

History of grey-headed flying-foxes in Royal Botanic Gardens, Sydney

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In 1989 200 grey-headed flying-foxes began camping in the Royal Botanic Gardens, Sydney and by mid 1992 this number had increased to about 3200. Considerable damage was recorded to a number of significant heritage trees in the Garden and steps were taken to deter the flying-foxes from camping.

Methods used included sound (deep percussion), plastic bags attached to branches of trees, strobe lights, odours and the playing of taped distress calls. Noise disturbance was the only method that appeared to have any long term effect on the flying-foxes and was continued from 3 September until 30 September 1992 when all flying-foxes left the Gardens.

Small numbers of flying-foxes were again recorded within the Gardens in March 1993, in very low numbers (3-10) and no flying-foxes were recorded camping in the garden between March 1994 and March 1995. Fifty were recorded in late March 1995 and the numbers increased to 2000 in April of the same year, then reduced to about 20 in late May. Numbers fluctuated over the 1996/97 period with a peak of about 300. In May 1998 numbers of flying-foxes increased to between 3000-3500 and have fluctuated between this figure and a low of 1500, through to the present time (1999).

Early records of flying-foxes in the Sydney Royal Botanic Gardens show an interesting pattern and raise a number of issues which are difficult to relate to the timing of recent invasions.

George Bennett in his *Gatherings of a Naturalist in Australasia* (1860) reported that; "They [flying-foxes] are less frequently seen in the vicinity of Sydney; but in the year 1858, to my surprise, a number of these animals were observed suspended from the topmost branches of the lofty trees in the Sydney Botanic Garden, hanging by their hind claw: it was an unusual event, as for several years not a specimen had been seen in that locality."

In the 1900 Botanic Gardens and Domains Annual Report an invasion was recorded; "*Plague of flying-foxes* - During the month of March [1900] we were visited by immense numbers of flying-foxes. There must have been many thousands of them, and some of the large trees were quite black with them. We called in the aid of a number of local sportsmen, who shot large numbers, and the destructive animals were all killed or flew away in about a week from the first appearance of the swarm. It is many years since the Gardens were visited by a plague of these animals."

Further incursions of flying-foxes were reported camping in the Botanic Gardens in the 1916 and 1920 Annual Reports and these were the last records of flying-foxes in the Gardens prior to the establishment of the 1989 camp.

Why did flying-foxes return to the Botanic Gardens site after 68 years absence? What is the mechanism that allows this species to recognise possible camp sites after an absence of so many generations? What were the factors that caused a group of flying-foxes to break away from the main colony and attempt to establish a new one?