

## The National Flying-fox Monitoring Program

### Report on the February 2013 count

Data on population size and distribution is essential to inform the conservation management of any species. Monitoring programs are essential to enable the collection of these data and, over time, to identify trends.

Monitoring of flying-foxes is required because two species, the grey-headed flying-fox and the spectacled flying-fox, are listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and relevant state legislation. The results of the program will also help inform responses to public concerns about the impact of flying-foxes on industry, agriculture and public health, including Hendra outbreaks. The large size of flying-fox aggregations (or camps) and their extreme mobility means that flying-fox monitoring is not a straightforward task.

The National Flying-fox Monitoring Program (NFFMP) uses a method that is designed to collect data on the abundance and distribution of flying-foxes in eastern Australia. This method has been chosen as it:

- i. is appropriate for the spatial ecology and behaviour of flying-foxes
- ii. allows estimation of the errors associated with counting animals.

The last point is critical as all monitoring methods have errors and without quantifying these it is impossible to determine the degree of confidence that we have in any population estimate.

In the NFFMP, the flying-foxes at small camps are counted directly while distance sampling is used at larger camps, which uses estimated flying-fox density and the area of the camp to provide a quarterly estimate of the number of animals present. The NFFMP is attempting to simultaneously monitor all known camps of both EPBC-listed species. The program also aims to monitor as many camps of little-red and black flying-foxes that occur in eastern Australia as resources allow.

The February 2013 count was the first count of the four-year research project. Counts were conducted at a total of 401 grey-headed flying-fox and 13 spectacled flying-fox camps over a three day period. The resulting estimate for the total grey-headed flying-fox population was approximately 650,000 animals with roughly 70% of those animals recorded in NSW, 23% in Qld, 6% in Victoria and the remainder in SA and the ACT. Approximately 125,000 spectacled flying-foxes were recorded in the Wet Tropics Region of FNQ.

We provide these numbers to give counters a feel for the outcome of the February count and caution that they are indicative only. We are not yet able to describe the errors associated with the estimate and so it is not possible to say what level of confidence can be assigned to the estimate. Describing the errors is the focus of our ongoing research.

The aim of the program is to establish a reliable baseline estimate of the flying fox populations in 2013 and over time to estimate trends. This will take a number of years. Each quarterly count will be subject to various factors which may influence the results. For example, the February 2013 count took place shortly

after severe storms and flooding in northern Queensland and an unprecedented January heat wave in south-eastern Australia, which saw many flying foxes stressed or killed.

Comparing current monitoring to previous monitoring efforts is also difficult at this stage due to differences in the time of year in which surveys were conducted, the number and distribution of camps counted and the methods used.

The first round of surveys has underlined the importance of having those performing the surveys using the methods correctly in order to arrive at the best possible estimates for individual camps. More training sessions were conducted in the lead up to the count held in May 2013. The CSIRO urges any counters who have any questions or concerns about count methodology to contact Dr David Westcott on [david.westcott@csiro.au](mailto:david.westcott@csiro.au) or Mr Adam McKeown on [adam.mckeown@csiro.au](mailto:adam.mckeown@csiro.au). The CSIRO will continue to conduct training sessions throughout the monitoring program.

The 16-18 May 2013 count was more extensive than the February 2013 counts as we were made aware of additional camps. If you know of camps that are not being counted please contact the CSIRO.

*A belated, but heartfelt, thank you goes to all the counters who put in the hours to assist the program. Your effort is greatly appreciated.*

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If you would like to participate please contact:

New South Wales — [linda.bell@environment.nsw.gov.au](mailto:linda.bell@environment.nsw.gov.au)

Queensland — [john.hueston@ehp.qld.gov.au](mailto:john.hueston@ehp.qld.gov.au)

If you know of additional camps or have questions about the counts please contact:

[david.westcott@csiro.au](mailto:david.westcott@csiro.au) or [adam.mckeown@csiro.au](mailto:adam.mckeown@csiro.au)

Additional information about the program can be found at:

[www.environment.gov.au/biodiversity/threatened/species/flying-foxes-monitoring-program.html](http://www.environment.gov.au/biodiversity/threatened/species/flying-foxes-monitoring-program.html)

The National Flying-fox Monitoring Program is collaboration between the Australian Government, the South Australian, Victorian, New South Wales, Australian Capital Territory and Queensland governments, CSIRO, local governments and volunteers in New South Wales and Queensland. The CSIRO was contracted by the Rural Industries Research and Development Corporation to undertake this research project. This research was funded by the Commonwealth of Australia, the State of New South Wales, the State of Queensland and the Corporation under the National Hendra Virus Research Program.