

Fighting the heat

Summary: This series hopes to highlight the impact of climate change driven heat stress events on a Melbourne colony of Australia's Grey-headed Flying-foxes (*Pteropus poliocephalus*), and some attempts to help them during these catastrophic events.

Synopsis:

This series captures the impact of climate change driven heat stress events on Australia's Grey-headed Flying-foxes (GHFFs) (*Pteropus poliocephalus*), and some effort done in Melbourne to help them when these occur.

Summary:

GHFFs are a keystone species and vital long-distance pollinator and seed distributor - contributing to the reproductive, evolutionary and regenerative processes of forest communities along the east coast of Australia

Sustained habitat destruction and camp disturbance has decimated the population to about 10% of pre-European settlement estimates. In 2019/20, drought-driven then bush fire food shortages, followed by multiple extreme heat-stress events took further major tolls, killing thousands.

At one of Victoria's most significant colonies (Yarra Bend Park in Melbourne), it is estimated that over just a few heat-stress events days (where temperatures in the shade exceeded 40° C (104F) on multiple days) at least 5,000 perished – about 10% of the peak summer colony size.

To help protect and save the Grey-headed Flying-foxes during these heat stress events, dedicated professionals and volunteers work in the field in extreme conditions, getting help where they can, to provide relief where possible, but also to rescue (for future rehabilitation and release) those that had succumbed to the heat.

These types of events, continue, and with climate change, are sadly expected to increase in frequency and severity.

Originality:

Documentation of a climate change driven heat stress event and rescue operation

Purpose:

- 1) Raise awareness of climate change driven heat stress events
- 2) Raise the profile of, and build empathy and caring for, flying foxes
- 3) Spotlight the work people do to try and help this often-maligned species

Strengths:

- a) important story,
- b) unique images
- c) difficult to document part e.g. i) Required Lyssa virus vaccination, testing and certification as well as long term relationships with rangers to gain access ii) Physically (43° C (109F) in the shade) and psychologically difficult (i.e. bats dying) working conditions.

Sustainability Statement:

This series of images was completed close to my home (16km) so the carbon foot print was negligible. I have the belief that you generally don't need to travel long distances to create important conservation and wildlife stories. Additionally, all post production (i.e. image processing) and equipment battery recharging were completed from my home, of which I have solar panels, so there were zero carbon emissions produced in the in post-production.



01_Sunset silhouette.jpg



02_Christmas spirit.jpg



03_Fatal attraction.jpg



04_A cool drink from a helping hand.jpg



05_Some of the many.jpg



06_Mid wet belly lick.jpg

01_A fragile but cooling sunset silhouette

On hot days, when resting in trees, flying-foxes will spread their highly vascular wings, sometimes gently flapping, as this allows more air to flow over the surface and so helps cool them down. Here, on a warm summer afternoon as the sun starts to drop, the head of a Grey-headed Flying-fox (*Pteropus poliocephalus*) is silhouetted through its fragile, beautifully evolved, multipurpose membranous wing.

Yarra Bend Park, Kew, Victoria, Australia

02_Christmas spirit

Firefighters from Melbourne's Metropolitan Fire Brigade (MBF) come out during a heat event a few days before Christmas - their truck decorated with tinsel - to try and help cool down some of Melbourne's Yarra Bend Grey-headed Flying-fox colony that are suffering under a heat-stress event.

Yarra Bend Park, Kew, Victoria, Australia

03_Fatal attraction

During an extreme heat-stress event - when temperatures exceeded 43°C (109F) in the shade - in a desperate search for somewhere cooler, Grey-headed Flying-foxes descend from the safety of the tree canopy. Ironically and sadly, this behaviour results in what experts call 'clumping' - where the number of bats in close proximity means they can get even hotter. Often a precursor to mass deaths, at the base this tree there were already many dead bats.

Yarra Bend Golf course, Fairfield, Victoria, Australia

04_A cool drink from a helping hand

A veterinarian from Melbourne Zoo gives fluids to a Grey-headed Flying-fox pup that succumbed to the heat and was collected from the ground near the base of a tree. This pup was taken into care to be reared by volunteer rescuers.

Yarra Bend Golf Course, Fairfield, Victoria, Australia

05_Some of the many

On his way to get more supplies and coordinate rescue attempts, Park Ranger and Grey-headed Flying-fox Project Officer, Stephen Brend, approaches a wheelbarrow already filled with about 100 of the thousands of flying-foxes that perished that day.

Yarra Bend Park, Kew, Victoria, Australia

06_Mid-flight wet-belly lick

A Grey-headed Flying-fox (*Pteropus poliocephalus*), having just completed a high-speed belly dip into the river on a hot day to wet its belly - to help cool down and also provide a source of water by being able to easily lick it off - flies back to its branch, tongue out, having just licked its wet-belly.

Yarra Bend Park, Kew, Victoria, Australia