

**Submission regarding  
the electrocution of  
Spectacled Flying Foxes  
(*Pteropus conspicillatus*)  
on a lychee farm at  
Dallachy Creek,  
Kennedy, Queensland  
(EPBC Referral No  
2002/571)**

**By Dr Carol Booth**

**8 May 2002**

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\* Note that a video (of approximately 45 minutes duration) of the operation of the electric grids on Mr Bosworth’s lychee farm compiled from footage taken on 29 November 2000 and 3 December 2000 by Dr Booth has also been enclosed with this submission.

# Executive Summary

This is a public submission made under section 93 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) in relation to EPBC Referral No 2002/571 lodged on 14 February 2002 to “take or destroy approximately 5,500 Spectacled Flying-foxes (*Pteropus conspicillatus*) in the period November to December 2002 to protect a lychee orchard at Dallachy Creek, Kennedy, Queensland.” On 27 February 2002 the proposed action was declared to be a controlled action and the Part 3, Division 1 controlling provisions were declared to be sections 12 and 15A (World Heritage). On 27 March 2002 the method of assessment was determined to be assessment on preliminary documentation.

This submission reviews the preliminary documentation for the proposed action in light of the relevant provisions of the EPBC Act and the evidence provided to Federal Court in relation to the impacts on the world heritage values of the Wet Tropics World Heritage Area of Mr Bosworth’s electric grid system. Based upon this assessment of the relevant statutory provisions and the evidence of the impact of the proposed action, it is recommended that the proposed action be refused on the grounds that:

- The proposed action is inconsistent with Australia’s obligations under the World Heritage Convention.
- The proposed action is inconsistent with the Australian World Heritage management principles.
- The proposed action is inconsistent with Australia’s obligations under the Biodiversity Convention.
- The proposed action is inconsistent with the principles of ecologically sustainable development.
- The applicant is not a suitable person.
- It is not reasonably practicable to monitor or enforce any condition limiting the duration, extent, intensity or impact of the proposed action.
- Prudent and feasible alternatives to the proposed action exist.
- Economic and social matters do not otherwise justify approval of the proposed action.

In addition it is submitted that the available scientific evidence indicates that the Spectacled Flying Fox species should be listed as vulnerable under the EPBC Act and that the operation of electric grids to electrocute flying foxes should be listed as a key threatening process under the Act.

# Introduction

This is a public submission made under section 93 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) in relation to EPBC Referral No 2002/571 lodged on 14 February 2002 to “take or destroy approximately 5,500 Spectacled Flying-foxes (*Pteropus conspicillatus*) in the period November to December 2002 to protect a lychee orchard at Dallachy Creek, Kennedy, Queensland.” The applicant, Mr Rohan Brien Bosworth, proposes to take or destroy the Spectacled Flying Foxes by operating a large electric grid system (the electric grid) constructed on his property, of which the real property description is Lots 107 and 108, Crown Plan CWL652, Parish of Meunga, County of Cardwell, in the State of Queensland.

This referral of the operation of Mr Bosworth’s electric grid system follows an action in the Federal Court to restrain the mass culling of Spectacled Flying Foxes by Mr Bosworth and his mother, Mrs Frances Brien Bosworth. The action involved two stages consisting of an application for an interim injunction on 13 December 2000<sup>1</sup> and a full trial on 18-20 July 2001.<sup>2</sup> Based on the evidence presented in the trial hearing, which is enclosed with this submission, Justice Branson found on the balance of probabilities that:<sup>3</sup>

- The operation of the electric grid killed in the order of 18,000 Spectacled Flying Foxes in the 2000–2001 lychee season, of which 9,900–10,800 were females.
- In early November 2000 the total Australian population of Spectacled Flying Foxes did not exceed 100,000.
- The operation of the electric grid in the 2000–2001 lychee season killed roughly 20% of the Australian population of Spectacled Flying Foxes.
- Unless restrained the future operation of the electric grid would continue to cause the death of comparable numbers of Spectacled Flying Foxes subject only to this species becoming increasingly rare in those areas of Australia from which flying foxes may be attracted to the farm.
- The Spectacled Flying Fox is part of the world heritage values of the Wet Tropics World Heritage Area.
- The operation of the electric grid in the 2000–2001 lychee season had a significant impact on the population of Spectacled Flying Foxes.
- The probable impact of the operation of the electric grid, if allowed to continue on an annual basis during future lychee seasons, will be an ongoing dramatic decline in the Spectacled Flying Fox population leading to a halving of the population of Spectacled Flying Foxes in less than five (5) years, which would render the Spectacled Flying Fox an endangered species in the Wet Tropics World Heritage Area.

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<sup>1</sup> *Booth v Bosworth* [2000] FCA 1878 (Spender J, 13 December 2000). See also C McGrath, ‘Casenote: Booth v Bosworth’ (2001) 18 (1) EPLJ

<sup>2</sup> *Booth v Bosworth & Anor* [2001] FCA 1453 (Branson J, 17 October 2001). See also C McGrath, ‘The Flying Fox Case’ (2001) 18 (6) EPLJ 523.

<sup>3</sup> *Ibid.*

- The continued operation of the electric grid will have, or is likely to have, a significant impact on the world heritage values of the Wet Tropics World Heritage Area.

On 13 November 2001, after hearing submissions as to the appropriate form of order, Justice Branson ordered that:

"The Respondents be restrained and an injunction be granted to restrain the Respondents, whether by themselves or by their servants or agents or otherwise howsoever, from causing, procuring or allowing the death of or infliction of actual bodily harm to Spectacled Flying Foxes (*Pteropus conspicillatus*) by the connection or supply of electrical current to any electric grid erected on the Respondents' farming property situated at Lots 107 and 108, Crown Plan CWL652, Parish of Meunga, County of Cardwell, in the State of Queensland unless such action is the subject of an approval by the Minister of the kind mentioned in s 12(2)(a) and granted pursuant to Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth)."

As a result of this injunction Mr Bosworth initially referred the operation of the electric grid on 23 October 2001 (EPBC No 2001/480). However, this referral was withdrawn on 13 February 2002 and a second referral made on 14 February 2002 (EPBC No 2002/571). On 27 February 2002 the proposed action was declared to be a controlled action and the Part 3, Division 1 controlling provisions were declared to be sections 12 and 15A (World Heritage). On 27 March 2002 the method of assessment was determined to be assessment on preliminary documentation. The period for public submissions on the preliminary documentation closes on 14 May 2002.

In deciding whether to approve or refuse the proposed action its impacts on the world heritage values of the Wet Tropics World Heritage Area and biodiversity generally must be assessed in accordance with the relevant provisions of the EPBC Act and the *Environment Protection and Biodiversity Conservation Act 2000* (Cth) (the Regulations). Following a brief section defining the proposed action, this submission will address the impacts of the action in accordance with the relevant provisions of the Act and the regulations. The particular issues that will be addressed are:

- Australia's obligations under the World Heritage Convention.
- Australia's World Heritage management principles.
- Australia's obligations under the Biodiversity Convention.
- The principles of ecologically sustainable development.
- Whether the applicant is a suitable person.
- Whether it is reasonably practicable to monitor or enforce any condition limiting the duration, extent, intensity or impact of the proposed action.
- The existence of prudent and feasible alternatives to the proposed action.
- Economic and social matters.

# The Proposed Action

The electric grid system proposed to be operated consists of a series of 14 aerial electric grids constructed within a 60 hectare lychee orchard on Mr Bosworth's property. The electric grids consisted of 20 horizontal electrified wires, spaced 25cm apart, strung between poles at 4-9m height (slightly above tree-top level), each grid stretching for 470-820m in length, a total of 6.4km of electric grids. When flying foxes collide with any two of the wires (which are alternated earth – live), they create a circuit and are electrocuted by a high voltage current.<sup>4</sup>

A video of the operation of the electric grids on Mr Bosworth's lychee farm compiled from footage taken on 29 November 2000 and 3 December 2000 by Dr Booth has also been enclosed with this submission. This video was used in evidence in the Federal Court hearings to document the nature and scale of the death and injury of Spectacled Flying Foxes caused by the operation of the electric grid.

While the current referral (i.e. EPBC No 2002/571) is to operate the electric grid system during the lychee harvest season in November and December 2002, there is no undertaking by the applicant that this will be the only season for which he will apply to operate the electric grid. Nor is there any indication in the preliminary documentation that the applicant intends to install and operate any other form of flying fox deterrent to protect his lychee crop. The decision on this referral must therefore assume that if a decision is made to approve the operation of the electric grid there will be subsequent applications in future years to operate the electric grid system. The true potential extent of the action and its impacts should be assessed on this basis.

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<sup>4</sup> See generally P Rigden, J Page and J Chapman, *To Net or Not to Net? Flying Fox Control in Orchards Through Netting Protection*, Queensland Department of Primary Industries, Brisbane, 2000, pp 29 and 46.

# Evidence of the Impacts of the Proposed Action

The findings of fact made by Justice Branson in the Federal Court decision summarised above were based on the evidence of witnesses that gave evidence at the trial on 18-20 July 2000. The vast majority of that evidence was by affidavit. The most relevant affidavits have been attached to this submission as Appendices 1-6. In addition the transcript of the evidence of Dr Martin, in which a number of important corrections and clarifications were made of Dr Martin's affidavit, has been included in Appendix 5.

The likely impacts of the proposed action on the Spectacled Flying Fox species and world heritage values of the Wet Tropics World Heritage Area may be assessed on the basis of the evidence that the Federal Court accepted in granting the injunction to restrain the operation of the electric grids. The affidavits of Dr Carol Booth, Mr Allan McIlwee, Mr Greg Richards, Ms Olivia Whybird, Dr Len Martin and Mr Peter Valentine are attached as Appendixes 1-6 to this submission. Their evidence can be summarised as follows:

- The operation of the electric grids caused the death of an estimated 409, 499, 305 and 297 Spectacled Flying Foxes (excluding juvenile Spectacled Flying Foxes which starved to death following the death of their mothers) on 21 November, 22 November, 29 November and 3 December respectively, from which an inference can be drawn of estimated death rates for the duration of the annual operation of the electric grids;<sup>5</sup>
- The total species' population of the Spectacled Flying Fox in or associated with the Wet Tropics World Heritage Area was estimated over a 3 year period to be of the order of 113,390 in November 1998, 74,440 in November 1999 and 79,980 in November 2000;<sup>6</sup>
- The biological features of the Spectacled Flying Fox species make it vulnerable to decline due to the scale and repetitious nature of the operation of the electric grids, including that the Spectacled Flying Fox:
  - (a) is a seasonal breeder with peak births and lactation occurring at the same time as the operation of the electric grids annually in November-December. Consequently, the effects of electrocution will be much greater than is evident from counts of dead bats on the electric grids due to foetal deaths, abortions of injured females and death of suckling young;
  - (b) population modelling of the dynamics of changes in the Spectacled Flying Fox population over time associated with the continuing and cumulative impact of the operation of the electric grids each year indicates that this action will cause rapid decline in a female population of 100,000-200,000 Spectacled Flying Foxes (i.e. a total population of 200,000-400,000 male and female Spectacled

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<sup>5</sup> Affidavit of Dr Carol Booth, 23 March 2001, p5 para26 (see Appendix 1 to this submission).

<sup>6</sup> Exhibit F (November 2000 Spectacled Flying-fox Survey) to affidavit of Ms Olivia Whybird (see Appendix 4). Note that the unpublished November 2001 survey data indicates the total population of Spectacled Flying Foxes in the Wet Tropics is approximately 187,000 due the location of two additional significant flying fox camps (O Whybird, pers comm.).

Flying Foxes assuming an equal sex ratio), halving the population size in about 5 years.<sup>7</sup>

“13.1 It is predicted that any continuation of the seasonal culling of [Spectacled Flying Foxes] at the rates estimated to occur in the orchard of Mr Rohan Brien Bosworth will lead to rapid declines in populations of [Spectacled Flying Foxes] in the immediate vicinity, estimated to range in size from 50,000 to 800,000 [females], and with the most likely estimate [of a female population that the additional mortality caused by the operation of the electric grids will send into rapid decline] being over 200,000 [females]

13.2 Furthermore, because of the mobility of [Spectacled Flying Foxes], the impacts of persistent culling in the Bosworth orchard and resultant population decline will spread over broad areas of the Wet Tropics World Heritage Area.”<sup>8</sup>

- the Spectacled Flying Fox is a rainforest specialist species and is typically located in or adjacent to rainforest, now largely contained within the Wet Tropics World Heritage Area;
- the Spectacled Flying Fox fulfils an important role in the ecological and evolutionary processes of the rainforests with which it is associated. In particular its role in pollination and seed dispersal is important for maintaining species and community diversity in the Wet Tropics World Heritage Area. This role may be summarised as follows:<sup>9</sup>

“[T]he Spectacled Flying Fox has a role in the seed dispersal of rainforest canopy plants through:

- The dispersal of fruit containing seed/s via the ‘raiders and residents’ model
- The dispersal of seeds themselves via excretion
- The knocking down of ripe fruit, making it available to ground dwelling seed dispersers. ...

Through the pollination and (especially) the seed dispersal capabilities of the Spectacled Flying Fox, this animal may be integral to the maintenance of the viability and regeneration of a suite of rainforest species. ...

Future culling of Spectacled Flying Foxes, through electrocution at the Bosworth Farm, at any level, will further erode the size of the vertebrate disperser pool, reducing the potential for rainforest canopy plants in the [Wet Tropics World Heritage Area] to reproduce. No other conclusion can be reached.”

- The Spectacled Flying Fox is a part of the world heritage values of the Wet Tropics World Heritage Area.<sup>10</sup>

The video of the operation of the electric grids on Mr Bosworth’s lychee farm enclosed with this submission documents the large numbers of Spectacled Flying Foxes killed and injured by the operation of the electric grid.

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<sup>7</sup> Note that the unpublished 2001 Spectacled Flying Fox survey data indicating a total population of approximately 187,000 Spectacled Flying Foxes in the Wet Tropics is well within the predicted population sizes of 200,000-400,000 (male and female) Spectacled Flying Foxes that would be likely to suffer rapid decline due to operation of the electric grid on Mr Bosworth’s lychee farm.

<sup>8</sup> Affidavit of Dr Leonard Martin, 23 March 2001, p7 (see Appendix 5).

<sup>9</sup> Affidavit of Mr Gregory Richards, 23 March 2001, pp6-14 (see Appendix 3).

<sup>10</sup> Affidavit of Mr Peter Valentine, 21 March 2001 (see Appendix 6).

# Comments on the Preliminary Documentation

In the preliminary documentation submitted by Mr Bosworth in support of his referral, he makes a number of assertions that require further analysis.

## *Counts of Spectacled Flying Fox deaths*

At page 4 of the correspondence from the applicant's lawyers, Dibbs Barker Gosling Lawyers, dated 14 January 2002 responding to a request for further information made by Environment Australia and included in forming part of the preliminary documentation the applicant asserts that "the approximate number of fatalities determined by Justice Branson was based upon an extrapolation of Ms Booth's personal count of dead flying-foxes located on one stretch of the grid system on one night". The affidavit of Dr Booth dated 23 March 2001 provided in Appendix 1, the video enclosed with this submission and the affidavit of Allen McIlwee dated 23 March 2001 provided in Appendix 2 of this submission show that this statement is not correct. The counts taken of the culling of Spectacled Flying Foxes were taken across 4 nights during a two-week period. Two of those counts covered half or more of the total length of the grids on the property, inspection of uncounted grids involved all of the electric grid lines other than a small section located nearest to the dwelling house on the property and revealed a similar density of dead flying foxes on the grids. The counts were conservative in not including dead flying foxes which had fallen from the grids and which were estimated to be about 10% of those on the grids. The counts are submitted to be representative of the nightly culling occurring on the farm from which an inference can be drawn of the number of Spectacled Flying Foxes killed during the 6-8 week lychee season (plus an addition pre-season period when the grids are operated to cull flying foxes feeding on unripened fruit).

Although fluctuations would be expected in the rate of mortality each year due to a range of environmental factors, such fluctuations can not be predicted, therefore, even if the sampling undertaken by Dr Booth and Mr McIlwee during November-December 2000 occurred during a year of high mortality rates those counts remain representative of the potential mortality each year. In the absence of reliable data of higher or lower rates of mortality from the electric grid it is submitted that the rate observed by Dr Booth (Appendix 1) and Mr McIlwee (Appendix 2) should be used to estimate the potential impact of the annual operation of the electric grids.

There is no basis or evidence provided for Mr Bosworth's assertions at page 1-2 of the correspondence from his lawyers that:

- "he is capable of providing a more accurate estimate of the number of flying-foxes taken using the electric grid during a season";
- "he is also aware of the percentage of those which are females";<sup>11</sup>
- "the claimant maintains that 5,500 is simply a reasonable average figure for culling";

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<sup>11</sup> While on Mr Bosworth's property Dr Booth and Mr McIlwee inspected and sexed a small number of dead bodies lying under the electric grid. They did not note any preponderance of males but sex was not recorded because it was not considered to be at issue at that stage.

- “the number of females taken by the electric grid is in the vicinity of 10%”;
- “the taking of 5,500 Spectacled Flying-foxes over the harvest period of November-December is a sustainable reduction in the population”.

These assertions should therefore be rejected.

It may also be noted that Mr Bosworth and his lawyers are careful not to state at any point how many Spectacled Flying Foxes Mr Bosworth killed in the 2000 season or in previous years. Mr Bosworth admits using the electric grids since 1986. If the counts taken by Mr Bosworth were as accurate as is asserted this information would assist the assessment of this application.<sup>12</sup> The logical inference that may be drawn about the reason for this omission is that Mr Bosworth is conscious to avoid incriminating himself for offences against the EPBC Act during November–December 2000 and against the *Nature Conservation Act 1992* (Qld) in that year and in earlier years. Given that Mr Bosworth only held a permit under the *Nature Conservation Act 1992* (Qld) to take Spectacled Flying Foxes during the 1999 lychee season and part of the 2000 lychee season, the assertion on page 2 of the correspondence from the applicant’s lawyers that “the claimant maintains that 5,500 is simply a reasonable average figure for culling” suggests that Mr Bosworth has been flagrantly breaching the *Nature Conservation Act 1992* (Qld) for some time.

At page 2-3 of the correspondence from Mr Bosworth’s lawyers it is asserted that the count data provided by Ms Olivia Whybird (see Appendix 4) “cannot be relied upon as definitively reliable”. Ironically and showing the lack of merit in these assertions, the quote from an environmental consultant dated 13 December 2000 provided with the correspondence does not suggest an alternative method for assessing the population of Spectacled Flying Foxes that, as the applicant asserts, suggests “an alternative and more reliable technique”. To the contrary, that consultant proposes that “the methodology employed would consist of either counts of bats flying out from known roosts on dusk or counts from the ground in the case of smaller or inaccessible camps”, which is precisely the methodology employed in Ms Whybird’s surveys.

At page 3 of the correspondence from Mr Bosworth’s lawyers reliance is also placed on evidence from Dr Tidemann that “the species should be viewed as data deficient or insufficiently known” but this overlooks the large sampling effort undertaken in the surveys conducted over several years by Ms Whybird and her associates. Even if the surveys undertaken by Ms Whybird and her associates are out by a considerable amount and a number of other, as yet unlocated camps exist, the population modeling of Dr Martin provided in Appendix 5 of this submission indicates that the operation of Mr Bosworth’s electric grids will cause rapid declines in Spectacled Flying Fox populations ranging in size from 50,000 to 800,000 females (i.e. a population of 100,000 to 1,600,000 male and females assuming an equal sex ratio). Therefore, even if new survey data indicates that the population of Spectacled Flying Foxes is considerably larger than current estimates indicate, the immense scale of death and injury caused by the operation of the electric grid is capable of causing a large impact on the population of Spectacled Flying Foxes in and associated with the Wet Tropics World Heritage Area particularly due to the timing and repetitious nature of the operation of the electric grid.

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<sup>12</sup> In addition, if Mr Bosworth had any records of flying foxes taken, he was required by the rules of discovery to disclose them during the Federal Court case. No records were disclosed by him.

### ***Location of Spectacled Flying Foxes***

At page 3 of the Referral Form, Mr Bosworth asserts that the Spectacled Flying Foxes attacking his lychee orchard (and which he therefore proposes to kill using his electric grid) originate from a camp on private property situated at Murray Upper outside the Wet Tropics World Heritage Area. The only evidence provided by Mr Bosworth is his personal knowledge. It is submitted that this evidence is insufficient to establish the source of the Spectacled Flying Foxes affected by the operation of the electric grid. Even if it could be established that all or most of the Spectacled Flying Foxes killed or injured by the operation of the electric grid were from this one location such a fact would be largely immaterial to establishing the impact of the operation of the electric grid on the world heritage values of the Wet Tropics World Heritage Area given:

- the highly mobile nature of Spectacled Flying Foxes;<sup>13</sup>
- the effect of creating a vacant niche should the Spectacled Flying Foxes located at the Murray Upper camp are killed thereby drawing in animals from other areas;<sup>14</sup>
- the fact that Spectacled Flying Foxes associated with the Wet Tropics World Heritage Area are part of the world heritage values of the Wet Tropics World Heritage Area whether they are geographically located inside or outside of the Wet Tropics World Heritage Area.

### ***Failure to address the likely impacts of the proposed action***

It may be noted that at page 3 of the Referral Form in response to the question to describe the nature and extent of the likely impacts on the world heritage values of a declared World Heritage property, the applicant declines to answer the question asked, which is the critical issue for determination in assessing the referral. At no point in the preliminary documentation does the applicant address this issue.

### ***Non-lethal operation of the electric grid***

In section 6 of the Preliminary Information Form, the applicant suggests that there are few options other than the operation of the electric grid to prevent losses of lychee fruit due to flying fox attack. The applicant suggests that “it may be possibly [sic] to lower the voltage or amperage of the electrical current connected and supplied to the grid which is not of a magnitude which is, or which is likely to be, lethal to any Spectacled flying-fox which may come into contact with the grid.” No evidence is provided for what reduced voltage it is proposed to operate the electric grid nor is any evidence provided as to the effect of injuries to pregnant or lactating females at lower levels. In *Booth v Bosworth* [2001] FCA 1453 at paragraph 27 Justice Branson found:

“Dr Martin’s evidence, which I accept, is that the lychee season in Queensland coincides with the peak of the birth and lactation period for Spectacled Flying Foxes, and for this reason the effects of electrocution will be much greater than is evident from counts of dead bats on the Grid because of foetal deaths, abortions or injured females and the death of suckling young.”

These findings reflect the unchallenged evidence of Dr Martin that the effects of the operation of the electric grids will result not only in outright death of Spectacled Flying Foxes on the electric grids but also foetal deaths, abortions of injured females

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<sup>13</sup> See the Affidavit of Dr Martin, 23 March 2001 (Appendix 5).

<sup>14</sup> Ibid and Affidavit of Mr Richards, 23 March 2001 (Appendix 3).

and the death of suckling young.<sup>15</sup> The unchallenged evidence of Dr Martin assumed an additional 10% mortality was reasonable for modeling the impact of foetal deaths, abortions of injured females and the death of suckling young on the population dynamics of Spectacled Flying Foxes.<sup>16</sup>

The failure of the applicant to state the reduced voltage at which he proposes to operate the electric grid at a ‘non-lethal’ level, to provide any evidence that this voltage is non-lethal or to address the issue of injuries to females leading to foetal deaths, abortions and death of suckling young means that it is not possible to approve the operation of the electric grid subject to a condition that the electric grid must only be operated at a ‘non-lethal’ voltage.

At page 4 of the correspondence from the applicant’s lawyers, dated 14 January 2002 responding to a request for further information made by Environment Australia it is suggested that approval be given for the testing of operation of the electric grid system at a reduced voltage, allowing for the possibility of Spectacled Flying Fox fatalities during the testing stage. On page 2 of the same correspondence the applicant’s lawyer admitted that it was “still extremely difficult to extrapolate the number of indirect deaths which may be caused due to foetal deaths, abortions and the possibility of such indirect deaths”.

### ***Economic and social issues***

In a sworn application to the Queensland Parks and Wildlife Service received on 22 November 2000 for a damage mitigation permit under the *Nature Conservation Regulations* 1994 (Qld) to take 5,500 Spectacled Flying Foxes (for which QPWS granted a permit to take 500 Spectacled Flying Foxes), Mr Bosworth stated that the yearly monetary loss experienced due to flying fox and bird damage to his orchard as \$200,000. Note that this annual loss was stated to occur even with the operation of the electric grid. The figure is presumably based on 50% crop losses of the applicant’s annual lychee crop.

In section 6 of the Preliminary Information Form the applicant suggests that should he be unable to use his electric grid:

- the lychee farm will probably remain unutilized;
- the value of output directly from the lychees at his property is likely to decrease by some \$418,000 annually (the value of the total loss of the annual lychee crop);
- the applicant will suffer major economic cost;
- incomes earned directly from the applicant’s lychee operations by employees and contractors would fall by more than \$150,000;
- the number of part-time or temporary jobs at the farm will decline by almost 200;
- the wider annual gross impacts would be likely to be a decline of \$663,000 per year in the value of total production in the local economy and a likely fall of around \$207,000 per year in the income throughout the local area.

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<sup>15</sup> Affidavit of Dr Martin, 23 March 2001 (Appendix 5) paragraphs 1.2, 3.2, 4.1 and 12.4.

<sup>16</sup> Ibid, paragraph 12.4-12.5.

The supporting study or methodology is not provided with the preliminary documentation but reference is made to a document entitled ‘Economic Impact Assessment of an Injunction Restraining Operations at Bosworths’ Lychee Farm at Cardwell, North Queensland’ written by EconoLaw Pty Ltd and dated June 2001. Review of that document (which was exchanged by the applicant but not ultimately relied upon as an expert report in the Federal Court) indicates that its methodology is based on the false premises or assumptions that there is no viable alternative to protect the crop other than the operation of the electric grid and that if Mr Bosworth is not allowed to operate the electric grid he will suffer 100% crop loses.

The assumption that no viable alternative to the operation of the electric grid exists to protect the applicant’s lychee orchard from attack from flying foxes ignores the existence of various forms of netting, audile and other deterrents. The court transcript of the evidence of Mr Graham Minifie, a protective netting expert called as a witness in the *Booth v Bosworth* trial, is attached as Appendix 7. This evidence suggests that:

- Mr Minifie inspected the applicant’s property on 7 June 2001 to assess the viability and cost of installing a net to exclude flying foxes from the applicant’s fruit orchard;
- The cost of installing a full exclusion net to protect the entire lychee orchard from flying foxes is approximately \$1,000,000;
- The net can be insured (including against cyclone damage) for approximately \$20,000 per year;
- The cable and wire system of the net under general conditions lasts for approximately 40 years while the netting itself has a UV pro rata warranty for 10 years;
- There are essentially no maintenance costs for the netting once installed until components of the system need replacing after approximately 10 years;
- The capital costs of netting can be offset by leasing the nets over a five-year period to allow the grower to spread out the payments;
- The net would take 16 staff approximately 6 weeks to install.

In summary, the financial figures provided by the applicant do not support his assertion that the only viable option to protect the lychee orchard from flying foxes is the use of his electric grid system. He has claimed previously that he suffers \$200,000 annual losses from flying fox and bird damage. Note that this annual loss was stated to occur even with the operation of the electric grid. He now claims that he will suffer some \$418,000 losses annually if he is not able to operate his electric grid. Based on these figures installation of a full exclusion net costing approximately \$1,000,000 to protect the applicant’s lychee crop will pay for itself in approximately 3-6 years. Based on an assumed life expectancy of such a full exclusion net of approximately 10 years these figures indicate that the applicant would be substantially better off financially to install full exclusion netting. There is therefore no basis to the applicant’s argument of financial detriment. Since this is also the basis for the applicant’s claim of social costs to the wider community through a “multiplier effect”, there is also no valid basis for the applicant’s argument of social costs associated with refusal of the application to operate the electric grid.

# Assessment of the Proposed Action under the EPBC Act

It is submitted that assessment of the proposed action under the EPBC Act and the Regulations indicates that the proposed action should be refused. The principal reasons for such are refusal are set out in this section.

## **Inconsistency with Australia's obligations under the World Heritage Convention**

Section 137 of the EPBC Act provides that in deciding whether or not to approve for the purposes of section 12 or 15A the taking of an action, the Minister must not act inconsistently with Australia's obligations under the World Heritage Convention. These obligations can be summarised as obligations to identify, protect, conserve, present, transmit to future generations and, if appropriate, rehabilitate the world heritage values of the property.

The Spectacled Flying Fox population in and associated with the Wet Tropics World Heritage Area forms part of the world heritage values of that Area in two ways:

- the population (and each of its members) forms part of the world heritage values of the Wet Tropics World Heritage Area;<sup>17</sup> and
- the population (and each of its members) forms part of and contributes to the ecological and evolutionary processes (such as pollination and seed dispersal) within the Wet Tropics World Heritage Area, such processes also being part of the world heritage values of the Wet Tropics World Heritage Area and essential for the maintenance of other species which are part of the world heritage values and the integrity of the Wet Tropics World Heritage Area.<sup>18</sup>

In relation to the impact of the operation of the electric grid on the world heritage values of the Wet Tropics World Heritage Area, Dr Valentine concluded:<sup>19</sup>

“Flying foxes form part of the biodiversity values for which the Wet Tropics of Queensland was formally nominated and listed. ... Any threat to the existence of the species is a threat to the outstanding universal value of the property.”

“Any significant loss of flying foxes within the World Heritage Area (or sufficiently adjacent to it so that the population is part of the plant reproductive ecology) gives rise to serious concern for the possible destruction of world heritage attributes with form the outstanding universal value for which the site is listed and which Australia is committed to protect.

The World Heritage Convention also addresses the question of integrity associated with criteria for listing. Ecological integrity is the capacity of an ecosystem to recover from disturbance and to maintain the ecological processes which produce it. It is evident that a loss of significant numbers of flying foxes would give rise to concerns about potential loss of integrity of the Wet Tropics World Heritage Area.”

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<sup>17</sup> Affidavit of Mr Peter Valentine, 21 March 2001 (Appendix 6). For an analysis of the meaning of “world heritage values of a declared World Heritage property” in s12 of the EPBC Act and specifically in relation to the case of *Booth v Bosworth*, see C McGrath ‘The Flying Fox Case’ (2001) 18 (6) EPLJ 540 at 554-557.

<sup>18</sup> Affidavit of Mr Peter Valentine, 21 March 2001 (Appendix 6) and

<sup>19</sup> Ibid, p9 and Affidavit of Mr Peter Valentine, 7 December 2001 p2.

Given that the Spectacled Flying Foxes population in and associated with the Wet Tropics World Heritage Area is part of and contributes to the world heritage values (including the integrity) of that Area, the nature, scale and likely impact of the proposed action on this population is clearly inconsistent with Australia's obligations under the World Heritage Convention.

As established in the evidence presented to the Federal Court that is enclosed with this submission, the Spectacled Flying Fox species is particularly susceptible to decline due to its relatively small population size, its biological features and the life history of the species (e.g. breeding season coincides with the proposed operation of the electric grids). In addition to other threats to the species such as continued habitat clearing on the coastal lowlands, there is evidence that the operation of the applicant's electric grids alone will cause a significant reduction in the total population of the Spectacled Flying Fox species both in the local area of the applicant's farm and the larger area of the Wet Tropics World Heritage Area. Unless prevented, the future operation of the electric grid can be expected to cause the death of comparable numbers of Spectacled Flying Foxes as occurred in November-December 2000 subject only to this species becoming increasingly rare in the area from which flying foxes may be attracted to the farm. This effect will be most acute in the local area of the farm but through the vacant niche effect will be expected to be felt across the whole of the species distribution within the Wet Tropic's World Heritage Area.

Based on these impacts, the proposed action is clearly inconsistent with Australia's obligations under the World Heritage Convention to identify, protect, conserve, present, transmit to future generations and, if appropriate, rehabilitate the World Heritage values of the property. Consequently, it is submitted that the proposed action must be refused in accordance with section 137 of the EPBC Act.

### **Inconsistency with Australia's World Heritage management principles**

Schedule 5 of the Regulations sets out Australia's World Heritage management principles pursuant to section 323 of the EPBC Act. Regulation 1.01 of Schedule 5 states that:

“the primary purpose of management of natural heritage and cultural heritage of a declared World Heritage property must be ... to identify, protect, conserve, present, transmit to future generations and, if appropriate, rehabilitate the World Heritage values of the property”.

Similarly, regulation 3.04 of Schedule 5 states that:

“an action should not be approved if it would be inconsistent with the protection, conservation, presentation or transmission to future generations of the World Heritage values of the property.”

Based on the analysis of the inconsistency of the proposed action with Australia's obligations under the World Heritage Convention provided in the previous section, the proposed action is inconsistent with these management principles and on this basis also the proposed action should be refused.

### **Inconsistency with Australia's obligations under the Biodiversity Convention**

On the basis of the evidence of Dr Martin, which was presented at the Federal Court trial and led the court to find that “the probable impact of the operation of the electric

grid, if allowed to continue on an annual basis during future lychee seasons, will be an ongoing dramatic decline in the Spectacled Flying Fox population leading to a halving of the population of Spectacled Flying Foxes in less than five (5) years, which would render the Spectacled Flying Fox an endangered species in the Wet Tropics World Heritage Area”, it is submitted that Australia’s obligations under the Biodiversity Convention are also relevant to the decision of whether to approve the proposed action.

While there are a range of obligations imposed by the Biodiversity Convention, it is suggested that the most relevant for the proposed action are found in Article 8 of the Biodiversity Convention. This Article imposes a general obligation on Australia to conserve biodiversity (in both terrestrial and marine ecosystems):

#### **Article 8**

##### ***In-situ conservation***

Each Contracting Party shall, as far as possible and as appropriate:

- (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity; ...
- (c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas with a view to ensuring their conservation and sustainable use;
- (d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
- (e) Promote the environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas; ...

It is submitted that based on the evidence of the effect of allowing the operation of Mr Bosworth’s electric grid on the population dynamics of the Spectacled Flying Fox, the grant of an approval in this case would be inconsistent with Australia’s obligations under Article 8 of the Biodiversity Convention. This provides an additional ground upon which the application should be refused.

#### **Inconsistency with the principles of ecologically sustainable development**

Section 136(2)(a) of the EPBC Act requires the Minister to take into account the principles of ecologically sustainable development. These principles are defined in section 3A of the Act as follows:

##### ***(a) Decision-making should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations***

The application to operate the electric grids is, at most, to achieve a short-term economic outcome for the applicant. In fact the evidence of the cost of installing full exclusion netting weighed against the loss of fruit that occurs even with the operation of the electric grid (\$200,000 annually) or the complete cessation of the lychee farm (\$418,000 annually) indicates that a full exclusion net for the entire orchard would pay for itself within 3-6 years after which the farm would experience a net economic benefit of approximately \$200,000 per year (based on the applicant’s own financial figures). Considering these financial figures continued operation of the electric grid would be purely a short-term economic decision that would be inconsistent with the long-term economic, environmental, social and equitable considerations of the case.

- (b) If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation***

Although the survey data collected over several years by Ms Whybird and associates is considered of a high standard, there is inherent difficulty in surveying a highly mobile and widely distributed species such as the Spectacled Flying Fox. The population modeling of Dr Martin provides additional evidence of the threat of serious and irreversible environmental damage posed by the operation of the applicant's electric grid. The facts as well as precaution indicates that the operation of the electric grid should not be allowed and the application should be refused.

- (c) The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations***

Approval of the operation of the electric grid would be contrary to inter-generational equity as it would not ensure that the health, diversity and productivity of the Wet Tropics World Heritage Area and associated habits of the Spectacled Flying Fox species is maintained or enhanced for the benefit of future generations. The approval of the operation of the electric grid is for short-term economic gain of the applicant.

- (d) The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making***

Approval of the operation of the electric grid would be contrary to the conservation of biological diversity and ecological integrity in and associated with the Wet Tropics World Heritage Area.

- (e) Improved valuation, pricing and incentive mechanisms should be promoted.***

The applicant relies upon an economic argument that is not supported by the evidence he has provided which indicates that installation of full exclusion netting would pay for itself within 3-6 years after which the farm would enjoy an improved annual return of approximately \$200,000. On purely economic terms the application should be rejected. When improved valuation, pricing and incentive mechanisms are considered the value of Spectacled Flying Foxes that would be destroyed or injured by the operation of the electric grids clearly outweighs any short-term financial gain by the applicant through the operation of the electric grid.

### **Whether the applicant is a suitable person**

Section 136(4) of the EPBC Act provides that “in deciding whether or not to approve the taking of an action by a person, and what conditions to attach to an approval, the Minister may consider whether the person is a suitable person to be granted an approval, having regard to the person's history in relation to environmental matters.”

The applicant had operated his electric grid system annually since 1986 prior to November-December 2000 (other than years when the lychee crop failed and November-December 2001 when the Federal Court injunction was in force). His preliminary documentation indicates that based on those years of operation “5,500 is

simply a reasonable average figure for culling”. However, it appears that the only time the applicant held a damage mitigation permit under the *Nature Conservation Act* 1992 (Qld) to take Spectacled Flying Foxes was during November-December 1999 and part of the November-December 2000 season. It would therefore appear that he had been breaching the *Nature Conservation Act* 1992 (Qld) for many years including November-December 2000.

Mr Bosworth indicated in an affidavit tendered at the hearing of the interim injunction that he had been operating the electric grid since 2 November 2000. He did not hold a damage mitigation permit as required under section 88 of the *Nature Conservation Act* 1992 (Qld) at that time. The fact that he had applied for a damage mitigation permit received by the Queensland Parks and Wildlife Service on 22 November 2000 to take 5,500 Spectacled Flying Foxes indicates clearly that he was both aware of the legal requirement to hold a damage mitigation permit to kill or injure Spectacled Flying Foxes and the large number of Spectacled Flying Foxes that the operation of the electric grid was expected to kill. His operation of his electric grids over several weeks in contravention of section 88 of the *Nature Conservation Act* 1992 (Qld) was clearly unlawful and constituted an offence against that Act.

Based upon documents obtained from the Queensland Parks and Wildlife Service under the *Freedom of Information Act* 1991 (Qld) it has been reported that Mr Bosworth had admitted taking up to 500 spectacled foxes on the electric grid in the fortnight prior to obtaining a damage mitigation permit according to a senior QPWS officer’s transcript of an interview with Mr Bosworth.<sup>20</sup> The Minister may wish to confirm this issue by seeking confirmation of it from the Queensland Parks and Wildlife Service. This admission indicates a deliberate breach of the *Nature Conservation Act* 1992 (Qld) for commercial gain.

On 24 November 2000, Mike Pople of the Queensland Parks and Wildlife Service issued a damage mitigation permit to Mr Bosworth to take 500 Spectacled Flying Foxes during the remainder of the season. A further permit was subsequently issued to take a further 500 Spectacled Flying Foxes, making the number of Spectacled Flying Foxes permitted to be taken during the November-December 2000 lychee season a total of 1000 animals. Based on the observations of Dr Carol Booth and Mr Allen McIlwee, Mr Bosworth grossly exceeded that permitted number. Those observations indicate that Mr Bosworth killed approximately 12,000-28,000 Spectacled Flying Foxes during the 6-8 week lychee season. Justice Branson found that the operation of the electric grid killed in the order of 18,000 Spectacled Flying Foxes in that period of which 9,900–10,800 were females. Based on these facts it is clear that Mr Bosworth committed a flagrant, deliberate and calculated breach of the *Nature Conservation Act* 1992 (Qld) during November-December 2000.

In addition, the affidavit of Dr Booth (Appendix 1, paras 28-31) also evidences that on 7 December 2000, prior to commencing the application in the Federal Court for an injunction, Dr Booth telephoned Mr Bosworth and informed him that the operation of his electric grid was a contravention of the *Nature Conservation Act* and was causing a significant impact on the world heritage values of the Wet Tropics World Heritage Area in contravention of the EPBC Act. Dr Booth asked Mr Bosworth to cease operating his electric grids pending referral of the action to the Commonwealth Environment Minister. Mr Bosworth refused this request and continued to operate his

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<sup>20</sup> S Ryan, ‘Wildlife Officer in a jam over fruit bats’, *The Courier Mail*, 17/12/2001, page 6.

electric grids. The subsequent case in the Federal Court establishes that the operation of the electric grid during the November-December 2000 lychee season clearly contravened the EPBC Act.

Following the hearing of the interim injunction Mr Bosworth refused to refer the operation of his electric grids under the EPBC Act. It was only after being forced to make a referral as a result of the injunction granted by the Federal Court that Mr Bosworth has referred the operation of the electric grids under the Act. In making the referral the preliminary documentation clearly avoids making any statements that would be self-incriminating. At no stage of the interim injunction hearing, the trial hearing or in making the referral has Mr Bosworth directly disputed the allegations that the operation of the electric grid during November-December 2000 killed somewhere between 12,000-28,000 Spectacled Flying Foxes nor has he provided evidence of the actual numbers that the operation of the electric grid killed or injured.

Mr Bosworth's deliberate and persistent breaches of environmental legislation for commercial gain should be regarded very severely and his deliberate avoidance and evasion of the true numbers of Spectacled Flying Foxes killed or injured by the operation of the electric grid during the November-December 2000 lychee season indicates he is not able to be relied upon to correctly monitor or report the impact of the operation of the electric grid should he be permitted to do so under the EPBC Act.

The severity that deliberate and persistent breaches of environmental legislation for commercial gain should be regarded was recently emphasized by the Queensland Court of Appeal in upholding sentences of imprisonment for such offences. In *R v Dempsey* [2002] QCA 45 a person who illegally logged high value timber trees from within the Wet Tropics World Heritage Area was sentenced to 12 months imprisonment. The Court of Appeal upheld the sentence of imprisonment for "a serious, blatant and cynical act of environmental destruction for commercial gain". Similarly in *R v Moore* [2001] QCA 431 the Court of Appeal upheld a sentence of 18 month's imprisonment for causing serious environmental harm and other offences. Williams JA (with whom Jones and Douglas JJ agreed) stated:

"Major environmental offences, particularly when there is a high degree of criminality because of the repetitive nature of the conduct, will call for the imposition of custodial sentences."

The deliberate, serious and blatant act of environmental destruction for commercial gain carried out by Mr Bosworth in November-December 2000 in killing in the order of 18,000 Spectacled Flying Foxes, gross exceedance of the damage mitigation permit issued under the *Nature Conservation Regulation* 1994 (Qld) and his repeated refusal to refer the operation of the electric grid under the EPBC Act until forced by the Federal Court injunction indicates that he is not a suitable person to be granted an approval under the EPBC Act having regard to his history in relation to environmental matters.

### **Impracticality of monitoring and enforcement of conditions**

While the proposed action is to "take or destroy approximately 5,500 Spectacled Flying Foxes", approval of the action at any level or scale would provide the applicant with the opportunity to exceed any restrictions practically at will. Given the distance and relative isolation of the property, any condition limiting the nature, extent,

duration, intensity or impacts of the proposed action could not reasonably and practicably be monitored or enforced.

The applicant's actions during the 2000 lychee season is a strong example of the applicant's attitude to statutory limitations on the number of Spectacled Flying Foxes that he may lawfully cull. As discussed in the previous section, while holding a permit under the *Nature Conservation Regulation 1994* (Qld) to cull only 1000 Spectacled Flying Foxes during the 2000 lychee season, Justice Branson found on the balance of probability the true level of culling by Mr Bosworth was "in the order of 18,000" Spectacled Flying Foxes. Just as the Queensland Parks and Wildlife Service had and has no effective way of monitoring or enforcing conditions limiting the number of flying foxes and other animals culled, Environment Australia would have no reasonably practicable means to monitor or enforce conditions imposed on an approval granted under the EPBC Act. Particularly in light of Mr Bosworth's history in relation to this matter, this factor weighs heavily against the grant of an approval under the EPBC Act subject to monitoring and reporting conditions to limit the cull of Spectacled Flying Foxes either to 5,500 or a smaller number of animals.

In summary, outright refusal of the application is necessary in this case. Conditional approval (e.g. for a take of a lesser number of flying foxes) will provide Mr Bosworth with an opportunity to exceed the approval because there are no reasonably practicable means to monitor and enforce the conditions.

### **Prudent and feasible alternatives**

It is prudent and feasible to avoid the impacts that the proposed action will cause to the world heritage values of the Wet Tropics World Heritage Area and biodiversity that instead of operating electric grids to cull Spectacled Flying Foxes the applicant erect full-exclusion netting or use other, non-lethal means to avoid or minimise the impacts of flying foxes and other animals on the lychee crop. The ability of the applicant to erect full exclusion netting is evidenced in the testimony of Mr Minifie in the Federal Court the transcript of which provided in Appendix 7. It should be noted that other, less expensive netting options such as tunnel or drape netting may also be available. In addition it may also be possible for Mr Bosworth to install netting more cheaply than through commercial net contractors. Many fruit growers undertake staged netting to avoid prohibitive, up-front costs and to confirm the benefits of netting of orchards.

As set out above, the financial figures provided by the applicant do not support his assertion that the only viable option to protect the lychee orchard from flying foxes is the use of his electric grid system. He has claimed previously that he suffers \$200,000 annual losses from flying fox and bird damage. Note that this annual loss was stated to occur even with the operation of the electric grid. He now claims that he will suffer some \$418,000 losses annually if he is not able to operate his electric grid. Based on these figures, installation of a full exclusion net costing approximately \$1,000,000 to protect the applicant's lychee crop will pay for itself in approximately 3-6 years. Based on an assumed life expectancy of such a full exclusion net of approximately 10 years these figures indicate that the applicant would be substantially better off financially to install full exclusion netting. The only conclusion that can be drawn from the available evidence is that full exclusion netting is a prudent and feasible alternative to the proposed action of the operation of the electric grid.

### **Economic and social matters do not justify approval of the action**

As set out above, the financial figures provided by the applicant do not support his assertion that the only viable option to protect the lychee orchard from flying foxes is the use of his electric grid system. Full exclusion netting appears to be a prudent and feasible alternative to the operation of the electric grid. The applicant's assertion that if he is prevented from operating the electric grid it is likely that the lychee orchard will cease operating thereby causing some \$418,000 personal losses, \$663,000 total loss of production to the local economy and \$207,000 loss of income throughout the local area are wildly exaggerated, unrealistic and unsupported by credible evidence.

In addition, even if a sound economic and social basis existed to support the continued operation of the electric grid, the judgment of Justice Branson is instructive of how these interests should be balanced against Australia's obligations to protect the world heritage values of the Wet Tropics World Heritage Area and biodiversity generally. Her Honour stated at paragraphs 114-115 of her judgment that:

“the World Heritage Convention entered into force for Australia and generally on 17 December 1975. The [EPBC Act] reflects, amongst other things, recognition by the Australian Parliament of Australia's international obligations under the World Heritage Convention.

In weighing the factors which support an exercise of the Court's discretion in favour of the grant of an injunction under subs 475(2) of the Act against those factors which tell against the grant of such an injunction, it seems to me that it would be a rare case in which a Court could be satisfied that the financial interests of private individuals, or even the interests of a local community, should prevail over interests recognised by the international community and the Parliament of Australia as being of international importance.”

This application is not such a rare case where the economic and social interests should prevail over the compelling environmental factors weighing against the grant of the application. The application should be refused.

### **Spectacled Flying Fox species should be listed as vulnerable**

Based on the provisions for listing of threatened species and the evidence provided in the attached Appendixes it is submitted that the Spectacled Flying Fox species should be listed as vulnerable under the EPBC Act.

### **Operation of electric grid systems to electrocute flying foxes should be listed as key threatening process**

Based on the provisions for listing of key threatening processes and the evidence provided in the attached Appendixes it is submitted that the operation of electric grids to electrocute flying foxes should be listed as a key threatening process under the EPBC Act.

# Recommendations

On the basis of the evidence upon which the findings of fact were made by the Federal Court in relation to the proposed action, the relevant provisions of the EPBC Act and the regulations, it is recommended that:

1. Approval of the proposed action (EPBC Referral No 2002/571) be refused on the grounds that:
  - (a) The proposed action is inconsistent with Australia's obligations under the World Heritage Convention.
  - (b) The proposed action is inconsistent with the Australian World Heritage management principles.
  - (c) The proposed action is inconsistent with Australia's obligations under the Biodiversity Convention.
  - (d) The proposed action is inconsistent with the principles of ecologically sustainable development.
  - (e) The applicant is not a suitable person.
  - (f) It is not reasonably practicable to monitor or enforce any condition limiting the duration, extent, intensity or impact of the proposed action.
  - (g) Prudent and feasible alternatives to the proposed action exist.
  - (h) Economic and social matters do not otherwise justify approval of the proposed action.
2. That the Spectacled Flying Fox species should be listed as vulnerable under the EPBC Act.
3. That the electrocution of Spectacled Flying Foxes on electric grid systems to protect fruit crops should be declared a key threatening process under the EPBC Act.

All of the information included in this submission is true and correct to the best of knowledge and ability of the person making the submission.

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Dr Carol Booth  
32 Forbes Street  
WEST END QLD 4101

8 May 2002