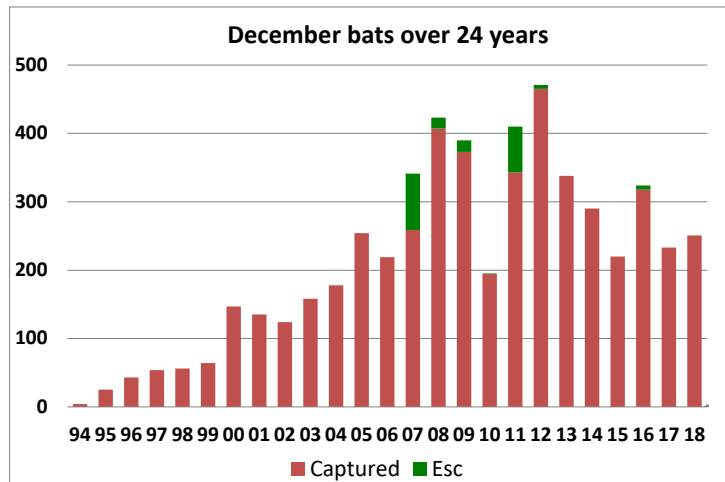
In October we were uncertain whether there would be any breeding this year, as none of the females seemed definitely pregnant. But it just seems to have got started much later than usual. There were 147 pups altogether this month.

Box	Bat	Species	Adult		Juvenile		No sex
			M	F	M	F	
C45	95 1	Gould's Broadnos	3 1	36	25	16	15
C06	59	Gould's	1	19	22	15	
C27	39	Gould's		15	13	10	1
C42	29 3	Gould's Freetail	3	11 3	10	5	
C41	17	Gould's		6	5	4	2
C07	5	Gould's		4	1		
C40	5	Gould's		3		1	
C44	7	Gould's	2	3			2
C46	3	Gould's	3				
C17	2	Gould's	2				
C15	1	Gould's	1				
C20	1	Gould's	1				
C25	1	Gould's	1				
C33	1	Gould's	1				
C34	1	Gould's	1				
C38	1	Gould's	1				
	<b>251</b>	<b>Totals</b>	<b>21</b>	<b>100</b>	<b>76</b>	<b>51</b>	<b>20</b>

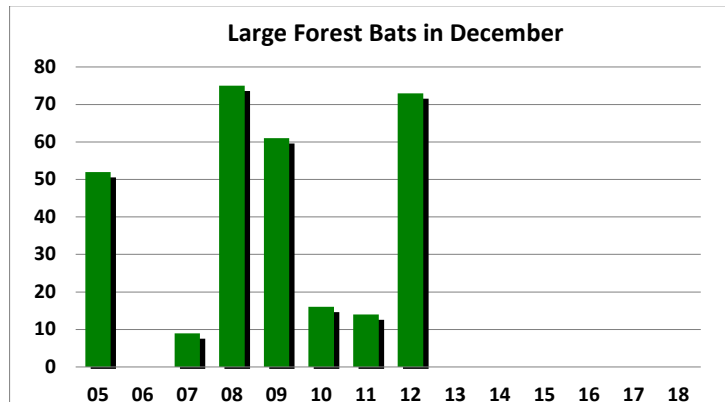
Not only was birthing very late, given 79 lactating females, but one Gould's female in C7 had not yet given birth and was judged to be "heavily pregnant". Most of the small attached young were examined for gender, but this was not recorded for 20 of them. As is about usual for this time of year, females outnumbered males 5:1

### December bats

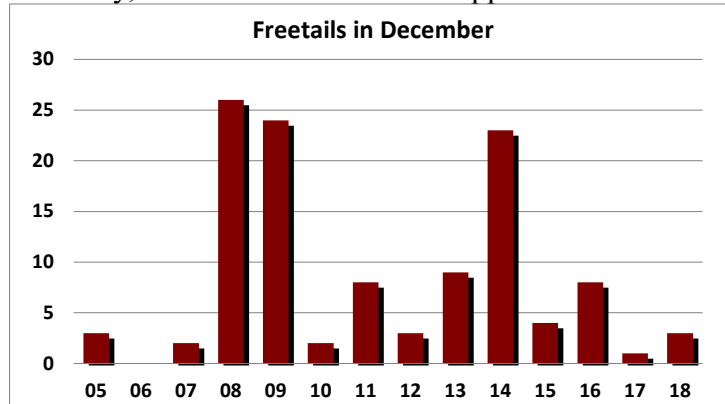
Bat capture in December peaked in 2012, and has fluctuated on a downward trend since, from multiple causes.



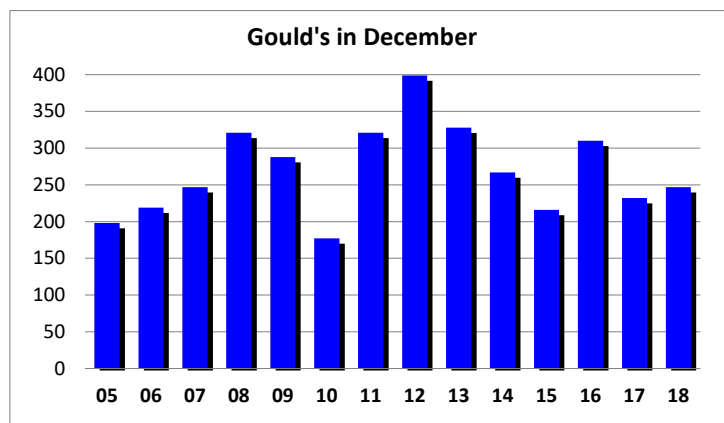
One is the disappearance of Large Forest Bats in Dec. They used to often breed in the boxes in summer, and had a substantial presence, up to 75 of them, but none at all since 2012



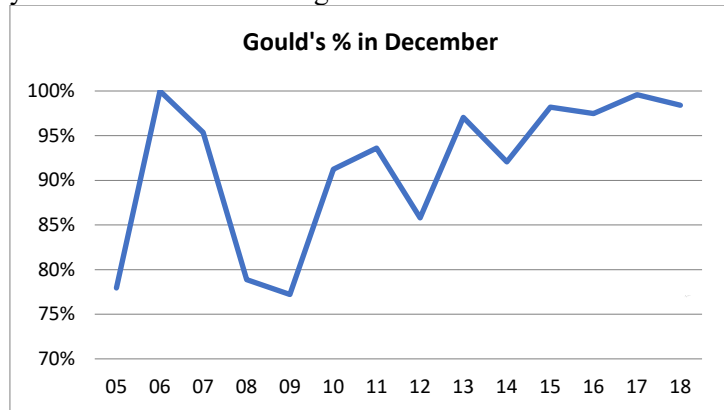
Similarly, Freetails have all but disappeared in summer.



The Gould's have also declined, but much less spectacularly than appears from the total bats chart.

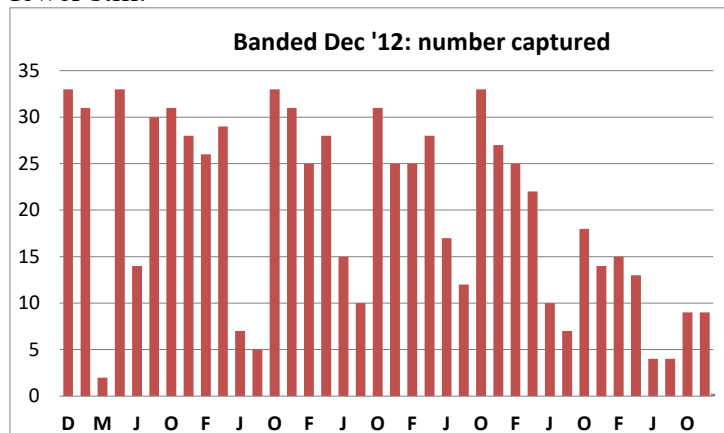


The abandonment of the boxes by other species, means that Gould's now dominate them more completely in summer, as you can see from the rising trend since 2009

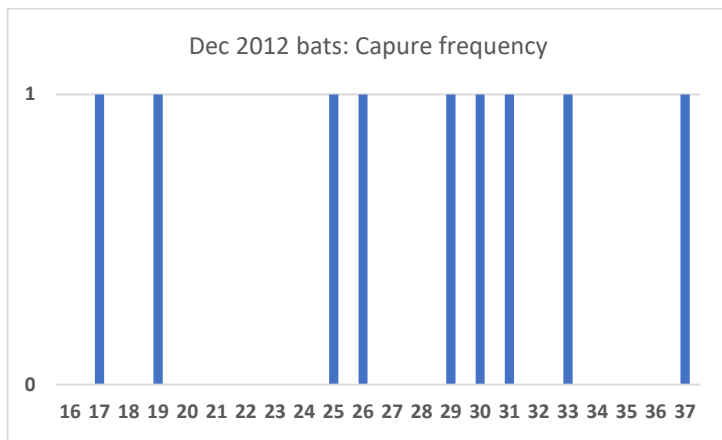


## Bats banded in Dec. 2012

These are the elders of the colony, as this was six years ago. 33 lactating females were banded that month, and all of them reappeared each summer until 2016, when many reached the end of their lives and the cohort started to shrink noticeably. This summer there are just 9 remaining, and next summer there are sure to be fewer still.

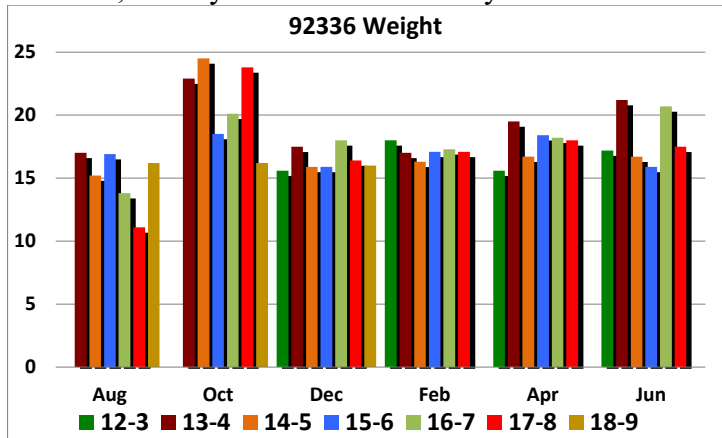


They have all been recaptured multiple times, 92336 the most often, at 37 captures, 92325 the least with 17.



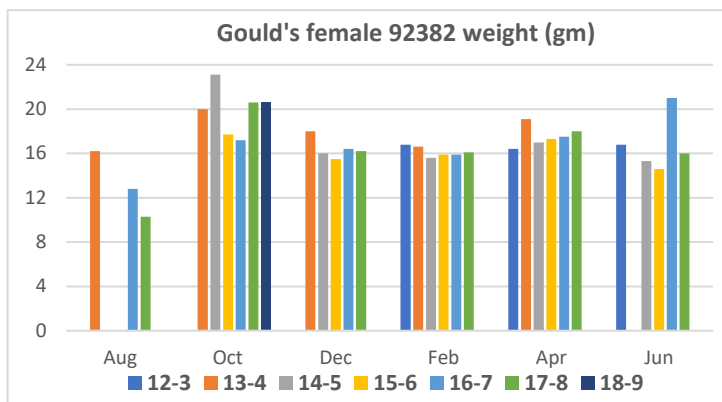
### Old female Gould's bats

92336, the matriarch., now captured 37 times, always present, much lighter than usual in Oct., about normal in Dec., and in between produced the usual twins, so lactating this month. She was lactating when banded in Dec. '12, so may well have been 2-3 years old.



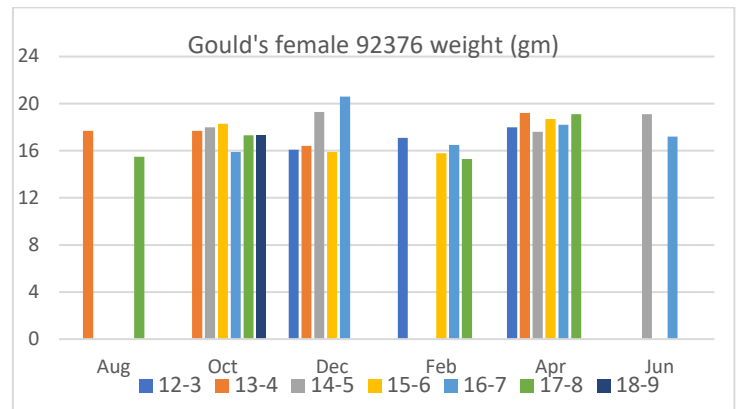
She has been found in C30 8 times, C14 5 times, C36 4 times, C16 3 times, a total of 20 times spread over just 4 boxes, so has fairly strong territory preferences.

92382 has now been captured 33 times, having been lactating when banded in Dec. '12. This is her seventh breeding season we've monitored. Her normal weight is about 16 gm. The 10.3 gm in Aug '17 seems dubious.

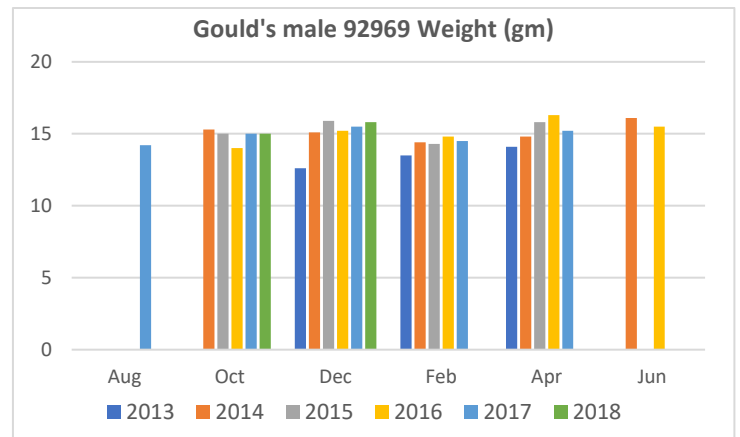


She was in C30 6 times, C25 and C41 3 times each – again, fairly strong territory preferences.

92376 was also banded as a lactating mother in Dec '12, has now been captured 25 times, is most often present in Oct. and Apr., and we have records of 4 pregnancies over 7 years. She hasn't really shown the usual peak weights of late pregnancy and preparation for winter.

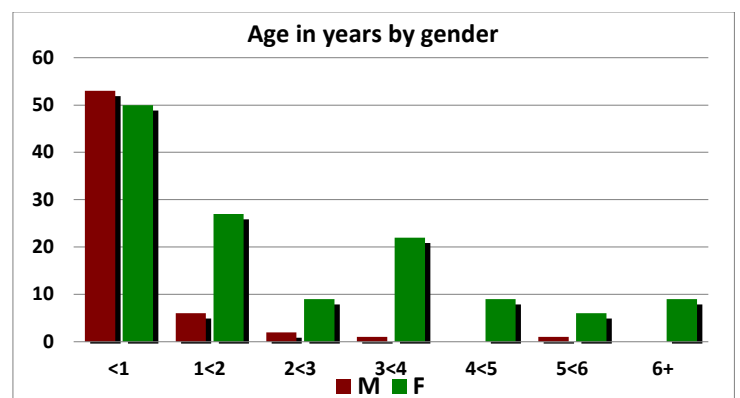


There was only one fairly old male, 92969, banded by Lindy in Dec '13, now captured 24 times.



He's been present generally Oct. to Apr., and his weight record is remarkably steady, though he has improved his ability to put on weight in April.

### Community structure

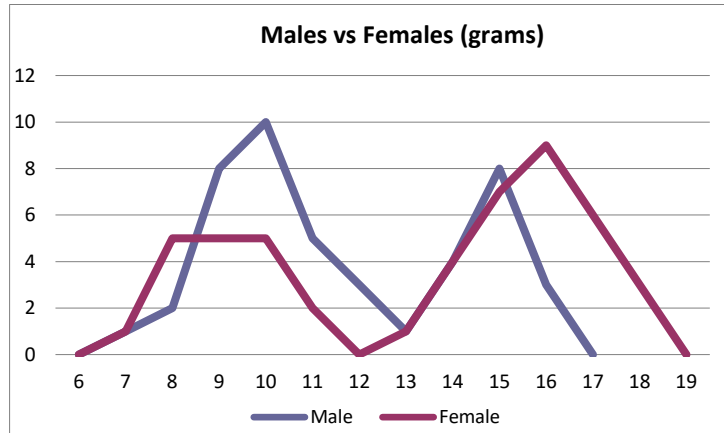


As usual, there was a mix of ages in the boxes, all the way from bats older than 6 years, to juvenile bats born this spring. And also as usual, nearly all the older bats were females.

The structure applies not just to the colony but to individual boxes. C27 had 3 old females banded in Dec '12, 3 each from Apr & Dec '15, 1 from Dec '16, 3 from Dec '17, 1 each from Feb & Apr '18, and 24 chipped by Dani in Nov. So 6 generations in one box. And seven generations in boxes 45 and 6.

## Weight

Only 83 bats were weighed, as attached young weren't and Steve decided it was more important to finish handling each bat as fast as possible, and get them back into their bags to minimise the stress on them.



Many of the detached young were weighed, hence the bimodal distribution. But pregnancies are not synchronised across the colony so there were furred and pink unfurred pups, varying widely in age and development.

**Next bat box check: Sunday in February, to be advised, probably 17<sup>th</sup> or 24<sup>th</sup>**