

Bats, Organ Pipes NP, 11 Feb 2018

A beautiful day for outdoor work, mild and windless, and many bats to extract from boxes. This group in C9



This time of year Bat-fly pupae are abundant.



The new chain-sawed hollow-logs are yet to meet with approval from the bats.

There were a few Grey Huntsmen, and it is breeding time so egg sacs were being defended by the brave mother spiders.

There were also two wee Jumping

Spiders, *Hypoblemum* and *Servaea villosa*, I think.



Soon the bat assessing team arrived and got to work



Nadiah Roslan worked on her bat assessing skills under Lindy's supervision, Andrea scribing for her.



Those two, and Cassandra Nichols, CEO of Earthwatch Australia, were there in part to investigate possibilities of setting up an Earthwatch project around our bat box monitoring, a bit like the Botanic Gardens project that Lisa Godinho, then Casey, used to lead: some science and some practical fieldwork.



We had many casual park visitors drop in. Jemma Cripps did several show-and-tells for young families.



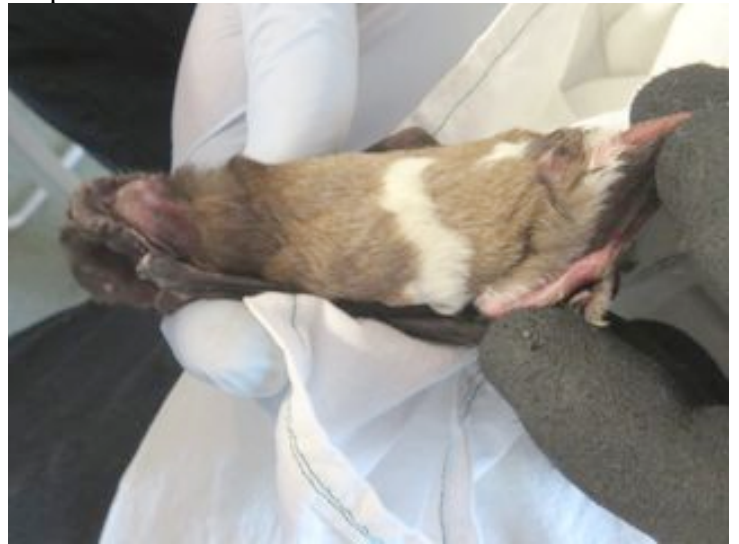
And so did Caroline for one family. Great opportunity to introduce little bats to people who'd never seen one.



We had several new scribes. Casey paired with Jase Hannon.



There were three Freetails, one with an unusual belly-stripe.



And just one young sub-adult Large Forest bat male.



With just over 200 bats to assess, and several people in the very early stages of doing bat assessing, it was near 7 p.m. when they were all done, and we had two hours to wait before it was dark enough to release them. So the 9 or 10 people who stayed to participate in that went for a walk along the creek below the Pipes.



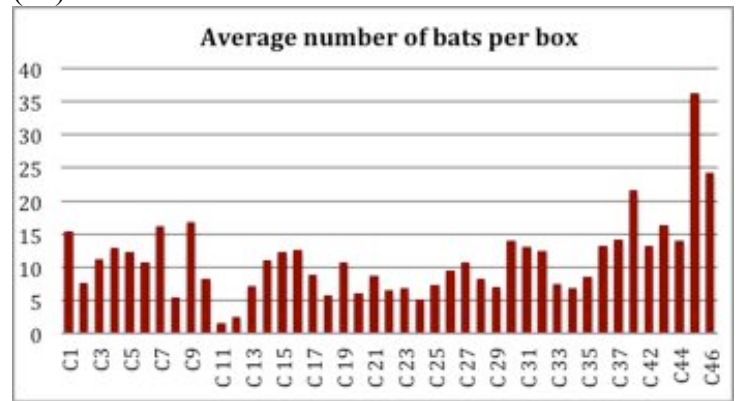
Just after 9 o'clock, we got into opening bags and watch-ing little bats fly off into the night. A large fraction of the day's catch were sub-adults, just beginning their life of flying to catch their own dinner, but all flew off quickly, including a couple that were found to have wing injuries.

Box	Bat	Species	Adult		Juv	
			M	F	M	F
C46	64	Gould's	14	31	11	8
	1	Lge Forest			1	
C15	17	Gould's	3	13	1	
C42	13	Gould's	6	7		
	3	Freetail	1	2		
C07	15	Gould's	3	9	1	2
C41	15	Gould's	2	12	1	
C35	13	Gould's	1	7	2	3
C16	11	Gould's	2	9		
C44	11	Gould's	3	7		1
C09	8	Gould's	2	5		1
C17	7	Gould's		7		
C40	6	Gould's		4	2	
C43	5	Gould's		3		2
C34	5	Gould's		5		
C05	2	Gould's		1	1	
C01	1	Gould's	1			
C13	1	Gould's	1			
C20	1	Gould's	1			
C27	1	Gould's	1			
C33	1	Gould's	1			
	201	Totals	42	122	20	17

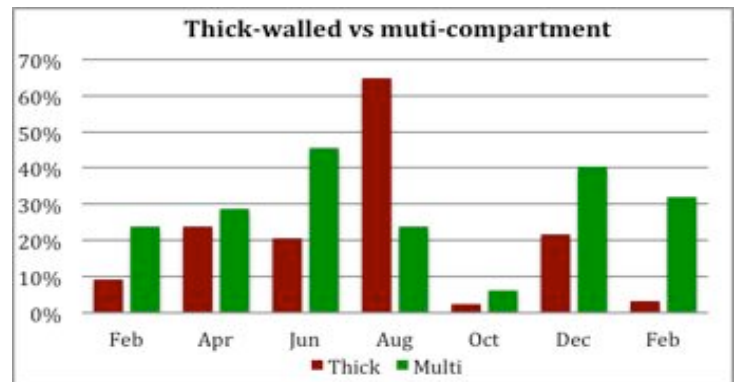
The new multi-compartment boxes, 45 and 46, continue to attract the biggest groups. The bats love them but it is very difficult to extract the bats as the internal chambers are too small for a human hand to be inserted.

36 bats were banded, all of them this year's young, just arrived at a large-enough size for banding to be safe.

The task was shared by Lindy (7), Steve (8) and Casey (21).

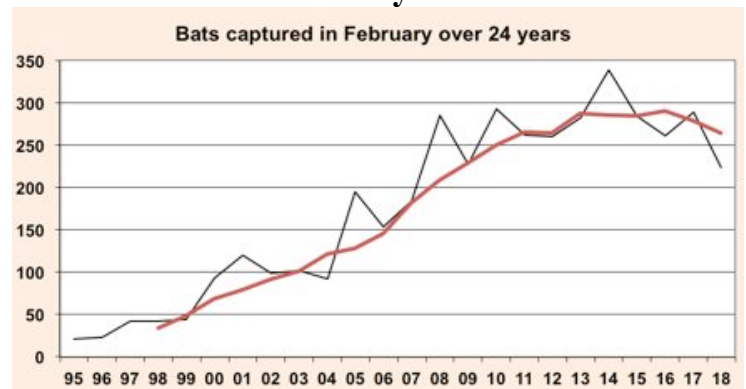


You can see from this chart that the average number of bats found in each box is far greater for C45 and C46, the multi-compartment pair recently installed. The boxes made of 45 mm timber take over as the most-used in August, and spring sees the bats spread around many boxes, but most months these two new boxes have very big groups in them, with 30-45% of all the bats for that month. That's two boxes as against 9 made of 45 mm timber.



22 more escaped, and many were probably re-captured when Steve arrived at the box in which they had taken refuge. It is usually a problem in February when many adolescent bats with no prior experience of us get easily spooked as ladders hit their trees.

February bats



This was the 24th Feb. box check. Bat numbers peaked in 2014, after two wet years probably generated more bat food than usual, and in the years since we have been into semi-drought so the food supply has probably not

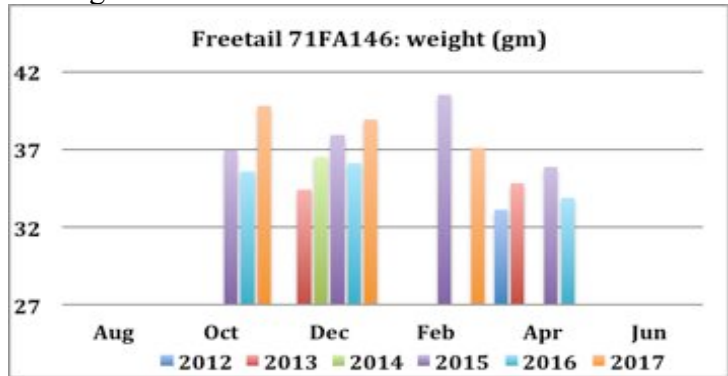
been as good, with decline in breeding success and long-term survival of older bats, as well as the death of some trees. The red line is a 5-year moving average.

Freetails

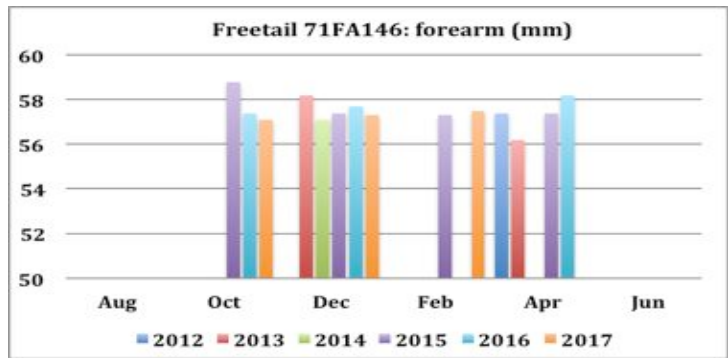
There were three of them, a male and two females. The male is our most-frequently captured Freetail 71FA146, now captured 14 times, PIT-tagged in Apr. '13, so 5 years ago. Apr, Dec, and recently Oct. are his visiting times, steadily becoming almost a year-round resident.

71FA146	Aug	Oct	Dec	Feb	Apr	Jun
'12-3					1	
'13-4			1		1	
'14-5			1			
'15-6		1	1	1	1	
'16-7		1	1		1	
'17-8		1	1	1		
Total	0	3	5	2	4	0

Therefore this is the only Freetail for whom we have a reasonable record of weight and forearm. His weight averages 37.5 gm over the 5 years, and definitely drops by around 3-4 gm in April. His Dec. weights show a fairly steady rise as he has matured and become a more experienced hunter. Churchill's mean is 37.6 gm, so he's right on it.



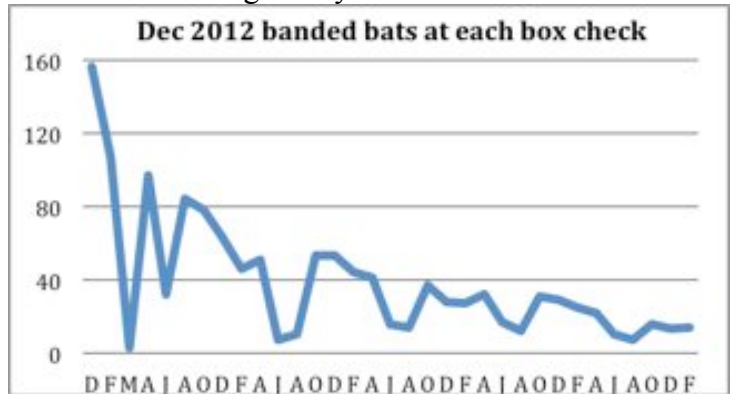
His forearm averages 57.5 mm and the measurements fluctuate around that, usually within 0.5 mm, with two exceptions of the large values in Dec 13 and Oct 15. Churchill's mean is 60.6 so he's 5% smaller.



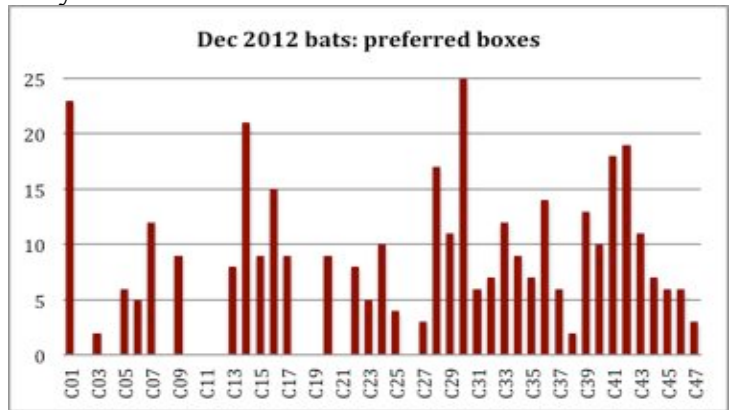
Gould's banded Dec 2012

180 bats were banded in Dec '12, 24 Large Forest, and 156 Gould's. The adolescents soon left and the older bats have been gradually dying off, so the number we

find each box check has slowly dwindled. They mostly go elsewhere for the winter and return each spring, with a few more missing each year.



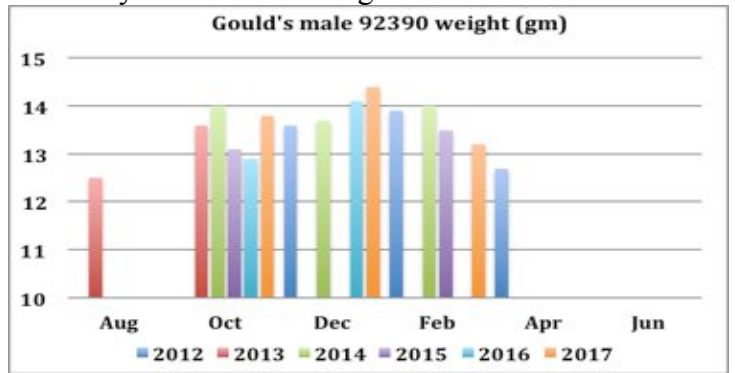
This month there were still 14 of them, 13 females and 1 male, all at least 6 years old, so in advanced middle-age. We don't know how old they were when banded. They were scattered over 8 boxes.



They have preferences as to which boxes they use, strongly favouring boxes 30, 1, 14, 42, 41, 28.

Old male Gould's 92390

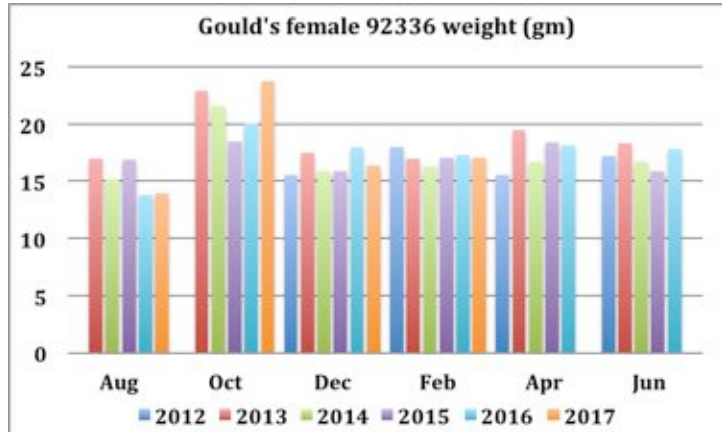
This bat was banded in Dec '12 and has now been captured 15 times, almost entirely from Oct. to Feb., just once each in Apr and Aug. So he is a summer visitor. 8 of those 15 visits he has been found in C42, obviously his favourite hangout.



His weight peaks in Dec., so the typical pregnancy weight-rise of females is not part of his annual cycle. As he has not been found in late autumn or winter we don't know about his weight fluctuation in the off season, other than the one Aug weight, 2 gm down.

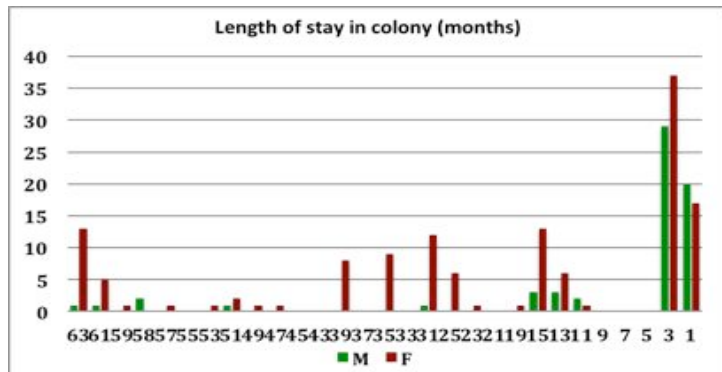
Old female Gould's 92336

By contrast with the male, this female has been present at every box check since she was banded as a lactating adult in Dec. '12. She has been through a pregnancy each spring. Her box preferences are 30, 14, 36, 16. Females 92382 and 92386 also use C30 a lot, often at the same time as 92336.



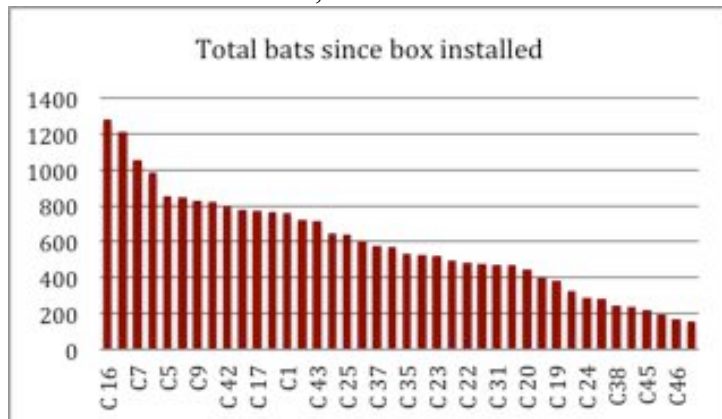
Length of stay in the colony

As happens year-round, the bats were a mix of 6, 5, 4, 3, 2, 1-year olds and a big group of adolescents born last spring. Nearly all the older bats were females though males and females were almost equal in the adolescents: 49:54.



Box popularity with the bats

The first ten boxes have been up since 1992 and used since 1994-5. The most recent boxes installed were C45 and C46 last year. So they are handicapped in terms of total usage. But for many years the most-used boxes have been C15 and C16, installed in 1996.



C42, installed in 2005, is steadily catching up as it attracts much larger groups on average. C45 and C46, the new multi-compartment boxes, are likely to overtake the smaller ones quite fast as we get groups of 60 to 85 in them.



Servaea villosa jumping spider, about 4 mm long

Next box check: Sunday April 22, 12 noon.