To all the 'Melbourne's Microbats' Earthwatch Volunteers,

It's nearly the end of the field work season for microbats and looking back over our results this year, your hard work has definitely been worth it. Combined, the Scientist for a Day and Student Challenge teams captured 157 microbats from three different species at the Royal Botanic Gardens, Melbourne. Those three species were Gould's wattled bat (*Chalinolobus gouldii*), the Chocolate wattled bat (*Chalinolobu smorio*) and the Lesser long-eared bat (*Nyctophilus geoffroyi*). We also detected the echolocation calls of the White-striped freetail bat (*Tadarida australis*), so although we didn't capture them, we know the botanic gardens are a foraging area for this species too.

Completing this survey over the last 5 months has required significant manpower. Each of you has played a greatly valued role in setting up (and packing up) the equivalent of 115 harp traps, recording the data from the animals we caught, radio-tracking individual bats to their roosts, and counting bats as they flew out of their roosts for the night.

To the Student Challenge teams and the Scientist for a Day daytime teams, thank you also for your hard work in the lab sorting the insects collected in the light traps and surveying the vegetation around microbat roost trees.

Our surveys in the Royal Botanic Gardens Melbourne have shown that Gould's wattled bat appears to be a successful city-dwelling species. Of the 157 bats captured, 84% of these were Gould's wattled bats. This species was also the focus of the radio-tracking program and your efforts have enabled us to locate 32 different microbat roost trees in and around the Royal Botanic Gardens. Twelve of these were used as maternity roosts and included as diverse sites as the dead leaves of tall cabbage palms, under the possum guards on other palm species, oak trees and cypress pines. As many as 40 bats were found to be roosting together in these maternity colonies. Male bats, which are more likely to be roosting on their own used possum guards, native and introduced tree species and the rotunda buildings in the gardens. The flexibility that this species demonstrates in its choice of roosting sites may help it to adapt to the highly altered urban environment.

Each time we set harp traps we also set up a light trap to sample the insect population in the gardens. This insect collection will be used over the next few months to determine how fussy the bats are when selecting their prey. From the faecal samples many of you helped us to collect we will be able to determine what the bats are eating and whether they have a favourite insect prey item. The availability of food is another key resource that may determine which species are able to persist in the urban environment. As Caroline Wilson has already shown in her research, the diversity and number of insects available to bats decreases as you move from the fringes of Melbourne towards the densely populated city centre.

This research has important implications for the way we plan our urban growth and manage our parks and gardens within the city boundaries. Microbats are likely playing a key role in the management of insect populations in the city, as well as contributing to the functioning urban ecosystem. Improving our understanding of why a select few species are able to survive in the urban landscape while other

microbat species are not will also contribute to the conservation of those species in more natural landscapes.

With your help, we will be continuing this research project in the summer of 2011-2012. Already, this project has greatly improved our knowledge of the resources that are important to the microbats with whom we share this city. We thank you for your time and hope that you enjoyed contributing to the scientific understanding of Melbourne's microbat populations.

Yours sincerely,

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