

Bats, Organ Pipes NP 28 Oct 2018

We had a mild windless day for checking bat boxes – just right. 17 of the boxes had bats inside, an unusually large number. This is box 9, mainly Gould's but a freetail top left.



There was a big team of helpers, some from Monash Uni, some locals



The Smith family got a show-and-tell from Lindy



Emmi van Harten brought her mother, Madeleine Schoo, to scribe for her



Pia worked with Alys Young (who started acquiring bat handling skill) and Linda Riquelme as scribe



Casey worked with Jessica Keem



I helped Sophie Bloomfield get started on the road to becoming a confident bat-handler. With so many bats there were plenty to go around.



Steve had brought along several computers with the updated spreadsheet for checking bat capture history, so the error rate was tiny. There were 8 new Freetails (all males) to PIT-tag so he was kept busy all afternoon.



There were 29 Large Forest bats crowded into box C39, all but 6 of them recaptures, and all but 2 were female



Thirteen Freetails were found, spread over 4 boxes, including two (a male and female) PIT-tagged in April 2013, so they have been with us now for 5½ years.

It was all done by 6:30 and almost everyone went off home. To my surprise, six came back at 8:15 to help release the bats. All agreed it was a very exciting thing to do.



And next day my washing line was crowded with freshly laundered bags.



Last October we had 133 bats, part of what seemed like a long-term decline from the peak of 275 in 2012, but this year it has recovered somewhat, to 183. Of these, 141 were Gould's (77%), 29 Large Forest (16%) and 13 Freetail (7%).

Twelve of the Large Forest bats were judged to be distinctly pregnant, but only two of the Gould's. By late October, it is usual for bats to be approaching full-term, so either the drought has induced them to take a year off, or they just started very late and it wasn't showing just yet.

Five of the Gould's were dead, all females. One was banded in Dec 16, 3 in Dec '17 and one in Feb. '18. One was about 2 years old, the others 1 year old. The first year is the most vulnerable time for bats, as for us.

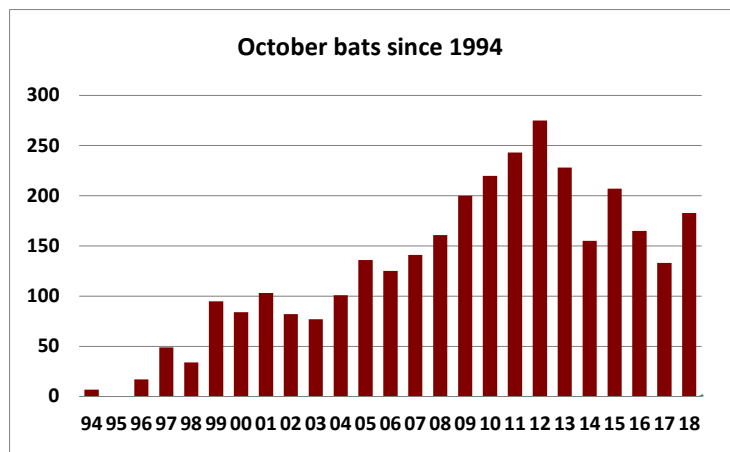
There were 3.2 females for each male bat.

There were 3 new Gould's, two males and one PP; six new Freetails, all males; and six new Large Forest bats, 5 females (all mature, either PL or PX) and a male.

Box	Bat	Species	Adult		Dead
			M	F	
C19	28	Gould's	5	23	
C39	2	Gould's	1	1	
	27	Lge Forest		27	
C03	21	Gould's		21	
C34	19	Gould's	4	14	1
C09	17	Gould's		17	
	1	Freetail	1		
C27	15	Gould's	3	12	
C16	14	Gould's	1	12	1
C46	5	Gould's	5		
	2	Lge Forest	2		
C01	6	Gould's	1	3	2
C14	6	Freetail	5	1	
C44	5	Gould's	5		
C24	4	Gould's	2	2	
C40	3	Freetail	3		
C42	3	Freetail	2	1	
C23	1	Gould's			1
C33	1	Gould's	1		
	183	Totals	43	135	5

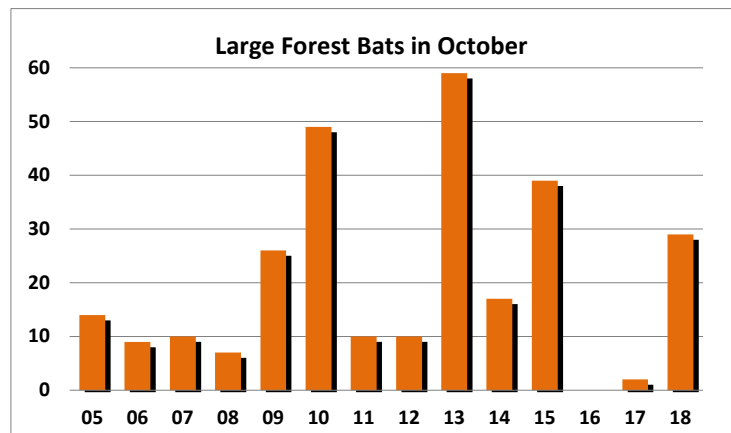
October bats

The catch peaked in 2012, during the wet years following the end of the millennium drought, and has been in irregular decline since. It recovered by 50 bats from last year's low of 133. It may be part of a long-term trend, or just a very long cycle associated with wet and dry periods.

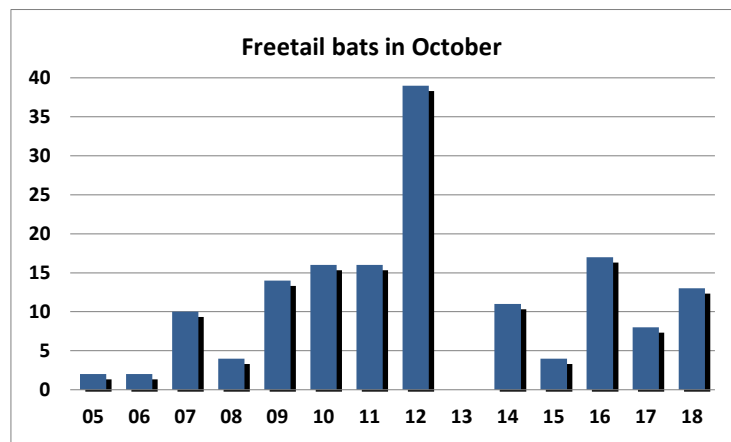


Most of the pattern comes from fluctuation in the number of Gould's, but there are irregular fluctuations of our other two species as well.

The Large Forest bats fluctuate between 2 and 50, up one year and down the next.

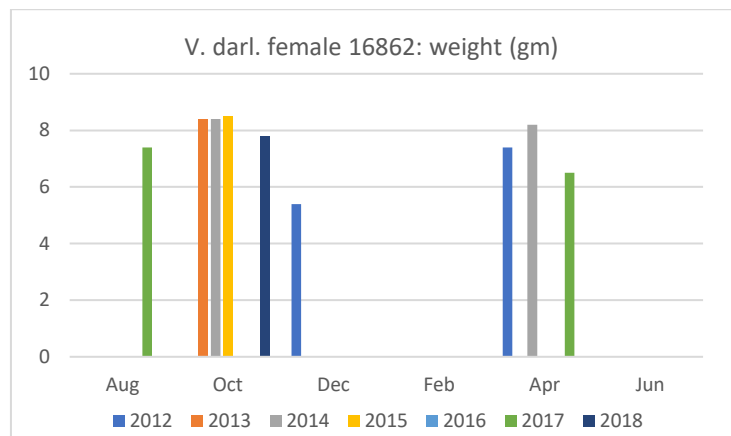


Freetails seemed on a rising trajectory until 2012 then collapsed



Large Forest bat female 16862

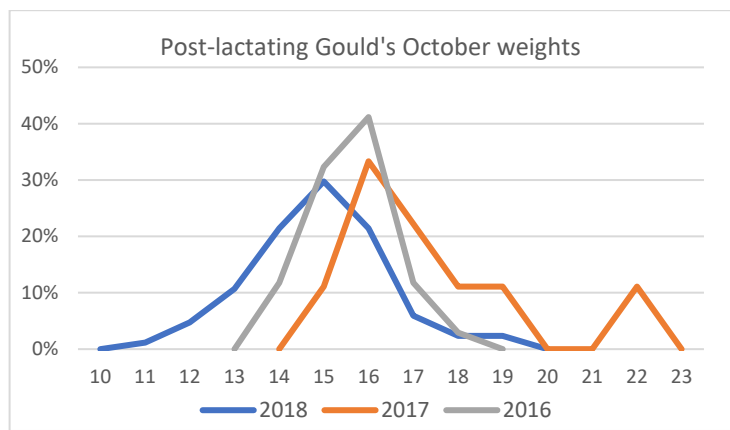
She was banded in Dec '12, the first banding session, as a lactating adult, and has now been captured 8 times (4 of them in October), so is a repeat spring visitor. Her weight record shows a peak in October (pregnancy) but she's a bit lighter this year – perhaps the drought means food supply isn't very good.



Post-lactating Gould's

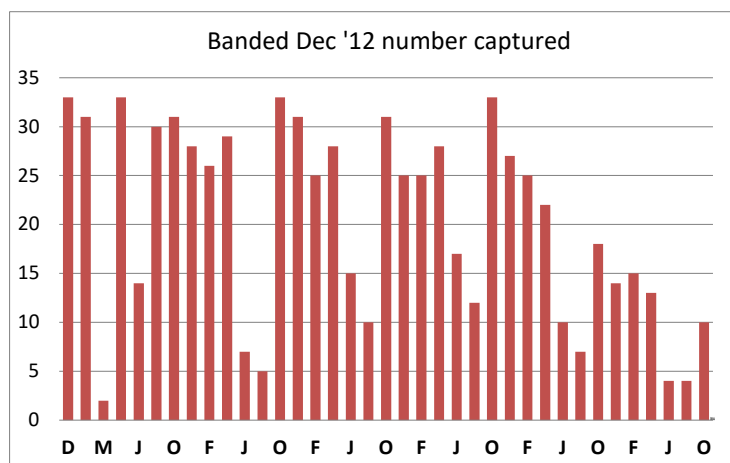
The post-lactating bats are more experienced than the preparous ones, and generally have a better average weight. This year the distribution of weights has shifted down to markedly lighter weights, almost certainly due

to poor food supply in our current drought. Mean weight of PL bats this year was 15.3, last year 17.6

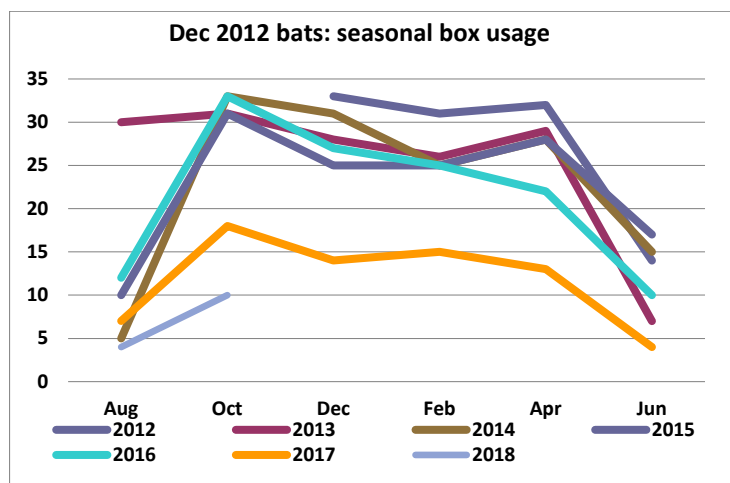


Gould's banded in Dec 2012

33 Gould's females were banded that month, and nearly all of them have been found each October since. The bats of this vintage began to seriously decline last year, as about half disappeared, no doubt having died of old age. This month it was down to 10 of them, so over 2/3 have gone now and the remainder must be very elderly, unlikely to last more than another year or two.



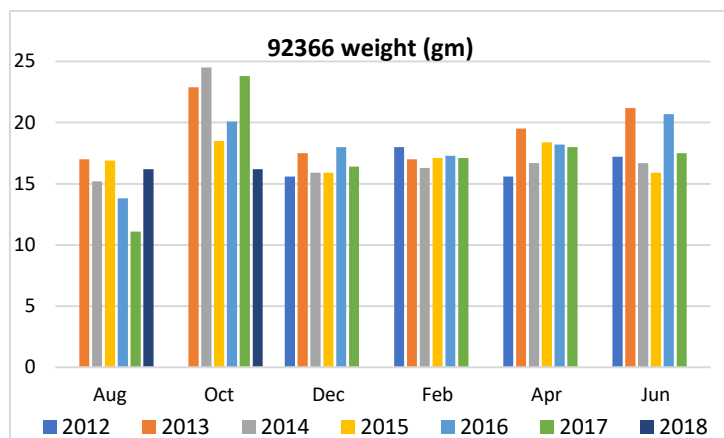
Many of them disappear over winter but reliably return in spring. This year the spring influx was much smaller.



All were this month judged to be PL, none pregnant.

Old Gould's female 92336

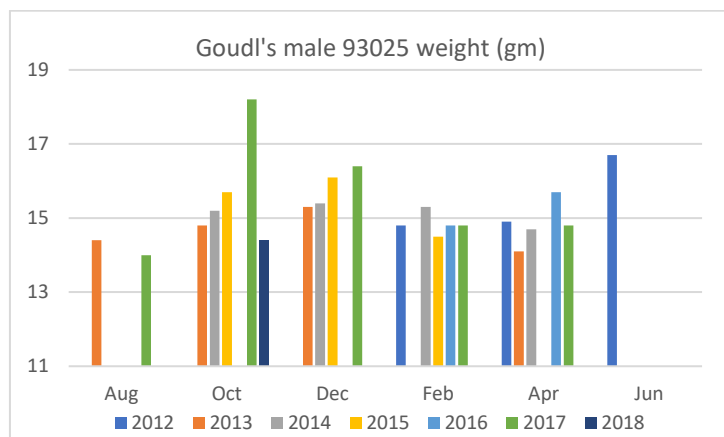
This bat has been captured at every box check since being banded in Dec 2012 (and probably several times before that).



As with the other bats, her weight is well down on the usual figure for October at 16.2 gm. She was 23.8 gm last October. This may be poor food supply and taking a year off from breeding, or it may be the debilitation of old age.

Old Gould's male 93025

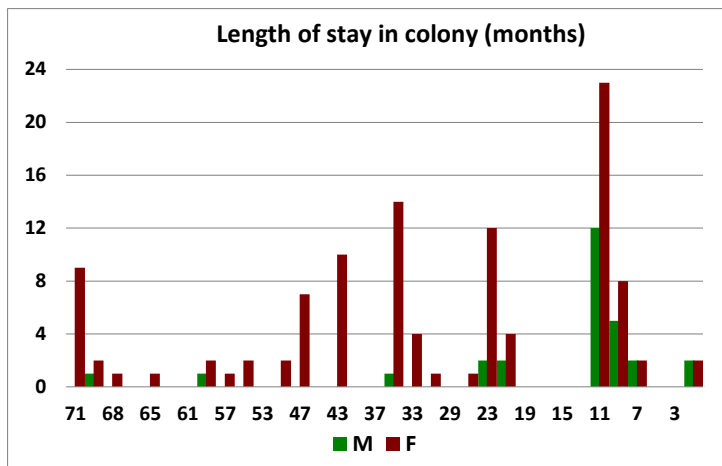
This bat was banded (by Lindy) in Feb 2013. And has now been captured 23 times. He took a gap-year from Feb '16 to Feb '17 but has otherwise been a regular member of the colony except over winter.



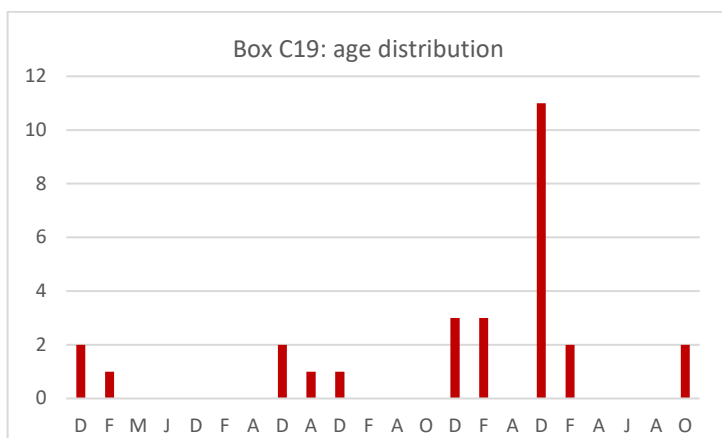
The 18.2 gm last October seems something of an anomaly, but again this month's weight is unusually low for October.

Community structure

The oldest bats have been with us for six years, and each year's cohort of births and immigrants is represent -ed in the age distribution. Only two bats with us for over 3 years are male – 93025 and 92969. With each extra year of age the number still present shrinks, except for Dec. 2012, as that is probably a mix of several age groups.

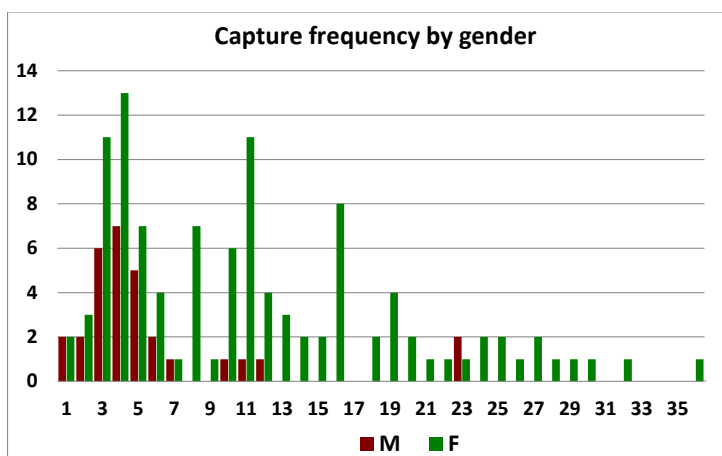


The “big picture” is matched by the small picture of who was in each box. For example C19 had a mix of 6, 4, 3, 2 and 1-year-olds, as did all the five boxes with the “elders” from Dec 2012 in them



Capture frequency

This phenomenon has a similar pattern to that of banding date, but some bats are present each visit while others drop in at mating season or maternity season. All but two bats captured more than 12 times have been females. Just about all boys leave at dispersal time, whereas some of the females stay with mum to replenish the breeding population.



Next box check Sunday 16 Dec. from noon