

IN THE PLANNING AND ENVIRONMENT COURT
AT BRISBANE

No. BD 4658 of 2004

BETWEEN: **CAROL JEANETTE BOOTH**

Applicant

AND: **FRIPPERY PTY LTD (ACN 010 890 007)**

First Respondent

MERVYN MEYER THOMAS

Second Respondent

PAMELA ANN THOMAS

Third Respondent

AFFIDAVIT

Filed on: 9 February 2007

Filed by: Environmental Defenders Office (Qld) Inc
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On 9 February 2007, I, **Dr Carol Jeanette Booth**, student and consultant, of 6 Henry St, Chapel Hill in the State of Queensland being under affirmation, say:

Reasons for bringing this application

1. With this application I act in the public interest to promote the objects of the *Nature Conservation Act 1992* and seek to prevent further illegal electrocution and shooting of flying-foxes by the respondents. I have no financial interest in the outcome of the proceedings.
2. As explained below, in 2003 I complained to the Queensland Parks and Wildlife Service (“**QPWS**”) about illegal killing of flying-foxes by the respondents in 2003.

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AFFIDAVIT OF CAROL
JEANETTE BOOTH
Filed on behalf of the Applicant
PEC-5

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The QPWS did not enforce the *Nature Conservation Act 1992* against the respondents. I therefore considered it necessary to apply under section 173D of the *Nature Conservation Act 1992* to ask the Planning and Environment Court to restrain further offences by the respondents against the Act.

Personal details and relevant qualifications

3. I was born 14 March 1963 in Chinchilla, Queensland. I hold a PhD in biological science, a graduate diploma in journalism, and a graduate diploma and honours degree in philosophy. I have almost completed a PhD in environmental philosophy at the University of Queensland and currently work part-time on various conservation projects focused on biodiversity conservation.
4. I have been actively involved with the conservation movement in Queensland for many years. Since 1996 I have held a variety of positions, including as Chair of the Queensland Conservation Council Inc and Coordinator (i.e. chief executive officer) of the North Queensland Conservation Council Inc, which are the leading non-government conservation organisations in Queensland and North Queensland respectively. Annexed to this affidavit and marked “CJB-1” is a true and correct copy of my resume.

Experience with flying-foxes and capacity to identify Black flying-foxes

5. I have cared for young flying-foxes that have been orphaned until they can be returned to the wild, as well as helped care for injured adult flying-foxes. The flying-foxes I have cared for include Black flying-foxes (*Pteropus alecto*) and Spectacled flying-foxes (*Pteropus conspicillatus*).
6. Since 1999, I have been active as an advocate for conservation of flying-foxes, on behalf of the North Queensland Conservation Council and the Queensland Conservation Council. I have worked extensively on many conservation issues relevant to flying-foxes, including flying-fox deaths in fruit orchards. Advocacy work by myself and colleagues resulted in a decision by the Queensland Government to no longer issue permits for the use of electric grids to kill flying-foxes under the *Nature Conservation Act 1992*.
7. Since 2000, I have investigated the killing of flying-foxes on orchards. In particular, in November and December 2000 I investigated the electrocution of a large number of flying-foxes on a property near Kennedy in North Queensland. That investigation resulted in the Federal Court of Australia granting an injunction under the *Environment Protection and Biodiversity Conservation Act 1999*, restraining the fruit grower from electrocuting Spectacled Flying-foxes (reported as *Booth v Bosworth* (2001) 114 FCR 39; [2001] FCA 1453). I have also investigated other orchards in North Queensland with electric grids, including the respondents’ lychee orchard, and

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discovered a number of potential breaches of the *Nature Conservation Act*, all of which I reported to the QPWS. I have focused particularly on orchards with electric grids as they have the potential to kill and injure large numbers of flying-foxes and cause suffering.

Description of respondents' property "Edenvale" at 376 Volk Road, Mutarnee

8. The 33 hectare property owned by the respondents known as "Edenvale" is located at the end of Volk Road, Mutarnee, which runs off the Bruce Highway approximately 65 km north of Townsville and 45 km south of Ingham. Now shown to me and marked "CJB-2" is a true and correct copy of a property map obtained from the Department of Natural Resources on 17 December 2004 showing the property's location in relation to the Bruce Highway, Volk Road, and surrounding properties. The respondents' property is surrounded by Paluma National Park on three sides. Now shown to me and marked "CJB-3" is a true and correct copy of a Property Details Report obtained from the Department of Natural Resources on 17 December 2004. This Report shows that the property is owned by Frippery Pty Ltd.
9. On the respondents' property is a lychee orchard with aerial electric grids. A driveway from Volk Road splits the orchard into two sections. In the northern section (on the right hand side of the driveway as you enter the property) there are 4 electric grids. They cross a treed gully, which obstructs the view along the length of the grids. Without measuring them, I estimated them to be each about 300-400 metres in length. In the southern section (on the left hand side of the driveway) there were 3 grids, which I estimated to be each about 150-200 metres in length. Thus, the total length of the electric grids is estimated to be 1.6 – 2.2 km.
10. The grids were constructed of approximately 15 wires, spaced approximately 20 centimeters apart. The wires were positioned above the height of lychee fruit trees on the land, commencing approximately 3 meters above the ground to a height of approximately 5-6 meters above the ground. The wires were strung horizontally between metal poles of approximately 5-6 meters in height, spaced approximately 20 meters apart. The wires were electrified.
11. The parts of the orchard that I have observed (approx. 80 per cent) are on relatively flat land. Some of the lychee trees look large and mature; others are small and look to be recently planted.

Observations on respondents' property, 2001

12. I first visited the orchard at 376 Volk Road, Murtanee, in January 2001, to investigate killing of flying-foxes by the electric grid, after I was informed of its existence. I observed there were electric grids on the orchard, but at the time there was no fruit on the trees. I informed the EPA of the existence of the grids. Under a Freedom of Information request to the QPWS in 2001, I learnt that no damage mitigation permit

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had ever been issued under the *Nature Conservation Regulations 1994* to the respondents for taking flying-foxes.

Observations on respondents' property, 2003

13. In November 2003 I briefly visited the respondents' property one afternoon and one morning, and checked part of just one of the electric grids on the orchard. The lychees were sparse. I observed one dead Black flying-fox on the electric grid that I checked and one underneath the grid which had injuries consistent with being shot. There were shotgun cartridges on the ground. I videotaped these observations and reported my findings to the QPWS. I was later informed that Mr Thomas was interviewed by a QPWS officer over the issue but that no further enforcement action was taken.

Observations on respondents' property, 16 and 17 December 2004

14. On 16 December 2004, near dusk at about 6 pm, in the company of Dominique Thiriet, I entered the respondents' property. I noted that there was fruit on the trees, most of it reddish in colour, indicating that it was ripe or close to ripe. The amount of fruit was variable: on some trees it was abundant, on others it was sparse. There were some white buckets and ladders in the orchard, suggesting that picking was in progress.
15. We initially went to the far northern section of the orchard to the first grid (grid 1) closest to the road. From here I could observe only part of that grid—the part of it to the north of the gully which transects the orchard. I observed dead flying-foxes on the ground beneath this grid. I searched along part of a second grid (grid 2) further to the west and found more dead flying-foxes on the ground. I videotaped each of the bodies observed. I then searched along 2 rows of lychee trees without electric grids, but observed no bodies. I did not search along the other 2 grids on the northern part of the orchard. Also on the ground in some places were shotgun cartridges. In particular, there were quite a few at the end of one of the rows of trees. I searched along about half of a grid (grid 5) on the southern side of the orchard and observed dead flying-foxes on the ground underneath the grid.
16. I videotaped the bodies of dead flying-foxes. There were no bodies observed on the grids checked. In total I checked no more than about one-quarter of the total grid length and observed 24 dead flying-foxes. I did not check all the grids because I was keen to leave the property quickly and did not consider it necessary to ascertain the total extent of killing.
17. Below is a table tallying the number of dead flying-foxes observed and video-taped underneath the grids checked.

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Table 1: Number of dead flying-foxes observed on 16 December 2004

Grid 1	Approx 150 m checked	12 bodies
Grid 2	Approx 150 m checked	5 bodies
Grid 5	Approx 100 m checked	7 bodies
Grids 3, 4, 6, 7	Not checked	
	Total 400 m checked	24 dead

18. All dead flying-fox bodies that I observed on the respondents' property were of the species *Pteropus alecto*, commonly known as Black flying-foxes.
19. The bodies of the Black flying-foxes that I observed were in various stages of decomposition, suggesting that they had been killed over a period of time. Some were fresh indicating they had been killed within the past day or so. Those bodies that were not too decomposed seemed intact, without any obvious injuries to the bodies apart from wing damage. They did not appear to have been shot. The wings in some cases had holes and broken and exposed wing bones. Given their location under an electric grid and the absence of other obvious external injuries I assumed that they had been electrocuted and the wing damage had been sustained during their removal from the grids. Although there were many shotgun cartridges on the ground, I did not see any bodies that showed evidence of pellet injury.
20. We left the respondents' property at about 6.30 pm.
21. I returned to the respondents' property with Dominique Thiriet the following morning on 17 December 2004, at about 2.30 am. We stayed outside the property in the car until it started becoming light. During this time I heard the noise of only a very few flying-foxes either in the orchard or in the forest next to the orchard.
22. At about 4.45 am, we entered the property and I searched part of each of 4 grids on the northern part of the property (grids 1, 2, 3 & 4) and along half a grid on the southern side (grid 5). In total I searched only one-third to one-half the total grid extent and observed a total of 5 dead flying-foxes on the electric grids. All those observed were Black flying-foxes (*Pteropus alecto*). I videotaped each of the dead flying-foxes. Below is a table tallying the number of dead flying-foxes observed and video-taped on the grids checked:

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Table 2: Number of dead flying-foxes observed on 17 December 2004

Grid 1	Approx 150 m checked	1 dead
Grid 2	Approx 150 m checked	2 dead
Grid 3	Approx 150 m checked	0 dead
Grid 4	Approx 150 m checked	1 dead
Grid 5	Approx 100 m checked	1 dead
Grids 6, 7	Not checked	
	Total 700 m checked	5 dead

23. The numbers of dead I observed on the grid are roughly consistent with the average numbers of flying-foxes the second respondent admits to having electrocuted per night with the 2004 arrangement of grids. I observed 5 dead on about one-third of the total extent of the grid, which extrapolates to a total of 15 dead. The second respondent admitted in his affidavit filed on 5 July 2005 to killing 13 per night of grid use.
24. I left the respondents' property at approximately 5.15 am.
25. Annexed to this affidavit and marked "CJB-4" is a true and correct copy of the videotape of my observations of dead flying-foxes (approximately 9 minutes) taken by me on 16 and 17 December 2004 on the respondents' property.

Observations on respondents' property, 2005

26. On 18 November 2005, with a colleague by the name of Tony Murphy, who lives in Melbourne, I returned to the respondents' property. We were present in the orchard from about 10.30pm to 3.30am. We spent some of that time walking along the orchard rows, some of it dozing. There was very little fruit on the trees. Some trees had no fruit at all, some had little green fruits, and a very few trees had a small amount of pink ripening fruit. This was consistent with what I saw of other orchards on the coast that year, and there apparently was a widespread crop failure. There were very few flying-foxes in the orchard. During the first hour I saw just 10 flying-foxes in total. In another approximate 2 hour block I saw less than 40 flying-foxes, but some of them were probably the same flying-fox seen twice. The flying-foxes I saw were flying away from trees which were both near the grid and away from the grid. There was no bias one way or the other. I did not see any flying-foxes hit the grid; I saw a few of them fly over or alongside a grid. Nor did I see any flying-foxes on the grids.

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Observations on respondents' property, 2006

27. On the evening of 16 November 2006, about 11 pm, I returned to the respondents' property. There looked to be quite a bit of fruit on the trees, some looking ripe. However, there were very few flying-foxes on the property. In the approximate 30 minutes I was on or near the property I saw only 4 flying-foxes. I walked about half the length of grids 5 and grids 6. There were no bodies on the grids. Because there were so few flying-foxes I left and did not check other grids.
28. I returned to the orchard on 20 November, about 4 am. I checked part of grid 1 and grid 5. Again, there were very few flying-foxes in the orchard. I observed just 1. I checked whether the grids were operating by pulling a jiggler (a long piece of polypipe connecting all the wires and hanging down within reach) with enough force to make wires connect with each other. When I have done this previously on operating grids there have been sparks indicating live wires. On this occasion there were no sparks, so I concluded the grid was not in operation. I heard a gunshot in the distance and left the orchard without checking other grids.

Ecology, reproduction and conservation status of Black Flying-foxes

29. I am very familiar with the species of *Pteropus alecto*, commonly known as Black flying-foxes, having cared for orphaned young and visited many colonies in Queensland. They are one of five mainland Australian indigenous species of flying-foxes. Only 2 species of flying-fox are known to presently inhabit the area of the respondents' property: Black flying-foxes and the nomadic Little Red Flying-foxes (*Pteropus scapulatus*). However, Spectacled flying-foxes (*Pteropus conspicillatus*) are known to inhabit the vicinity of Ingham, which is only xxkm from the respondents' property. So, it is possible that sometimes Spectacled flying-foxes also visit the property.
30. As their name suggests, Black Flying-foxes are black in colour. They may have brownish or reddish fur on the back of the neck and shoulders. They are readily distinguishable from Little Red Flying-foxes. Annexed to this affidavit and marked "CJB-5" is a true and correct picture, taken of a young Black Flying-fox that I cared for in 2000-2001.
31. Black Flying-foxes are largely found in coastal northern Australia and inland where there is permanent water. Their range extends from mid-Western Australia into northern New South Wales. Black Flying-foxes roost in colonies consisting of a few dozen to many thousands of individuals. Total numbers of Black Flying-foxes are unknown as no counts have been conducted.
32. Black Flying-foxes rest in their colony camps by day and forage at night, eating blossoms, fruits, and leaves. Flying-foxes are considered very important ecologically

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for their role in seed dispersal of fruits of native rainforest trees and pollination of native trees. Flying-fox scientists Dr Les Hall and Dr Greg Richards in their book *Flying-foxes: Fruit and Blossom Bats of Australia* (published by UNSW Press, 2000) say the following about the ecological role of flying-foxes:

“Overall, there is a great deal of evidence that megachiropterans, and particularly flying-foxes, play a vital pollination role in forest ecosystems in Australia” (p. 80).

“In Australia, flying-foxes and tube-nosed fruit bats may be the only seed dispersal agent for many rainforest trees, and therefore play an important role in the long-term survival of some tree species” (p. 80).

“Myrtaceae appear to be highly dependent upon flying-foxes in Australia for outcrossed pollination, and a large suite of rainforest tree species are dependent upon them for pollination and seed dispersal...” (p. 84)

33. Black Flying-foxes give birth to young from late September to November. For about the first 3 weeks of life, the young flying-fox is carried by its mother when she forages. After that, the young is left in a crèche at the flying-fox camp with other young or, as it gets older, on its roost branch, while the mother goes out to feed. Young flying-foxes are dependent on their mothers until at least January or February when they start to fly out with the colony to forage at night. Thus, any killing of a lactating female from September till February will most likely also result in the death of a young flying-fox from starvation.

34. Black Flying-foxes are listed as a common mammal under Schedule 5 of the *Nature Conservation (Wildlife) Regulation 1994*. This means that they are not considered to be under threat of extinction by the Queensland government. However, flying-fox populations are sensitive to imposed mortality such as culling on fruit orchards. Scientists Dr Allen McIlwee and Dr Len Martin have carried out population modeling for flying-foxes to determine the likely impacts of culling. In their paper “On the intrinsic capacity for increase of Australian flying-foxes (*Pteropus spp., Megachiroptera*)” published in *Australian Zoologist* in 2002, they state the following in the paper’s abstract:

“Flying-foxes are long-lived, seasonal breeders, with a rigid, well-defined breeding season that is largely or wholly genetically determined. Unlike opportunistic, highly reproductive species, such as rabbits or mice, female flying-foxes are unable to produce viable young before their second or third year of life, and are then capable of producing just one young per year. Such a breeding strategy will be successful only if flying-foxes are long-lived and suffer naturally low mortality rates...Our models show explicitly that flying-fox populations have a very low capacity for increase, even under the most ideal conditions.”

35. Annexed to this affidavit and marked “**CJB-6**” is a true and correct copy of McIlwee, A.P. and Martin, L. (2002) “On the intrinsic capacity for increase of Australian flying-foxes (*Pteropus spp., Megachiroptera*)”, *Australian Zoologist* 32(1): 76-100.

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Control of flying-foxes on orchards – impacts and options

36. Flying-foxes are regarded by many fruit growers as a pest because they eat and damage some commercial fruits, including lychees. This is to be expected as many commercial fruit trees are the descendants of wild fruit trees, say from Asia, which would rely on flying-foxes eating their fruit for seed dispersal. In North Queensland, flying-foxes are attracted to lychee orchards when the fruit is ripe or ripening from about November to January. The time during which lychee orchards are vulnerable to damage by flying-foxes may last from 6-8 weeks. Fruit growers may apply for a Damage Mitigation Permit under the *Nature Conservation Regulation 1994* to kill flying-foxes to protect commercial fruit crops. Up until mid-2001, fruit growers in Queensland could apply for a permit to kill flying-foxes by electrocution on an aerial electric grid.
37. In July 2001, the minister administering the *Nature Conservation Act 1992*, the Minister for Environment, determined to adopt a policy that the QPWS would not issue any more Damage Mitigation Permits for the lethal use of electric grids. This decision was made on the basis that the use of grids was cruel. Annexed to this affidavit and marked “**CJB-7**” is a true and correct copy of a letter from the Senior Policy Advisor to the Minister informing me of this decision. Also now shown to me and marked “**CJB-8**” is a true and correct copy of a QPWS document “Attachment 1. Humaneness of electric grids”, which discusses the grounds on which the QPWS decided that use of electric grids was not humane. The decision to not issue permits for lethal electric grids remains current, as stated in the QPWS Guideline *Damage Mitigation Permits for flying foxes*, current until September 2007. This Guideline states that permits can be issued for shooting Black flying-foxes. The maximum number is “30 for each month the permit is in force.” The maximum number of Black Flying-foxes that could be taken in Queensland during the 2005-06 season is 3500. Now shown to me and marked “**CJB-9**” is a true and correct copy of the Guideline *Damage Mitigation Permits for flying foxes*.
38. There are alternative and non-lethal methods available to fruit growers to protect their crops from damage by flying-foxes, in particular, netting. Now shown to me and marked “**CJB-10**” is a true and correct copy of extracts from a document entitled *To Net or Not to Net*, published by the Queensland Department of Primary Industries, which outlines crop protection options for fruit farmers.

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Observations of behaviour of flying-foxes with grids

- 39. Over the course of 5 years monitoring orchards with electric grids I have observed thousands of flying-foxes in orchards and in the vicinity of grids. I have sought to observe and understand flying-fox interactions with grids.
- 40. Some flying-foxes seem to blunder into electric grids, presumably having failed to see them. On about half-a-dozen occasions, I have seen flying-foxes leave a fruit tree or traverse the orchard and hit grid wires. (Similarly, flying-foxes sometimes become entangled on barbed wire fences presumably because they failed to see the fence.)
- 41. However, most flying-foxes that I have seen leave fruit trees or traversing an orchard have avoided the wires, either flying parallel to them or over them. They have often flown in a manner suggesting that they are aware of the location of the grids and deliberately avoiding them. I am not surprised by this, as even humans (with poorer night vision than flying-foxes) can see the grid wires from some metres away if there is some moonlight.
- 42. I have also observed in an orchard in which the electric grids are not operating that flying-foxes hang from the wires, using the grid as a roosting site. Thus, they have deliberately sought to make contact with the grid wires.

Potential for future deaths, injury and harm on the respondents' property

- 43. It is impossible to estimate how many flying-foxes will be killed, injured or harmed in future if the respondents operate their grids. Killing, injuring or harming flying-foxes on electric grids is indiscriminate and there is inherent potential for grids to kill, injure or harm extremely large numbers of flying-foxes. During my investigation of an orchard near Kennedy with 6.4 km of electric grid, I estimated deaths of 300-500 Spectacled Flying-foxes per night, based on observations on 4 different occasions over a period of about 2 weeks, evidence which was accepted in the Federal Court (*Booth v Bosworth* (2001) 114 FCR 39; [2001] FCA 1453). The respondents' grid system is approximately one-third the size of that grid.
- 44. The extent of killing, injury or harm on any one night of use of an electric grid is probably primarily influenced by the following factors:
 - (a) the number of flying-foxes that visit the orchard;
 - (b) the degree of familiarity of the flying-foxes with the grids, and the relative brightness of the night (and therefore visibility of the grids); and
 - (c) the degree of lethality of the grids.

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- 45. The number of flying-foxes visiting the orchard will depend on the number of flying-foxes within flying distance, the availability of other food and the relative attractiveness of the lychees compared to other sources of food.
- 46. The total number of deaths due to grid operation will also depend on the number of lactating females that are killed as their death results also in the death of their young. Injury or harm of lactating females by the electric grids may also result in the death of their young depending on the nature and severity of the injury or harm.

Declaration

47. The factual matters stated in this affidavit are true, to the best of my knowledge and belief. To the extent I have expressed opinions within my areas of expertise, I acknowledge that I have an overriding duty to the Court. I have made all enquiries considered appropriate in review of this matter. The opinions stated in the affidavit are genuinely held by me, and I have referenced all matters I consider to be significant. I understand my duty to the Court and believe I have complied with this duty to the best of my ability. To the best of my knowledge there are no readily ascertainable additional facts that would assist me in reaching more reliable conclusions.

Affirmed by Carol Jeanette Booth)
 at Brisbane this)
 9th day of February 2007)
 Before me:)

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Deponent

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