Friends of Bats
newsletter
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Flying-fox colonies face the heat

Compiled by Jen O'Meara

Large numbers of flying-foxes were badly affected and/or taken into care as a result of heat-stress during the extreme weather events in January this year. There were three heat waves which caused the deaths of thousands of flying-foxes from the Central Coast to Nowra.

Tuesday 8 January had a devastating effect on the flying-fox camp at Bombaderry near Nowra on the South Coast, with deaths estimated at approximately 3000. In Sydney the temperatures were not as extreme thanks to cloud-cover reducing the threat.

The January 12 event reached temperatures of over 40° but an early wind-change and storm front brought welcome relief and prevented a high mortality rate.

On January 18, the heat wreaked havoc up and down the coast with the temperature in Sydney reaching a record of 45.7°C. Many flying-fox camps were affected with deaths reaching the hundreds.

Flying-foxes in camps have a behavioural response to heat, retreating from the upper branches where they are exposed to heat and desiccating winds, to the shelter of shrub layers underneath. Ku-ring-gai Flying-fox Reserve (KFFR), with its understorey of (largely) Pittosporum, experiences an increase in relative humidity and lowering of temperature. The microclimate of camps is important to the survival of bats and would influence the vegetation type in which they choose to roost. The bats in KFFR also had the option of moving down to the creek where they were better protected. Many adults did just this, but juveniles who were not yet flying remained isolated higher up-slope and suffered greater losses.

Artificial water sources have been used to supply cooling sprays in scenarios similar to that in North Avoca where bats were sprayed from water tankers, courtesy of the local council and Avoca Rural Fire Service. The application of water during heat waves may be a long-term solution for reducing heat stress death for most colonies.

Juvenile flying-foxes couldn't cope with the extreme heat. Photo: C Kuiper

Marjorie and Rolf Beck recognised for their environmental work

Nancy Pallin

Ku-ring-gai Council's Australia Day Environment Award went to Ku-ring-gai residents Marjorie and Rolf Beck.

Both Marjorie and Rolf have dedicated much time and effort helping to protect and restore our local environment. They have both been Bushcare volunteers for over 10 years at several reserves, donating their time and labour to remove weeds and restore natural bushland habitats.

Rolf has a passion for native plants and has been conducting research on species which are difficult to propagate. He shares his knowledge with Council, other residents and the wider scientific community.

Marjorie has dedicated much of her time to bush regeneration and the restoration of habitat in Ku-ring-gai Flying-fox Reserve. She has also contributed much knowledge and understanding of the behaviour of the threatened grey-headed flying-fox which has assisted Council in managing the bats and the reserve. Marjorie has also supported a number of scientists and students with their studies at the reserve over many years. She has been involved in monthly estimates of flying-foxes in the reserve since 1998 providing data to Council and researchers which helps with management issues, queries and the national census of grey-headed flying-foxes.

Marjorie Beck hard at work in Ku-ring-gai Flying-fox Reserve

National flying-fox census underway

In 2001 grey-headed flying-foxes were listed as vulnerable to extinction. 'Counts' and estimates of habitat-loss indicated the species' population had suffered a 30% decline since 1989, due primarily to loss of key winter foraging habitat.

A national census of the grey-headed flying fox throughout its range has not been conducted since 2005. At that time, 674,000 individuals were documented – up from 425,000 the previous year. There could be several reasons for this discrepancy, eg. inexperienced volunteers miss-counting.

The current status of the species is continually under debate and there have been calls by farming and resident groups for it to be de-listed so that killing in orchards and disturbance of camps could be more easily implemented.

In March, a three-day national effort involving hundreds of volunteers from NSW, Queensland, Victoria, South Australia and ACT counted bats. This count will be repeated every three months over a four-year period (funding-dependent).

The counts should show whether the best estimate of between 300,000 and 400,000 remaining bats is accurate; and whether the population is in serious decline, as other studies have found. Some experts have said the species could be ''functionally extinct'' in the wild by 2050.

There are thought to be roughly 300 grey-headed flying fox camps in eastern Australia and researchers plan to measure as many of them as possible. The program is supported by the NSW Environment Minister, Robyn Parker, who promised that the state would commit resources to the full four-year study.

Juvenile flying-foxes explore the release cage. Photo: C. Kuiper

Orphan Release 2013

Each year, wildlife rescue groups raise numbers of orphaned flying-foxes for release back into the wild population.

Pups who lose their mothers are fostered from September onwards by human carers. Usually in January, the juvenile bats are crèched together to de-humanise (forget their carers), and to build flight muscles in preparation for release.

After a period of approximately 3-4 weeks in crèche, they are moved to a release cage for a short period after which they are then soft-released and support-fed.

(*Soft-release involves opening the shelter door, allowing bats to leave of their own accord. Supplementary feeding continues for a few weeks until no bats return.)*

This year, more than 105 animals have already been staged through crèche at the flight aviary at Kukundi (Lane Cove NP), then released at Gordon. There are plenty more still waiting. From the first births sighted at the beginning of September, to the last ones in mid-January, pups have been coming into care over a longer season and in far higher numbers than normal. At the moment there is support feeding at the release cage in Gordon, 43 pups in crèche at Kukundi and 49 adults at Kukundi with 40 more juveniles in people's homes waiting for a place. There are also adults in hospital care.

This is a huge logistical task managed by volunteers from WIRES, Sydney Wildlife and KBCS. Three shifts of volunteers are currently cutting and delivering over 60 kg of fruit/day.

Congratulations must go to the wonderful coordinators and their volunteers who ensure these young bats have the best possible start to their lives.

Bats still at risk in Queensland?

A proposal to amend the Land Protection and Nature Conservation legislation in Queensland failed late last year when the (Qld) Agriculture, Resources and Environment Committee did not support the Katter Party's bill to have flying foxes declared as pests.

The committee's report includes the following recommendation:

'The committee recommends that the Land Protection Legislation (Flying–fox Control) Amendment Bill 2012 not be passed due to its potential inconsistency with the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC), and the lack of support from any level of government.'

The report's conclusions included the opening statement - ***'Flying-foxes play a crucial role in our ecosystem as pollinators for native forests and commercial crops.'***

And the following re *'Health and other implications for people living in close proximity to flying-fox colonies and roosts':*

'According to the advice provided by Queensland Health, the health risk for people living in close proximity to flying-fox colonies and roosts is low'.

All tabled papers, including the committee's report on the bill are available at:
http://www.parliament.qld.gov.au/work-of-assembly/tabled-papers/online-tabled-papers.

Definition: A "*pteropucidal black hole*": Is formed when a local population of flying foxes is lost perhaps through culling, creating a vacant niche. Animals are drawn in from further afield which are also culled, forming a vicious cycle.

Demand wildlife-safe netting!

Jen O'Meara

In our last newsletter we reported that The Reject Shop will stock only Hailguard-type netting once current supplies of monofilament netting run out. But wildlife are still at risk from many brands of netting on the market.

Entanglement in backyard netting is recognised by the federal and NSW governments as a threatening process for the grey-headed flying-fox yet unsafe netting is readily available throughout Australia.

When choosing netting, wildlife protection agencies advocate the 'finger test', where netting too small to fit your finger is considered acceptable and safe for wildlife (usually 30mm).

Thin nylon/monofilament netting, particularly black, should never be used and is responsible for the death of many bats and other wildlife.

Unfortunately, wildlife-safe netting is much more expensive than unsafe varieties but is also a far superior product for longevity and effectiveness; 16 square metres of white knitted netting sells for around $9.00 while a twenty metre square of Hailguard sells for nearly $50.00. Other cheaper, safe alternatives can be handmade using shadecloth knitted or pegged together to make a cover.

Social pressure can encourage and reward retailers who stock wildlife-safe netting. Consumers can go back to retailers and demand to know why they were not told of the dangers of using unsafe netting and request a safer replacement or money back. As a response to this pressure, some retailers, such as Bunnings, are now stocking relatively cheap wildlife-safe 'fruit socks' that can be slipped over branches containing fruit for protection (approximately $3 for four small or two large socks).

After discussion with wildlife care groups, Bunnings have also decided to reduce the aperture of their white knitted netting from 30mm diameter to 15mm diameter. The company realises that this is not the ideal size but is seen as an intermediate step. They do want to be seen as a flagship for wildlife-safe products and netting but note that a variety of other retailers sell netting.

KBCS encourages you to insist that retailers identify wildlife-safe netting, allowing the consumer to make an informed choice.

*Left: How **NOT** to net a tree - ineffective and unsafe for wildlife. The loosely draped netting can easily entangle bats, birds and reptiles.*

Right: The tautly-fitted netting will deter wildlife without entanglement occurring.

Centennial Park welcomes bats

Lachlan Swamp, Centennial Park

Flying-foxes ejected from Sydney's Royal Botanic Gardens last year have taken up residence at Centennial Park as well as other camps around Sydney and beyond.

Many of the dispersed bats moved to Wolli Creek or Centennial Park and originally park management indicated that they would not tolerate a camp on their property.

Currently up to 30,000 bats now call the paperbark forest of Lachlan Swamp home and the Centennial Park Foundation is making their presence into a positive asset for the park.

The bats are reported to be seen as an opportunity for the Park to upgrade their facilities to encourage tourism, facilitating education and understanding of flying-foxes and the issues they face.

The large numbers of flying-foxes in this camp make it an important refuge and the park is reported to be monitoring bat numbers as part of a state-wide count of flying foxes with volunteers and Sydney University. The park aims to find a sustainable plan for managing the co-existence of the flying-fox colony and its trees.

From Alternative media,
author: Peter Hackney
posted: Thursday, 14 February 2013

KBCS - keeping busy

- Commented on Lane Cove National Park Plan of Management, strongly supporting the need for Kukundi for use as a flying-fox crèche prior to release of rehabilitated flying-foxes
- KBCS members supported bat education events in Gordon (22 and 25 Feb, 9 March)
- Habitat Restoration Project continues weekly (see right)

Ku-ring-gai Flying-fox Reserve Bushcare Group

meets every Tuesday | 8.30 am - 12.30 pm

New volunteers always welcome!

For more information call

Nancy Pallin 9416 7334

or email web@sydneybats.org.au

Heat events then and now - an historical perspective

Thanks to Tim Pearson for research and comment

After the extreme heat in mid-January, and the resulting fatalities in many flying-fox camps, it's worth remembering that heat stress events are not new and the occasional mass mortalities are probably natural ways to keep the flying-fox population under control (McIlwee & Martin 2002*). However heat stress events are becoming more frequent, thanks to climate change; and more intense in their effects due to the animals (already weakened and declining population) being forced into less suitable roost areas because of human-caused deforestation and general habitat destruction.

Naval Officer John Hunter, in his *"An Historical Journal of the Transactions at Port Jackson and Norfolk Island"* (1793), describes the effects of a period of extreme heat culminating on 12 February, 1791 at Rosehill in western Sydney - 222 years ago!:

"The weather was very close and sultry, and the natives having fired the country for several miles round, the wind, which blew strong on the 12th, was heated to a very extraordinary degree, particularly at Rose-Hill, where the country was on fire for several miles to the northward and southward.

Great numbers of parroquets were picked up under the trees, and the bats, which had been seen frequently flying about Rose-Hill soon after the evening closed in, and were supposed to go to the southward every night, and return to the northward before the day broke, now appeared in immense numbers: thousands of them were hanging on the branches of the trees, and many dropped down, unable to bear the burning winds."

Royal Marine Captain Watkin Tench comments on the same heat event in *"A Complete Account of the Settlement at Port Jackson"* (1793):

"But even this heat [ed: referring to December 27th, 1790 - 109°F (43°C)] was judged to be far exceeded in the latter end of the following February, when the north-west wind again set in, and blew with great violence for three days. At Sydney, it fell short by one degree of what I have just recorded: but at Rose Hill, it was allowed, by every person, to surpass all that they had before felt, either there, or in any other part of the world. Unluckily they had no thermometer to ascertain its precise height. It must, however, have been intense, from the effects it produced. An immense flight of bats driven before the wind, covered all the trees around the settlement, whence they every moment dropped dead or in a dying state, unable longer to endure the burning state of the atmosphere."

It's worth noting that on 18 January this year, the measured temperature in both Centennial Park and Parramatta flying-fox camps reached about 46°C (115°F).

*McIlwee, A. P., and L. Martin. 2002. On the intrinsic capacity for increase of Australian flying-foxes (Pteropus spp., Megachiroptera). Australian Zoologist 32:76-100.

Feeling the heat - findings from Ku-ring-gai Flying-fox Reserve

A summary of data provided by Dr. Peggy Eby

Dr Peggy Eby, representing Australasian Bat Society, collected data from various camps in Sydney which were affected by heat events in January 2013 with the purpose of better understanding the impact of heat on individual bats.

Peggy noted body measurements to provide background data with a view to better understand the effects of high temperatures on individual bats and assist in the management and understanding of flying-fox camps .

Peggy provided a summary of the data collected in Ku-ring-gai Flying-fox Reserve, Gordon following the record temperatures of January 18.

A total of 58 bats were either collected or observed from the reserve. All but two adult males were juveniles, less than one year old. Juveniles were also the hardest-hit at other flying-fox camps in Sydney.

This result reinforces the fact that young bats are more susceptible to heat to adults. This may be a combination of behaviour and size/experience.

Some management options to mitigate this risk were suggested in an earlier story in this issue (see page 1).

Membership renewal

If you haven't already done so, now is the time to renew your membership.

If you receive this newsletter by mail, please check the envelope to see if your membership is due.

If you receive the newsletter by email and your membership has not been renewed, this will be mentioned in the email.

If you have a query, email: web@sydneybats.org.au

Bat Conservation Gift Fund News

Thank you to all our generous donors, whether anonymous or named below. Donations received from January to March 2013:

J Arnold, J Burke, S O'Grady, L Pope, J Southgate and Westpac Gift Matching.

Donations received so far this financial year total: **$8125.00**

Donations are always welcome. Donations over $2 are tax.deductible. Simply visit our website: www.sydneybats.org.au Click on the "donate" button to link to PayPal.

Or, donate direct from your bank account - ask us for account details: web@sydneybats.org.au

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