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# Flying Foxes in Australia's Urban Environment

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## INTRODUCTION

The presence of flying foxes in urban areas engenders different responses within the community. While some see flying foxes as a source of annoyance or concern and would like them moved-on or culled, others delight in having wildlife close to their home and are appreciative of the important role that flying foxes play in maintaining Australia's biodiversity. This e-Research Brief looks at flying foxes in Australian urban areas, focusing on Queensland.<sup>1</sup>

The paper commences with a brief description of the four main flying fox species found in Queensland and details there how they are protected by the law. It then identifies issues raised by the presence of flying foxes in urban areas and management of their impact.

## FLYING FOXES IN AUSTRALIA

Flying foxes are very noticeable in urban areas because they roost in colonies of up to a million animals, although a colony may be as small as a dozen flying foxes. In general, colonies comprise thousands of animals.<sup>2</sup> Some roosting areas are permanent camps whereas others may be occupied for some time then abandoned, perhaps to become reoccupied at a later time.<sup>3</sup> Flying foxes roost during the day then fly out at sunset to feed, returning to the camp before sunrise.<sup>4</sup>

Flying foxes mainly eat pollen, nectar and fruit from native trees (such as eucalypt, turpentine, paperbark, banksia, fig and lilly pilly<sup>5</sup>), but they also eat from non-native trees too, such as the fruit (e.g. mangoes) of trees growing in backyards and orchards.<sup>6</sup> Through their feeding on native trees, flying foxes play a significant role in maintaining Australia's biodiversity: they pollinate and disperse the seeds of native forest trees, "including commercially important hardwood and rainforest species".<sup>7</sup> Flying foxes' ability to fly up to 100km in a night<sup>8</sup> means that they are able to transfer pollen and seeds over cleared ground thus cross-pollinating forest remnants and widening genetic variability.<sup>9</sup> Without pollination from another tree of the same species, many Australian trees, especially eucalypts, would not have fertile seeds.<sup>10</sup>

There are four species of flying fox that are found across large areas of mainland Australia - the black flying fox,<sup>11</sup> the spectacled flying fox,<sup>12</sup> the grey-headed flying fox<sup>13</sup> and the little red flying fox.<sup>14 15</sup> Each of these species is found in Queensland.<sup>16</sup>

### BLACK FLYING FOX

The black flying fox is the largest species of flying fox in Australia,<sup>17</sup> with a wingspan of over one metre.<sup>18</sup> Black flying foxes usually camp in mangroves or paperbark swamps.<sup>19</sup>

### SPECTACLED FLYING FOX

The spectacled flying fox is generally found in, or near, rainforest.<sup>20</sup> It disperses the seeds of at least 26 species of rainforest trees.<sup>21</sup> A key habitat for the spectacled flying fox, the Mabi Forest (a type of rainforest found in north Queensland<sup>22</sup>), is listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).<sup>23</sup>

### GREY-HEADED FLYING FOX

The grey-headed flying fox is found in open forest and rainforests along the east coast of Australia south of Rockhampton.<sup>24</sup>

### LITTLE RED FLYING FOX

Little red flying foxes are more nomadic than the grey-headed, spectacled and black flying foxes. They change camps as different food sources become available.<sup>25</sup> By way of example: more than 50,000 little red flying foxes commenced roosting in Talburpin Park on Torquay Parade in Redland Bay in February 2010 to feed on the bloodwood trees flowering on North Stradbroke Island,<sup>26</sup> but they were expected to leave by the end of March 2010.<sup>27</sup>

## LEGAL PROTECTION FOR FLYING FOXES IN QUEENSLAND

Habitat loss is a primary cause of a decline in flying fox numbers.<sup>28</sup> The reduction in their numbers has led to the grey-headed flying fox and the spectacled flying fox being listed as 'vulnerable'<sup>29</sup> under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.<sup>30</sup> While the four species of flying fox described above are classified as 'least concern wildlife' under Queensland's *Nature Conservation Act 1992*<sup>31</sup>

they are, as discussed below, nevertheless protected under that Act.<sup>32</sup>

## **ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (CTH)**

### **Environment Assessment and Approval Process**

The listing of the spectacled flying fox and the grey-headed flying fox as 'vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) means that a person is prohibited from taking an action<sup>33</sup> that is likely to have, or has, or will have, a significant impact<sup>34</sup> on the spectacled flying fox or the grey-headed flying fox without approval from the Minister for Environment Protection, Heritage and the Arts (the Minister).<sup>35</sup> The maximum civil penalty for breaching this provision is \$550,000.<sup>36</sup>

#### **Referral**

If an action may be likely to have a significant impact on spectacled flying foxes or grey-headed flying foxes, either directly on the numbers in the flying fox camp or to the subsequent breeding success of the animals,<sup>37</sup> a referral to the Minister must be made to determine if the activity requires assessment and approval under the EPBC Act (i.e. to determine whether the action is a controlled action<sup>38</sup>).<sup>39</sup>

If the Minister decides that the action does not need assessment and approval under the EPBC Act, the person will not breach the Act if the activity is carried out in the manner set out in the referral.<sup>40</sup> If the action is a controlled action, the Minister has to assess the impact of the action.

#### **Assessment**

Part 8 of Chapter 4 of the EPBC Act provides the Minister with a number of different methods of assessment of the impacts of controlled actions.<sup>41</sup>

#### **Approval**

On the basis of the assessment, the Minister will decide whether to:<sup>42</sup>

- approve the action;
- approve the action subject to conditions; or
- not approve the action.

In making the decision, the Minister must consider the impacts of the proposed action on matters protected by the EPBC Act and other economic and social matters. The Minister must take into account:<sup>43</sup>

- the principles of ecologically sustainable development;
- the outcomes of the assessment of the impacts of the proposed action;
- referral documentation;
- community and stakeholder comment;
- any other relevant information available on the impacts of the proposed action; and
- relevant comments from other Australian Government and state and territory government ministers (such as information on social and economic factors).

The person's environmental history may also be taken into account.<sup>44</sup>

## **NATURE CONSERVATION ACT 1992 (QLD)**

Flying foxes are 'protected animals' under the *Nature Conservation Act 1992* (Qld).<sup>45</sup>

### **Killing Flying Foxes**

It is an offence under section 88 of the *Nature Conservation Act 1992* (Qld) to take ('take' includes hunt, shoot, wound, kill, skin, poison, net, snare, spear, trap, catch, pursue, lure, injure or harm) a flying fox, unless the person is an authorised person or the taking is authorised under the Act.<sup>46</sup> The maximum penalty for an offence is \$300,000<sup>47</sup> or 2 years of imprisonment.<sup>48</sup>

## Flying Fox Roosts and Dispersal of Flying Foxes

Unless authorisation is granted under the *Nature Conservation Act 1992* (Qld),<sup>49</sup> or the flying fox roost is in a protected area,<sup>50</sup> section 88C of the *Nature Conservation Act 1992* (Qld) makes it an offence to:

- destroy a flying fox roost;
- drive away, or attempt to drive away, a flying fox from a flying fox roost;
- disturb a flying fox in a flying fox roost.

The maximum penalty for the first two of these offences is \$100,000<sup>51</sup> or 1 year's imprisonment and the maximum penalty for the third offence listed above is \$10,000.<sup>52</sup>

### Damage Mitigation Permits

A person may undertake actions that would otherwise be illegal under section 88C of the *Nature Conservation Act 1992* if that person is issued with a damage mitigation permit under the *Nature Conservation (Wildlife Management) Regulation 2006* (Qld). Section 184 of the *Nature Conservation (Wildlife Management) Regulation 2006* (Qld) provides that a damage mitigation permit may be granted with respect to a flying fox only for one or both of the following purposes:

- to prevent damage or loss caused, or likely to be caused, by a flying fox;
- to prevent or minimise a threat, or potential threat, to human health or wellbeing caused by a flying fox.

If a permit is granted, and provided it is stated on the permit, this enables the permit holder to:<sup>53</sup>

- destroy a flying fox roost used by flying foxes;
- drive away flying foxes from a flying fox roost using particular devices;
- disturb flying foxes in a flying fox roost.

Mackay Regional Council, for example, was granted a permit in October 2009 which allows the Council to use methods such as "fogging the trees through mist or smoke, noise deterrents, such as loud cracking sounds, and bright lights" to disperse the 6,000 – 10,000 flying foxes roosting in North Eton. The permit was granted after the Department of Environment and Resource Management considered the "concern and frustration a number of North Eton residents have felt about the presence of ... flying foxes in the area"<sup>54</sup> and the impact on flying foxes and the wider environment. A condition of the permit was, however, that the attempt to move the flying foxes from the area must not commence until after the breeding season finished.<sup>55</sup> Accordingly, in April 2010, following an inspection that revealed "no remaining dependent young in the colony", permission was given that the dispersal could be commenced.<sup>56</sup>

## IMPACT OF FLYING FOXES

While the important role that flying foxes play as pollinators and dispersers of seeds of native trees may be recognised,<sup>57</sup> concerns about the presence of flying foxes in urban areas are constantly raised.<sup>58</sup> The animals are criticised by residents in urban areas for eating backyard fruit;<sup>59</sup> defecating on washing, cars and roofs, and in swimming pools;<sup>60</sup> causing the death of some trees and defoliation of others;<sup>61</sup> and being noisy,<sup>62</sup> smelly<sup>63</sup> and potentially dangerous, through their capacity to interfere with air traffic<sup>64</sup> and carry the Hendra virus and Australian bat lyssavirus.<sup>65</sup>

### Hendra Virus

To date, Hendra virus has only been identified in Queensland. Since it was first diagnosed in 1994, seven people have been confirmed to have been infected with the virus and four have died as a result of it. It is believed that fruit bats carry the virus, but that it has little effect on them.<sup>66</sup> While there is no evidence that the virus can be transmitted from flying foxes directly to humans,<sup>67</sup> it can be transmitted to humans by horses which have been infected through contact with flying foxes – possibly through infected urine, an aborted foetus or reproductive fluids.<sup>68</sup> Queensland Health list the symptoms of Hendra virus as including:<sup>69</sup>

- an influenza-like illness, which can progress to pneumonia; or
- encephalitis (inflammation of the brain) type symptoms i.e. headache, high fever, and drowsiness, which can progress to convulsions or coma.

## Australian Bat Lyssavirus

Australian bat lyssavirus was first identified in 1996. Two Australians have died from being infected with lyssavirus – one of whom contracted it from a flying fox.<sup>70</sup> It is thought that Australian bat lyssavirus can be transmitted from bats to humans through bites and scratches, or by being exposed to bat saliva through the eyes, nose or mouth, but it is considered that “contact or exposure to bat faeces, urine or blood do not pose a risk of exposure to [the virus]”.<sup>71</sup> Biosecurity Queensland estimates that less than 1% of the bats in Queensland carry the virus.<sup>72</sup> Queensland Health state that the virus “causes a serious illness which results in paralysis, delirium, convulsions and death. Death is usually due to respiratory paralysis”.<sup>73</sup>

## MANAGEMENT OF FLYING FOXES IN URBAN AREAS

As discussed above, flying foxes are protected in Queensland at both state and federal levels. Obviously therefore, management of flying foxes must occur within the legislative framework. This section of the e-Research Brief discusses various methods of managing flying foxes in urban areas.

### DISPERSAL AND RELOCATION

Relocation of the flying fox camp is often suggested when a colony establishes in an urban area.<sup>74</sup> However, as noted by the Commonwealth Department of Environment and Heritage:<sup>75</sup>

... even with good planning and expert assistance, such efforts do not always achieve the desired result. Often the unpredictable nature of flying-fox behaviour means that the camp may move to a roost even less acceptable to the affected human community. Permanent relocation is also likely to depend on a continuing program of disturbance to deter flying-foxes from returning to the original site.

As stated by the Department of Environment and Heritage, the flying foxes may simply relocate to another urban area or another part of the urban area.<sup>76</sup> The alternative area may even be less suitable. It was for this reason that the Fraser Coast Regional Council closed the playground at Apex Park at Hervey Bay around Christmas 2009<sup>77</sup> and tried to minimise any disturbance (such as by mowing) of the hundreds of thousands of little red flying foxes at the adjacent Tooan Tooan Creek colony. The Council was concerned that the flying foxes could move further into the residential area, causing greater issues.<sup>78</sup>

As discussed further below, numerous methods have been utilised to attempt to disperse flying fox colonies. These include noise,<sup>79</sup> light, and olfactory and visual deterrents.<sup>80</sup>

### Melbourne

The successful removal of the grey-headed flying fox camp from the Melbourne Botanic Gardens is often cited by those recommending the relocation of flying foxes from urban areas.<sup>81</sup>

The number of flying foxes roosting in the Melbourne Botanical Gardens grew from small numbers roosting for only part of the year in 1981 to reach approximately 30,000 roosting there all through the year in 2003.<sup>82</sup> The flying foxes caused damage to roost vegetation in the Botanic Gardens and “threatened significant parts of the ... Gardens, which are important to Victoria’s cultural heritage”.<sup>83</sup> While the attempt to move them from the Botanic Gardens was successful,<sup>84</sup> the flying foxes did not relocate to the area prepared for them on the Yarra River at Ivanhoe and much effort was required to establish a colony at Yarra Bend Park (“the largest bushland reserve near the Melbourne Central Business District”<sup>85</sup>).<sup>86</sup>

*The Flying-Fox Campsite Management Plan: Yarra Bend Park:*<sup>87</sup>

provides a five-year action program with details of the management actions proposed to protect and manage the colony, enhance and promote Yarra Bend Park, minimise impacts of the colony on park users, local residents and the wider community and increase community appreciation and understanding of flying-fox management issues.

The Plan was prepared on the basis that:<sup>88</sup>

the Grey-headed Flying-fox is here to stay ... Flying-foxes can not be prevented from coming to Melbourne ... Therefore, the most appropriate response is to manage the colony to protect it and minimise any impacts on the community and the environment.

### Sydney

Up to 22,000 grey-headed flying-foxes roost in the Sydney Botanic Gardens. This has resulted in the death of 18 trees and negative impacts on over 300 plants.<sup>89</sup> In relation to trying - to date unsuccessfully - to remove the flying fox camp, the executive director of the Botanic Gardens Trust, Tim Entwisle, is quoted as saying:<sup>90</sup>

We’ve tried lots of things. ... We’ve used water sprays, we’ve used strobe lights, we’ve put an inflatable man in the trees, we’ve put shrimp paste up there, we’ve used bags of python poo. For us, this is such an



important historical resource we have to try [to relocate them].

The Sydney Botanic Gardens Trust is currently proposing to relocate the flying fox camp “to other camps in the Sydney metropolitan area, using methods adapted from the ... relocation of a camp of Grey-headed Flying-foxes from the Royal Botanic Gardens, Melbourne”.<sup>91</sup> After the dispersal, flying foxes will be permitted to return to the Botanic Gardens to feed but not to roost.<sup>92</sup> It is expected that some of the flying foxes will join existing camps and others may establish one or more camps in the Sydney metropolitan area. It is intended that the dispersal (proposed to commence in May 2010) will be achieved primarily through conducting four weeks of recorded industrial noise (eg banging metal rubbish bin lids<sup>93</sup>) emitted from loud-speakers mounted on vehicles.<sup>94</sup> The proposal has been described as “tantamount to sleep deprivation” and it has been suggested that there is insufficient evidence about its effect on breeding habits.<sup>95</sup>

The proposal to relocate the flying foxes is currently being assessed under the Commonwealth EPBC Act. It has been assessed as a ‘controlled action’ under the Act with the controlling provisions being sections 18 and 18A (Listed threatened species and communities). The project is being assessed through a Public Environment Report. The report was available for public comment in November and December 2009 and the submissions received were addressed in the Summary Report.<sup>96</sup> The final Public Environment Report and the Summary Report are available to the public until 9 April 2010.<sup>97</sup> The Environment Minister, the Hon Peter Garrett MP, will have to make the decision whether to approve the proposal, not approve it, or approve it subject to conditions.

It has been pointed out that the proposal to disperse the flying foxes from the Sydney Botanic Gardens potentially conflicts with another proposal to be considered by the Minister – the draft National Recovery Plan for the Grey-headed Flying Fox.<sup>98</sup> The draft plan sets out the criteria for identifying critical habitat.<sup>99</sup> Accordingly to an article in the *Sydney Morning Herald*, the Royal Botanic Gardens satisfies all three criteria identified in the plan as habitat critical to survival. Nick Edards, the principal of Bat Advocacy, was quoted as saying: “an approval of the proposal would be completely inconsistent with the recovery of the species. And the minister is responsible for the recovery of the species”.<sup>100</sup>

Concerns have also been raised that if approval is given to disperse the flying foxes from the Sydney Botanical Gardens it will be more difficult to refuse other applications to disperse flying foxes in urban areas, such as Maclean and Singleton.<sup>101</sup>

## Singleton

A grey-headed flying fox camp, which has been in Burdekin Park in Singleton in New South Wales for the past seven years, has caused the death of a number of trees in the park and much angst to some local residents.<sup>102</sup> Numerous methods have been tried to disperse the flying foxes, including “unmuffled lawn mowers, starter pistols and chainsaws”<sup>103</sup> as well as “‘birdfrite’ ... sound deterrent[s] ..., a fire hose and the chemical D-Ter”,<sup>104</sup> but to no avail.

In April 2010, Singleton Council voted unanimously to dissolve its Flying Fox Steering Committee and cease attempting to relocate the flying foxes from Burdekin Park because of cost (the Council has spent hundreds of thousands of dollars trying to remove the flying foxes from the park) and ineffectiveness.<sup>105</sup>

## CULLING

A number of people have called for a cull of flying foxes.<sup>106</sup> However, as is clear from the above discussion about the laws protecting flying foxes, anyone who kills a flying fox in Queensland without authorisation is in breach of the *Nature Conservation Act 1992* (Qld), and in instances in which the killing would be likely to have a significant impact on the species of grey-headed flying fox or spectacled flying fox, the action may also contravene the EPBC Act.

## MANAGING FLYING FOXES IN SITU

While the Melbourne Botanic Gardens example discussed above shows that it is possible to disperse flying foxes from a camp, such dispersals are not always successful (see the Singleton example above)<sup>107</sup> and it may be more appropriate to manage the flying foxes in situ. This may be through such means as netting of fruit trees, developing tourist opportunities, and minimising impact by encouraging the flying foxes to roost in certain areas and discouraging them from roosting in others.

## Trees

While some people wish to disperse flying foxes from their urban area, others like to encourage them. Native trees such as lilly pillies, Plunket mallee, eucalyptus curtisii, bloodwood, and other “nectar-rich trees and shrubs”<sup>108</sup> are appealing to flying foxes, whereas trees such as she-oaks, which do not produce nectar or fruit, will not encourage their presence.<sup>109</sup> The Queensland Department of Environment and Resource

Management suggests that:<sup>110</sup>

non-residential urban areas such as parkland, golf courses and ... cemeteries can be planted out with a range of native trees that provide both fruit (e.g. small-leaved figs) and nectar (e.g. eucalypts and melaleucas). For flying foxes this would help provide feeding sites away from residential areas and corridors for them to travel between remnant forests.

To reduce the attractiveness of a camp area to flying foxes, the Department recommends clearing the understorey and removing some tree branches. The Department also suggests that a flying fox colony may be encouraged to move by planting potential roost trees at a suitable location.<sup>111</sup> This, of course, would be a long-term proposition.

## Netting

To prevent flying foxes eating fruit on backyard fruit trees, netting is the recommended option.<sup>112</sup> To cause the least danger to flying foxes, the net should be "white, thick-knitted and pulled tight so animals cannot get entangled".<sup>113</sup> The netting will also protect the trees from other animals - such as birds, rats and possums - and the elements - such as wind and hail.<sup>114</sup>

## Practical Measures

Some people in urban areas complain about flying fox droppings on washing and cars. In relation to the issues about washing, the Queensland Department of Environment and Resource Management provides the following advice:<sup>115</sup>

Don't leave washing out at night. If you do, ... think about putting up old sheets or a shower curtain on the outside lines of your clothes hoist to protect your washing.

If your washing is stained ... [s]oak the item as soon as you can ... in a good stain remover. Bleach can be used for white items. Some fruits with coloured flesh that are eaten by flying-foxes (e.g. mulberries) may leave a permanent stain ...

Obviously, keeping a car undercover at night will protect it from flying fox droppings.<sup>116</sup>

## Tourism

Flying foxes present a possible tourist attraction. Batty Boat Cruises, for example, have been operating each Brisbane summer for over 20 years. The cruise visits Indooroopilly Island to watch the bats fly-out at sunset.<sup>117</sup> It has also been asserted that flying foxes could become Cairns' "newest tourist attraction".<sup>118</sup> It was reported in February 2010 that "[d]ozens of tourists have been gathering near the Cairns Library each afternoon to watch hordes of bats flying away from nearby trees in search of food at dusk".<sup>119</sup> In Pinalba<sup>120</sup> too, the flying fox colony has been promoted as a tourist attraction.<sup>121</sup>

## Education and Research

Education is an important tool for enabling the successful co-habitation of flying foxes and humans. By knowing the important role that flying foxes play in the Australian ecology, residents in urban areas may have greater patience concerning the inconvenience of having flying foxes roost or feed in their local area. Importantly, being aware of what risks the flying foxes actually pose, and how to avoid them, people will reduce their chances of becoming infected by the Hendra virus or Australian bat lyssavirus.

The key educational message is: Do not handle flying foxes.<sup>122</sup> If a flying fox is injured or needs rescuing, the Queensland Department of Environment and Resource Management advises that the local wildlife care organisation or the Department should be contacted.<sup>123</sup>

It has been suggested that horse owners may reduce the chances of the Hendra virus being transmitted from flying foxes to horses and then potentially to humans by: clearing certain trees from horse paddocks and replacing them with trees which are less attractive to flying foxes; wearing gloves and disposable overalls if treating a sick horse; wearing a mask if the horse is discharging any bodily fluids; keeping horses stabled at night; and moving horse food containers and water troughs from areas where they may be contaminated by bat droppings.<sup>124</sup>

Further research is needed in relation to flying foxes to assist in the co-habitation of people and flying foxes. There is a need to understand more about Australian bat lyssavirus and the Hendra virus, and to possibly develop a cure and a vaccine for the latter. Greater knowledge of flying foxes is needed to understand why they camp in some places and find others unappealing.<sup>125</sup>

## CONCLUSION

The urban area can be hazardous for flying foxes - they may be electrocuted on powerlines, chased by cats or

dogs, hit by a car or hurt on barbed wire fences<sup>126</sup> - and their presence in urban areas does annoy and worry some residents, but with habitat loss, it is likely that there will be more, not less, flying foxes in urban areas. While it may be possible to disperse flying fox camps from particular areas and relocate them to other areas, it is not always successful and in some instances it may be better to manage the flying foxes in situ.

## LINKS TO FURTHER READING

- [Photos of flying foxes](#) tabled in Queensland Parliament, 3 September 2009
- Pteropus poliocephalus - Grey-headed flying fox ([species profile and threats](#))
- Pteropus conspicillatus - Spectacled flying fox ([species profile and threats](#))

## A SELECTION OF MANAGEMENT DOCUMENTS

- Commonwealth, Department of Environment, Water, Heritage and the Arts, [Action Plan for Australian Bats](#), 1999
- Commonwealth, Department of the Environment and Heritage, *Environment Protection and Biodiversity Conservation Act 1999*: [Administrative Guidelines on Significance - Supplement for the Grey-headed Flying-fox](#), 2003
- Commonwealth, Department of the Environment and Heritage, *Environment Protection and Biodiversity Conservation Act 1999*: [Administrative Guidelines on Significance – Supplement for the Spectacled Flying-fox](#), 2003
- New South Wales, Department of Environment and Climate Change, [Flying-fox Camp Management Policy](#), 2007
- New South Wales, Parramatta Park Trust, [Grey Headed Flying Fox Management Plan](#)
- New South Wales, Ku-ring-gai Municipal Council, [Ku-ring-gai Flying-fox Reserve Management Plan](#), 1999
- Victoria, Department of Sustainability and Environment, [Flying-fox Campsite Management Plan, Yarra Bend Park](#), 2005
- Billie J Roberts, [Management of Urban Flying-fox Camps: Issue of relevance to camps in the Lower Clarence Valley, NSW](#), Centre for Innovative Conservation Strategies, 2006

## ENDNOTES

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- <sup>1</sup> This e-Research Brief is restricted to a consideration of flying foxes in *urban* areas so issues associated with flying foxes in *rural* areas are not discussed except where pertinent to management of flying foxes in urban areas.
- <sup>2</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#), last updated 8 December 2008. Colonies may consist of more than one species of flying fox.
- <sup>3</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>4</sup> Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#).
- <sup>5</sup> Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#).
- <sup>6</sup> See eg, [Living with Flying-Foxes: Health and conservation issues for people living near flying-fox communities](#) and Australian Museum, [Black Flying-fox](#), last updated 16 February 2010.
- <sup>7</sup> Australia, Department of Environment, Water, Heritage and the Arts, [Pteropus poliocephalus – Grey-headed Flying-fox](#), last updated 12 February 2010.
- <sup>8</sup> Generally, flying foxes feed within a 30km radius of their camp: Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#).
- <sup>9</sup> See eg, [Living with Flying-Foxes: Health and conservation issues for people living near flying-fox communities](#) and Queensland, Department of Environment and Resource Management, [Flying-fox Fable](#), last updated 9 January 2006 and Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#) and Queensland, Department of Environment and Resource Management, [Flying-foxes](#), last updated 8 December 2008.
- <sup>10</sup> Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#).
- <sup>11</sup> *Pteropus alecto*.
- <sup>12</sup> *Pteropus conspicillatus*.
- <sup>13</sup> *Pteropus poliocephalus*.
- <sup>14</sup> *Pteropus scapulatus*.
- <sup>15</sup> Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#).
- <sup>16</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>17</sup> Australian Museum, [Black Flying-fox](#), last updated 16 February 2010.
- <sup>18</sup> James Cook University, [Flying Foxes](#).
- <sup>19</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>20</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>21</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>22</sup> Australia, Department of Environment, Water, Heritage and the Arts, [Mabi Forest](#).
- <sup>23</sup> Australia, Department of Environment, Water, Heritage and the Arts, [Pteropus conspicillatus – Spectacled Flying-fox](#), last updated 12 February 2010 and Australia, Department of Environment, Water, Heritage and the Arts, [Mabi Forest \(Complex Notophyll Vine Forest 5b\)](#), last updated 5 February 2010.

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- <sup>24</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>25</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>26</sup> [‘Little Reds’ Fly in for Feast](#), *Bayside Bulletin*, 15 February 2010.
- <sup>27</sup> Brian Williams, Driven Batty: Flying fox colony back in Redland Bay, *Courier Mail*, 15 February 2010.
- <sup>28</sup> Other causes include killing of animals in orchards and destruction of roosts: see eg, Australia, Department of Environment, Water, Heritage and the Arts, [Pteropus poliocephalus – Grey-headed Flying-fox](#), last updated 12 February 2010.
- <sup>29</sup> Section 179 of the [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#) states that a native species is eligible to be included in the vulnerable category at a particular time if, at that time:
- it is not critically endangered or endangered; and
  - it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- <sup>30</sup> Australia, Department of Environment, Water, Heritage and the Arts, [Pteropus poliocephalus – Grey-headed Flying-fox](#), last updated 123 February 2010 and Australia, Department of Environment, Water, Heritage and the Arts, [Pteropus conspicillatus – Spectacled Flying-fox](#), last updated 12 February 2010.
- <sup>31</sup> See the [Nature Conservation \(Wildlife\) Regulation 2006 \(Qld\)](#) and [Nature Conservation Act 1992 \(Qld\)](#), s 80.
- <sup>32</sup> The dusky flying-fox (*pteropus brunneus*) is classified as ‘extinct in the wild wildlife’ and the large-eared flying fox (*pteropus macrotis epularius*) is classified as ‘vulnerable wildlife’: [Nature Conservation \(Wildlife\) Regulation 2006 \(Qld\)](#), Schedule 1. A species may be prescribed as extinct in the wild wildlife if there have been thorough searches conducted for the wildlife; and the wildlife has not been seen in the wild over a period that is appropriate for the life cycle or form of the wildlife: [Nature Conservation Act 1992 \(Qld\)](#), s 76. Wildlife may be prescribed as vulnerable wildlife if: the population size or distribution of the wildlife has declined, or is likely to decline, to an extent that the wildlife may become endangered because of a threatening process; or the population size of the wildlife has been seriously depleted and the protection of the wildlife is not secured; or the population of the wildlife is low or localised; and dependent on habitat that has been, or is likely to be, adversely affected, in terms of quantity or quality, by a threatening process: [Nature Conservation Act 1992 \(Qld\)](#), s 77.
- <sup>33</sup> Action includes a project; a development; an undertaking; an activity or series of activities; and an alteration of any of the preceding things: [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), s 523.
- <sup>34</sup> To assist in determining whether an action will have a significant impact, the Department of Environment, Water, Heritage and the Arts has a number of publications available: see eg, [Matters of National Significance: Significant Impact Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999](#), 2009; [EPBC Act Administrative Guidelines on Significance – Supplement for the Grey-headed Flying-Fox](#), 2003; [EPBC Act Administrative Guidelines on Significance – Supplement for the Spectacled Flying-fox](#), 2003.
- <sup>35</sup> [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), ss 18 – 19 and Commonwealth Government, [Rudd Ministry](#), 9 March 2010.
- <sup>36</sup> The penalty is ten times greater for a body corporate. The maximum penalty for certain offences relating to threatened species (as set out in s 18A providing for a criminal penalty), such as taking an action that results, or will result, in a significant impact on a species, is imprisonment for 7 years, a fine of \$46,200, or both.
- <sup>37</sup> Australia, Department of the Environment and Heritage, [EPBC Act Administrative Guidelines on Significance – Supplement for the Spectacled Flying-fox](#), 2003, p 7.

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- <sup>38</sup> An action that a person proposes to take is a 'controlled action' if the taking of the action by the person without approval under Part 9 of the [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#) for the purposes of a provision of Part 3 would be prohibited by the provision. The provision is a controlling provision for the action: [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), s 67.
- <sup>39</sup> [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), ss 67 – 68 and s 75. Authority from the State must also be obtained.
- <sup>40</sup> Australia, Department of the Environment and Heritage, [EPBC Act Administrative Guidelines on Significance – Supplement for the Spectacled Flying-fox](#), 2003, p 7. In some cases, approval may not be required because of measures proposed to be instituted to avoid impacts on the flying foxes.
- <sup>41</sup> i.e. an accredited assessment process; an assessment on referral information; an assessment on preliminary documentation; a public environment report; an environmental impact statement; a public inquiry.
- <sup>42</sup> [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), Part 9 of Chapter 4.
- <sup>43</sup> Australia, Department of the Environment, Water, Heritage and the Arts, EPBC Act Environment Assessments – [Decision Whether to Approve](#), last updated 23 November 2009. See also [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), s 136.
- <sup>44</sup> [Environment Protection and Biodiversity Conservation Act 1999 \(Cth\)](#), s 136.
- <sup>45</sup> 'Protected animal' is defined, in part, in the Schedule to the Act as an animal that is prescribed under the Act as threatened, rare, near threatened or least concern wildlife.
- <sup>46</sup> [Nature Conservation Act 1992 \(Qld\)](#), s 88 and Schedule. The Queensland Government ceased issuing permits for the shooting of flying foxes in September 2008: Hon Andrew McNamara MP, [Shooting of Flying Foxes to be Illegal in Queensland](#), *Ministerial Media Statement*, 15 May 2008.
- <sup>47</sup> That is, 3,000 penalty units. The value of a 'penalty unit' is \$100: [Penalties and Sentences Act 1992 \(Qld\)](#), s 5.
- <sup>48</sup> The maximum penalty would apply to the taking of a dusky flying-fox (*pteropus brunneus*) which is classified under the *Nature Conservation Act 1992 (Qld)* as 'extinct in the wild wildlife': [Nature Conservation \(Wildlife\) Regulation 2006 \(Qld\)](#), Schedule 1. The large eared flying fox (*pteropus macrotis epularius*) is classified as 'vulnerable wildlife'; the taking of five or more of these animals would attract the maximum penalty. As little red, spectacled, grey-headed and black flying foxes are classified as 'least concern wildlife', the maximum penalty for section 88 offences concerning them is \$100,000 or one year's imprisonment for ten or more animals. The maximum penalty for an offence involving between five and nine 'least concern' animals is \$22,500. The maximum penalty for other offences is \$10,000.
- <sup>49</sup> See below.
- <sup>50</sup> Section 62 of the [Nature Conservation Act 1992 \(Qld\)](#) provides for a maximum penalty of \$300,000 or 2 year's imprisonment for a person, other than an authorised person, to take, use, keep or interfere with a cultural or natural resource of a protected area, other than in specified circumstances.
- <sup>51</sup> That is, 1000 penalty units.
- <sup>52</sup> That is, 100 penalty units.
- <sup>53</sup> [Nature Conservation \(Wildlife Management\) Regulation 2006 \(Qld\)](#), s 187A
- <sup>54</sup> Hon Kate Jones MP, Minister for Climate Change and Sustainability, [North Eton Community Granted Flying Fox Removal Permit](#), *Ministerial Media Statement*, 23 October 2009. See also for eg, Daniel Hamilton, [North Eton Street Turns into Local Bat Cave](#), *ABC Tropical North*, 5 October 2009; Miriam Hall, [Flying](#)



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[Foxes Cause Problems for North Eton Residents](#), *ABC Rural*, 20 March 2009; [Besieged by Bats: North Eton residents are left hanging](#), *Daily Mercury*, 5 September 2008.

- <sup>55</sup> Hon Kate Jones MP, [North Eton Community Granted Flying Fox Removal Permit](#), *Ministerial Media Statement*, 23 October 2009.
- <sup>56</sup> Hon Kate Jones MP, Minister for Climate Change and Sustainability, [North Eton Flying Foxes get their Marching Orders](#), *Ministerial Media Statement*, 3 April 2010.
- <sup>57</sup> See eg, Robin Crocker & Associates, EDGe Environmental Design Pty Ltd and Practical Ecology Pty Ltd, Flying-Fox Campsite Management Plan Yarra Bend Park, prepared for the Victorian Department of Sustainability and Environment, August 2005, p 6 and Department of Employment, Economic Development and Innovation, [Flying Foxes and Hendra Virus – Information for the community](#).
- <sup>58</sup> See eg, Peter Morley, Family in Fear as Bats Hit Plague Proportions, *Courier Mail*, 8 September 2009, p 9; Jennifer Eliot, Flying Fox Colony Drives Town Batty, *Cairns Post*, 29 August 2009, p 12.
- <sup>59</sup> See eg, [Living with Flying-Foxes: Health and conservation issues for people living near flying-fox communities](#).
- <sup>60</sup> See eg, Billie J Roberts, [Management of Urban Flying-fox Camps: Issue of relevance to camps in the Lower Clarence Valley, NSW](#), Centre for Innovative Conservation Strategies, 2006, 17 and Peter Morley, Family in Fear as Bats Hit Plague Proportions, *Courier Mail*, 8 September 2009, p 9.
- <sup>61</sup> Robin Crocker & Associates, EDGe Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 6.
- <sup>62</sup> Flying foxes make a range of calls - “contact calls, chirps and squabbles, searching calls by mother flying-foxes seeking their young when returning to the colony, and a range of mating and warning calls”: Victoria, Department of Sustainability and Environment, [Flying-foxes – frequently asked questions](#). See also, Billie J Roberts, [Management of Urban Flying-fox Camps: Issue of relevance to camps in the Lower Clarence Valley, NSW](#), Centre for Innovative Conservation Strategies, 2006, pp 15 - 16.
- <sup>63</sup> The odour emanating from a colony is due to the scent used by males to mark their territory and possibly also the scent emitted by the young to help their mothers locate them: Billie J Roberts, [Management of Urban Flying-fox Camps: Issue of relevance to camps in the Lower Clarence Valley, NSW](#), Centre for Innovative Conservation Strategies, 2006, p 16.
- <sup>64</sup> There have been concerns raised about the presence of a flying fox colony near the Charters Towers hospital which have resulted in a helicopter pilot being forced to abort a landing before landing successfully but having killed a number of flying foxes. See eg, [Bats prompt chopper safety fears](#), *ABC News*, 9 February 2010 and Lendl Ryan, Flying Foxes Force Rescuers to Abort Landing, *Townsville Bulletin*, 9 February 2010.
- <sup>65</sup> See eg, Jennifer Eliot, Flying Fox Colony Drives Town Batty, *Cairns Post*, 29 August 2009, p 12.
- <sup>66</sup> CSIRO, [Hendra Virus](#), Feature Article.
- <sup>67</sup> Department of Employment, Economic Development and Innovation, [Flying Foxes and Hendra Virus – Information for the community](#)
- <sup>68</sup> CSIRO, [Hendra Virus](#), Feature Article.
- <sup>69</sup> Queensland Health, [Hendra Virus Infection](#), Fact Sheet.
- <sup>70</sup> The other contracted it from a microbat: Queensland, Department of Environment and Resource Management, [Flying-foxes](#), last updated 8 December 2008. Microbats are also known as insectivorous bats, although one Australian species of microbat also eats “frogs, birds, lizards and other mammals”.



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Microbats weigh between 3g and 150g: Queensland, Department of Environment and Resource Management, [Micro bats: The Insect Terminators](#).

- <sup>71</sup> Queensland Health, [Australian Bat Lyssavirus](#), Fact Sheet.
- <sup>72</sup> Sarah Elks, [Education is what is needed – not a flying fox cull](#), *The Australian*, 8 January 2010; Brooke Baskin, Bats Attack Seven: Townsville victim tested for potentially deadly virus, *Townsville Bulletin*, 14 January 2010.
- <sup>73</sup> Queensland Health, [Australian Bat Lyssavirus](#), Fact Sheet.
- <sup>74</sup> See eg, Lendl Ryan, [Flying Foxes Force Rescuers to Abort Landing](#), *Townsville Bulletin*, 9 February 2010 (the Charters Towers Regional Council Mayor calling on the State Government to allow the removal of the flying fox colony near the Charters Towers Hospital) and Jennifer Eliot, Flying Fox Colony Drives Town Batty, *Cairns Post*, 29 August 2009, p 12 (Mr Knuth MP suggested that flying fox colonies should be moved from residential areas).
- <sup>75</sup> Australia, Department of the Environment and Heritage, [EPBC Act Administrative Guidelines on Significance – Supplement for the Spectacled Flying-fox](#), 2003, p 6. The department is currently titled the Department of Environment, Water, Heritage and the Arts.
- <sup>76</sup> Billie J Roberts, [Management of Urban Flying-fox Camps: Issue of relevance to camps in the Lower Clarence Valley, NSW](#), Centre for Innovative Conservation Strategies, 2006, p 34.
- <sup>77</sup> The playground was closed because the Council were unable to keep the area clean: Jodie van de Wetering, [Flying fox influx closes playground](#), *ABC Wide Bay Qld*, 21 January 2010.
- <sup>78</sup> Jodie van de Wetering, [Flying fox influx closes playground](#), *ABC Wide Bay Qld*, 21 January 2010.
- <sup>79</sup> If noise is being used to disperse flying foxes, “consideration has to be made in regard to potential ‘nuisance’ concerns under the Environmental Protection Act 1994”: Hon Tim Mulherin, [Minister Visits Flying Fox Affected Farms](#), *Ministerial Media Statements*, 14 January 2009.
- <sup>80</sup> Many of these methods have also been used by people in rural areas to attempt to stop flying foxes eating fruit in orchards: see eg, Julian Luke, A Waiting Game for Stone Fruit Growers, *Daily News (Warwick)*, 3 November 2009; Scott Lamond, Lighting up to Save Crops from Flying Foxes, *Country Hour (ABC Radio)*, 18 November 2009; and New South Wales, Department of Environment, Climate Change & Water, [Why was the grey-headed flying-fox listed as vulnerable? How does this affect me?](#), last updated 17 March 2009.
- <sup>81</sup> See, e.g., Botanic Gardens Trust Sydney Australia, [Proposed Flying-fox Relocation](#) (website).
- <sup>82</sup> Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 7.
- <sup>83</sup> Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 7.
- <sup>84</sup> No flying foxes have roosted in the Botanical Gardens or inner city parks since April 2003: Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 8.
- <sup>85</sup> Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 6.
- <sup>86</sup> A small colony also established at Eastern Park in Geelong (about 60 km from Melbourne). Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 8.

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- <sup>87</sup> Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 6.
- <sup>88</sup> Robin Crocker & Associates, EDGE Environmental Design Pty Ltd and Practical Ecology Pty Ltd, [Flying-Fox Campsite Management Plan Yarra Bend Park](#), p 6.
- <sup>89</sup> Botanic Gardens Trust Sydney Australia, [Proposed Flying-fox Relocation](#) (website).
- <sup>90</sup> Erik Jensen, No sleeping in Botanic Gardens, *Sydney Morning Herald*, 26 February 2010.
- <sup>91</sup> Botanic Gardens Trust Sydney Australia, [Proposed Flying-fox Relocation](#) (website).
- <sup>92</sup> Australian Research Centre for Urban Ecology (ARCUE), Royal Botanic Gardens Melbourne, [Draft Public Environment Report: Proposed relocation of a camp of Grey-headed Flying-foxes \(Pteropus poliocephalus\) from the Royal Botanic Gardens Sydney](#), prepared for Botanic Gardens Trust, October 2009, p vii.
- <sup>93</sup> Monica Heary, Bid to move flying foxes to new camps, *St George and Sutherland Shire Leader*, 10 December 2008.
- <sup>94</sup> Australian Research Centre for Urban Ecology (ARCUE), Royal Botanic Gardens Melbourne, [Draft Public Environment Report: Proposed relocation of a camp of Grey-headed Flying-foxes \(Pteropus poliocephalus\) from the Royal Botanic Gardens Sydney](#), prepared for Botanic Gardens Trust, October 2009, p vii.
- <sup>95</sup> Erik Jensen, No sleeping in Botanic Gardens, *Sydney Morning Herald*, 26 February 2010.
- <sup>96</sup> Botanic Gardens Trust Sydney Australia, [Proposed Flying-fox Relocation](#) (website).
- <sup>97</sup> The documents are available at [http://www.rbg Syd.nsw.gov.au/whats\\_new/proposed-flying-fox-relocation](http://www.rbg Syd.nsw.gov.au/whats_new/proposed-flying-fox-relocation).
- <sup>98</sup> Erik Jensen, No sleeping in Botanic Gardens, *Sydney Morning Herald*, 26 February 2010.
- <sup>99</sup> Public submissions on the draft plan (and on the draft recovery plan for the spectacled flying fox) closed on 4 January 2010: Bat Care Brisbane, [Input Needed: Recovery Plans for Vulnerable Flying-Foxes](#), 10 October 2009.
- <sup>100</sup> Erik Jensen, No sleeping in Botanic Gardens, *Sydney Morning Herald*, 26 February 2010.
- <sup>101</sup> Nick Edards, Garrett's real bat problem: flying foxes set to extend the headache, *Crikey*, 25 February 2010.
- <sup>102</sup> Donna Sharpe, [Council Blames Flying Foxes for Singleton Tree Felling](#), *The Herald*, 6 July 2009; Donna Sharpe, [Fruit Tree Loss Latest Casualty in Hunter Flying Fox War](#), *The Herald*, 6 February 2010; Kate Morris, [Bats Must Go](#), *Singleton Argus*, 9 November 2007 and [It's the Bats or the Park](#), *Singleton Argus*, 19 October 2007..
- <sup>103</sup> Donna Sharpe, [Fruit Tree Loss Latest Casualty in Hunter Flying Fox War](#), *The Herald*, 6 February 2010.
- <sup>104</sup> Kate Morris, [Bats Must Go](#), *Singleton Argus*, 9 November 2007.
- <sup>105</sup> [Council Considers Ending Flying Fox Fight](#), *ABC*, 8 April 2010; [Bats on the Menu](#), *Singleton Argus*, 16 April 2010.
- <sup>106</sup> See eg, Jennifer Eliot, Flying Fox Colony Drives Town Batty, *Cairns Post*, 29 August 2009, p 12 and Katter Takes Aim at Fruit Bats to Stop Hendra, *Cairns Post*, 14 September 2009, online.
- <sup>107</sup> See also, Hon Kate Jones MP, [North Eton Community Granted Flying Fox Removal Permit](#), *Ministerial Media Statement*, 23 October 2009.
- <sup>108</sup> Wildlife Preservation Society of Queensland, [Flying Foxes](#).
- <sup>109</sup> Janelle Miles, Cull Trees, Not Bats, Says Hendra Group, *Courier Mail*, 14 September 2009, p 9.

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- <sup>110</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>111</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>112</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>113</sup> [Living with Flying-Foxes: Health and conservation issues for people living near flying-fox communities](#). The Queensland Department of Environment and Resource Management has information about netting fruit trees at [http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/living\\_with\\_wildlife/flyingfoxes/netting\\_fruit\\_trees.html](http://www.derm.qld.gov.au/wildlife-ecosystems/wildlife/living_with_wildlife/flyingfoxes/netting_fruit_trees.html).
- <sup>114</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>115</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>116</sup> See eg, [Living with Flying-Foxes: Health and conservation issues for people living near flying-fox communities](#).
- <sup>117</sup> Wildlife Preservation Society of Queensland, [Batty Cruises 2010](#).
- <sup>118</sup> Daniel Bateman, [Tourists Go Batty Over Flying Foxes](#), *cairns.com.au*, 23 February 2010.
- <sup>119</sup> Daniel Bateman, [Tourists Go Batty Over Flying Foxes](#), *cairns.com.au*, 23 February 2010.
- <sup>120</sup> Pialba is between Maryborough and Bundaberg, Queensland.
- <sup>121</sup> The fly-out at sunset of up to one million flying foxes is suggested as being photo-worthy: Palms Caravan Park, [Holidays Tours](#).
- <sup>122</sup> See eg, Sarah Elks, [Education is what is needed – not a flying fox cull](#), *The Australian*, 8 January 2010: [Living with Flying-Foxes: Health and conservation issues for people living near flying-fox communities](#); Brooke Baskin, Flying Fox Furore: Carer says cull would be disastrous, *Townsville Bulletin*, 18 January 2010.
- <sup>123</sup> Queensland, Department of Environment and Resource Management, [Flying-foxes](#).
- <sup>124</sup> Janelle Miles, Cull Trees, Not Bats, Says Hendra Group, *Courier Mail*, 14 September 2009, p 9. See also Natasha Bitá, Death on the Wing, *Australian*, 10 September 2009, p 11 and Queensland, Department of Environment and Resource Management, [Flying-foxes](#), last updated 8 December 2008.
- <sup>125</sup> See eg, New South Wales, Department of Environment and Climate Change, [Flying-fox Camp Management Policy](#), 2007, p 2.
- <sup>126</sup> See eg, Brooke Baskin, Flying Fox Furore: Carer says cull would be disastrous, *Townsville Bulletin*, 18 January 2010.