

Friends of Bats

newsletter



Issue 117 August 2015

Where are all the bats? Are their numbers crashing?

Tim Pearson

Over Autumn this year it's been very quiet, with no bats roosting in Ku-ring-gai Flying-fox Reserve (KFFR). For some people, of course, this is welcome - but for others, it leads to questions:

- Have the bats left the reserve for good?
- Are their numbers actually declining?
- What's happening with the population?

Flying-foxes returned to the reserve in considerable numbers in July (count c. 13,000), but it still leaves questions to be answered.

We're lucky that we have 20 years of nearly complete population data for KFFR. Counts started in 1995, weekly, for an initial period but then on a monthly basis. Over the years they've been conducted variously by researchers, KBCS, and the Royal Botanic Gardens.

As well as the total lack of bats for a few months, the counts for October 2014, January and February 2015 are the lowest counts for those months in the 20 years of records. February 2015 in particular recorded very low numbers of resident bats - approximately 9,500 flying-foxes in the camp, when the mean number in February over 20 years is c. 36,500.

So what's happening? Where are all the bats? Are their numbers really crashing?

Well, first we need to remember that flying-foxes are a migratory/nomadic species, following the flowering and

fruiting cycles up and down the east coast [1, 2], and that these movements have a broadly seasonal pattern [3]. Add to that the fact that many Australian flora species flower or fruit somewhat sporadically, and we should expect some variation.

If we examine the data from our 20 years of population counts for KFFR (Graph 1) we can see both these facets - the variation by year in each month's counts; and the broad pattern with numbers dropping off over winter, then picking up in summer, apparently peaking in mating season (March-April). This variation is easier to see if instead of graphing all the counts individually, we look at averages - or more specifically, the median and a 50% of data box (Graph 2). The seasonal pattern is a lot clearer; we can expect numbers in the camp to be a lot lower over winter, with the highest numbers in January - March.

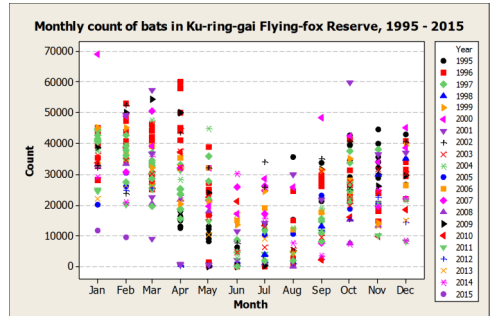
However, looking at both graphs, we notice that the data points for January and February are obviously a lot lower for 2015. What's happening? What are the overall numbers doing? Is there a trend here?

Charting the population counts by date over the twenty year period (Graph 3) reveals that there does seem to be a downward trend in the population of KFFR. In the graph, the solid line is a linear regression; the dashed line is a moving average. The decline in numbers is significant, but not huge. Although, examining the graph, it does appear as if the degree

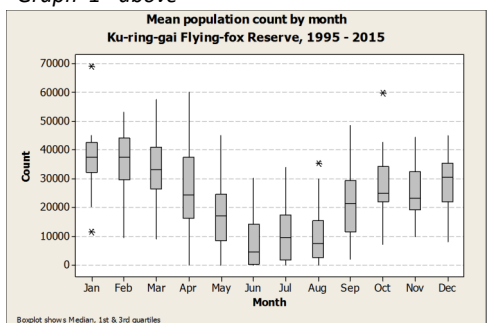
of fluctuation in numbers is actually reducing over time, as well.

Does this mean that the population of grey-headed flying-foxes is in decline? Or just that they aren't hanging around in KFFR?

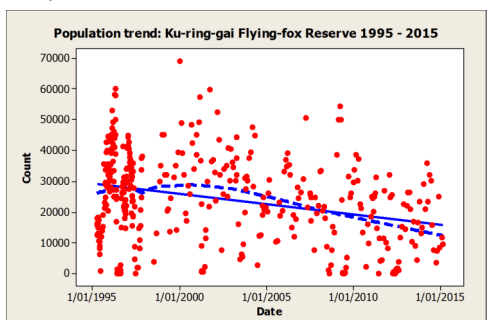
The total lack of bats over April - June seems to have been caused by a heavy flowering of Spotted Gums *Corymbia maculata* on the south coast, so everyone went down there to feast - a normal occurrence. (cont. Page 4)



Graph 1 - above



Graph 2 - above



Graph 3 - above

Ku-ring-gai Bat Conservation Society Inc.

Annual General Meeting, Wednesday 23 September 2015 - see p.4 for details

Shooting & Netting in Orchards - update

Nancy Pallin

Licences to kill

Grey-headed flying-foxes were listed as a threatened species in 2001. The NSW Government responded by providing fruit growers with a legal way to shoot flying-foxes to protect commercial orchards from damage.

Research undertaken since then strongly indicates that shooting is not the panacea for farmers that they believe it is. When large numbers of hungry flying-foxes descend on an unprotected orchard shooting fails to protect the crop. The government has promoted full exclusion netting since 2001 but it was not until the grants were available that there has been widespread installation of netting.

Data collected by the NSW Government on the number of flying-foxes harmed (shot) comes from licences issued and the number killed reported by licensees. Reporting requirements influence whether licences are issued in the following year.

Licences were issued for killing between 2,000 and 3,000 flying-foxes in the years 2001 to 2006, then the number declined to around 1,000 until 2011. In 2011 – 2012, summer only, 220 were licensed to be harmed and 40 reported killed. In 2012-2013 licensees were issued to kill 1168 but only 299 were reported killed. In 2013–2014 33 licences were issued to kill 1082 grey-headed flying-foxes, with 60% of the licences in the Sydney Basin. In addition licences were issued to kill 18 black and 110 little red flying-foxes.

NSW Environmental Trust Flying-fox Netting Subsidy Program -

Protecting commercial orchards & avoiding killing flying-foxes and birds

This scheme has netted approximately 340 hectares of orchards since 2011. Almost \$5 million has been distributed in grants and an extra \$1 million provided through to June 2016.

The Rural Assistance Authority which

administers the grants received 98 applications from fruit growers: 35 applications from the Sydney Metropolitan Basin, 33 from the Tumut/Batlow region, 26 from the Orange/Cabonne region, and 4 from the North Coast region.

Half of the funds have been used to install full exclusion netting and the other half for 'throw-over netting' with a maximum mesh size of 5mm. Conditions require growers to secure the netting to avoid animals from being entangled.

Licences to shoot flying-foxes in 2014/15

Two licences were issued, each for 50 grey-headed flying-foxes. One licensee reported harming seven flying-foxes and the other 50. This is an unprecedentedly low number of licences since 2001. Certainly natural food for flying-foxes was plentiful during that season but hopefully the decline in licences also indicates a cultural shift from shooting flying-foxes to protecting crops with netting.

More information: <http://www.environment.nsw.gov.au/animals/endtoshooting.htm>
<http://www.environment.nsw.gov.au/wildlifelicences/s120Licence.htm>

Bat-friendly bridge for the Netherlands

Dutch architects have designed a bridge for people walking or cycling, and for bats, spanning the Vlotwatering River.

The river is an important route for different types of bats, which cross the water to catch small insects and hide in World War II concrete bunkers around the area throughout the winter.

To create a bridge that could offer safe roosting spots for different species of bat the architects have had to add extra mass to ensure its temperature could remain relatively stable. They chose

to use concrete for the main structure, and will create hidden entrances to roosting areas on the underside. Three specific elements of the bridge were designed for the bats – on the north side an abutment accommodates winter roosting, while the deck and the brick balustrade include openings to facilitate summer roosting.

Next Architects said "The basics of designing for bats does not differ much from designing for humans." "For safety you need to protect the bats against their natural enemies



Bat-friendly bridge across the Vlotwatering River

which are predators like cats and owls, but mainly humans." "It is most important to make entrances for their stays that are very small, hardly visible or cannot be reached by their natural enemies."

Article published in *Dezeen* magazine 2 June, 2015, summarised by Nancy Pallin. Read the complete article at:

<http://www.dezeen.com/2015/06/02/vlotwateringbridge-bat-bridge-next-architects-monster-netherlands/>

Ku-ring-gai Flying-fox Reserve - tree pruning/removal causes concern

(Nancy Pallin)

Following strong pressure from some residents, Ku-ring-gai Council chose to create a 10 metre buffer in the reserve by removing trees adjacent to four properties. Following a Council site inspection in March, residents identified 37 trees they wanted removed. Already eight large turpentine trees had been poisoned in this area by persons unknown. Council made application to the Office of Environment and Heritage (OEH) to prune or remove trees.

Humane Society International (HSI) was alarmed by this proposed action in Council's only reserve dedicated to threatened fauna and one that has been protected by a Conservation Agreement between Council and the NSW Government, since 1991. Through Ku-ring-gai Bat Conservation Society (KBCS), HSI inspected the reserve and sought advice from EDO NSW (Environmental Defenders Office) which sent a legal letter to Ku-ring-gai Council.

HSI is concerned that 'a precedent will be set for other neighbouring land holders in the future' and 'removal of vegetation could lead to the risk of cumulative impacts on the flying-fox and its habitat'. EDO NSW pointed out that actions in the broader region included 'proposed dispersals at other

camps in NSW, such as Avalon, must be taken into account as these proposed actions may culminate in the reduction of Flying-fox habitat on a regional scale.'

Precedent for Conservation Agreements

Voluntary Conservation Agreements (VCA) have been signed under the NSW National Parks and Wildlife Act.

EDO NSW wrote '...given the VCA was one of the first to be established and was done so with the specific goal of conserving threatened species habitat. Our client understands that the proposed tree removals would be the first time a management action has been performed within a VCA that directly conflicts with its specified purpose.'

Since April, Ku-ring-gai Council engaged a flying-fox consultant to advise on how the tree works might impact on the flying-fox camp and whether the animals might move closer to more houses.

In late May Ku-ring-gai Council applied to OEH to remove/prune a total of 18 trees. The work was carried out in late June, at night, as the flying-foxes had returned to the reserve.



Tree pruning/removal in KFFR (N. Pallin)

KBCS position

We are concerned about the precedent of tree removal being used again in the years to come; the slow pace of replacement vegetation on the lower slopes away from houses and whether in fact, these actions will resolve conflict between people and flying-foxes.

KBCS believes that modifying houses to reduce noise and other impacts of flying-foxes would be more effective in the long run.

** HSI has been involved in the conservation of flying foxes for nearly 20 years, developing scientific nominations which saw the listing of the grey-headed flying fox as a "vulnerable" species under the Environment Protection and Biodiversity Conservation Act 1999 in 2001.*

Flying-fox Camp Dispersals - Sydney & Cairns

Avalon - dispersal of flying-foxes in Cannes Reserve commenced mid-July with speakers used to blast industrial noise at the bats as they return to roost in the early morning. Latest report suggests animals are still returning to the reserve and being dispersed.

Kareela - dispersal commenced at the beginning of August (which is considered to be outside the period in which camps should be disturbed), being conducted by an ecological expert using noise, smoke, light and "physical" disturbance.

Cairns - after unsuccessfully trying to disperse a flying-fox camp a year ago (which resulted in splinter camps all over the city), the council has introduced a new management plan to maintain the spectacled flying-fox colony near Cairns Library.

<http://www.cairnspost.com.au/news/cairns/bats-earn-permanent-home-in-cairns-cbd-after-council-backflip/story-fnjpusyw-1227453077384>

Bat Awareness Evening

Saturday 21 November, 2015
6.30 pm

2nd Gordon Scout Hall
Rosedale Road Gordon

Meet a bat, displays, craft for kids,
refreshments & watch the spectacular
fly-out 20 minutes after dusk.

This event is free.

Bookings essential - contact:
web@sydneybats.org.au or
call/text 0428 981 420

Notice of Annual General Meeting

KBCS Inc. will hold its AGM
(including election of committee)
Wednesday 23 September, 2015
@ 8.00 pm
4 Taylor St, Gordon (cnr Waugoola St)

Our guest speaker before the meeting will be Heather Baldwin
Heather is a PhD student at Macquarie and Ulm Universities and
she will tell us about her research into
infectious diseases (coronavirus) in west African bats.

Please join us at 7.00pm for a light meal before Heather's presentation.
RSVP for catering purposes: 18 Sep.
Email web@sydneybats.org.au or call/text 0428 981 420

Bat Conservation Gift Fund News

Thank you to all our generous donors, whether acknowledged or anonymous. Final donation for the year ended 30 June, 2015 received from Q Nguyen. Donations for the year totalled \$5175.00 - a fantastic result!

Donations have been used as follows:

The habitat restoration project in Ku-ring-gai Flying-fox Reserve is ongoing, long-term and successfully providing suitable habitat for flying-foxes.

Our website was recently upgraded to be mobile/tablet friendly - see for yourself: www.sydneybats.org.au

Where are all the bats? *(continued from page 1)*

But the declining numbers in KFFR seems to be part of a trend for more, but smaller camps.

And are the overall numbers of the grey-headed flying-fox declining?

Well, that's a different question, and one that needs a National flying-fox census! And we'll cover that in the next issue of Friends of Bats!

1. Roberts, B.J., et al., *Long-Distance and Frequent Movements of the Flying-Fox Pteropus poliocephalus: Implications for Management*. PLoS ONE, 2012. 7(8): p. e42532.
2. Tidemann, C.R. and J.E. Nelson, *Long-distance movements of the grey-headed flying fox*. Journal of Zoology, 2004. 263: p. 141-146.
3. Eby, P., *Seasonal Movements of Grey-headed Flying-foxes, Pteropus poliocephalus (Chiroptera: Pteropodidae), from Two Maternity Camps in Northern New South Wales*. Wildlife Research, 1991. 18: p. 547-59.

1331 and counting. . . .

From *Bats*, the newsletter of Bat Conservation International, Winter 2015

Researchers around the world continue to identify new species of bats. Fifteen species new to science were described in 2014, bringing the total number of recognised bat species to 1,331. The 15 new species come from 11 countries: Panama, Guyana, Venezuela, Ecuador, Peru, Bolivia, Morocco, Cameroon, Kenya, Ethiopia and Australia.

"New bat species are sometimes captured in the field, but others are discovered in museum drawers or laboratories when careful analyses show that samples identified as one species actually represent two or more distinct species," says Nancy B. Simmons, Curator-in-Charge, Department of Mammalogy, at the American Museum of Natural History in New York.

Membership renewals due now!

Memberships are due for renewal as of 30 June each year. Thank you if you have already renewed yours.

Annual membership is \$20.00 (individual or household).

If you receive your newsletter electronically, your membership expiry date will be in the email; if by post then please check the envelope for membership expiry date.

And don't forget that donations of \$2.00 or more are tax deductible and always welcome. How to donate?

- You can add a donation to your membership fee if paying by cheque
- Use PayPal on our website - visit www.sydneybats.org.au and click the "donate" button on our home page
- We accept membership fees and donations electronically - contact web@sydneybats.org.au and we will provide you with the relevant bank account details.

Ku-ring-gai Flying-fox Reserve Bushcare Group

meets every Tuesday
8.30am-12.30pm.

New volunteers always welcome!
Like more information?

Email us: web@sydneybats.org.au

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PO Box 607, Gordon,
NSW, 2072 Australia.

Website: www.sydneybats.org.au

Email: web@sydneybats.org.au

Chairperson:

Tim Pearson 0417 259 310

Subscription enquiries:

Penny Diakiw (02) 9449-3539

Newsletter editor:

Jen O'Meara