

Flying-fox camp management policy



Department of **Environment & Climate Change** NSW



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This policy should be cited as Department of Environment and Climate Change NSW 2007, *Flying-fox camp management policy*, Department of Environment and Climate Change NSW, Sydney

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Cover photograph: Kylie McClelland

Published by:

Department of Environment and Climate Change NSW

59–61 Goulburn Street, Sydney

PO Box A290

Sydney South NSW 1232

Ph: (02) 9995 5000 (switchboard)

Ph: 131 555 (environment information and publications requests)

Ph: 1300 361 967 (national parks information and publications requests)

Fax: (02) 9995 5999

TTY: (02) 9211 4723

Email: info@environment.nsw.gov.au

Website: www.environment.nsw.gov.au

ISBN 978 1 74122 460 3

DEC 2007/281

December 2007

Printed on recycled paper

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Definitions

- **activity** is as defined under Part 5, s. 110, of the *Environmental Planning and Assessment Act 1979*
- **camp** is a place where flying-foxes congregate to rest and socialise and in which they may breed, give birth and care for their young
- **community land** means land that is classified as community land under Part 2, Division 1, Chapter 6 of the *Local Government Act 1993*
- **determining authority** is as defined under Part 5, s. 110, of the *Environmental Planning and Assessment Act 1979*
- **development** is as defined under s. 4 of the *Environmental Planning and Assessment Act 1979*
- **development control plan** is as defined under s. 4 of the *Environmental Planning and Assessment Act 1979*
- **endangered population** means a population specified in Schedule 1, Part 2, of the *Threatened Species Conservation Act 1995*
- **endangered ecological community** means an ecological community specified in Schedule 1, Part 3, of the *Threatened Species Conservation Act 1995*
- **habitat** means an area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community and includes any living (for example, insects, plants, animals) or non-living (for example, light, temperature, atmospheric gases) component
- **harm a native animal** (including an animal of a threatened species, population or ecological community) includes hunt, shoot, poison, net, snare, spear, pursue, capture, trap, injure or kill a native animal but does not include harm through changing the habitat of an animal. It is an offence under s. 118D of the *National Parks and Wildlife Act 1974* to damage the habitat of a threatened species.
- **local environmental plan** is as defined under s. 4 of the *Environmental Planning and Assessment Act 1979*
- **pick** a native plant (including a threatened species, population or ecological community) means gather, pluck, cut, pull up, destroy, poison, take, dig up, remove or injure the plant or any part of the plant
- **protected fauna** are species **not** named in Schedule 11 of the *National Parks and Wildlife Act 1974*
- **protected native plants** are species named in Schedule 13 of the *National Parks and Wildlife Act 1974*
- **vulnerable species** are species specified in Schedule 2 of the *Threatened Species Conservation Act 1995*
- **threatened species, populations and ecological communities** are as specified in Schedules 1 and 2 of the *Threatened Species Conservation Act 1995*

Summary

Three species of flying-fox roost in large numbers in camps in NSW: the grey-headed, black and little red flying-fox. All these species are protected under the *National Parks and Wildlife Act 1974*. Grey-headed and black flying-foxes are also listed as threatened under the *Threatened Species Conservation Act 1995*, and the grey-headed flying-fox is listed nationally as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).

Flying-foxes help to preserve native forests by pollinating plants and dispersing seed. As a result, they have a crucial role to play in conserving native plants and animals.

The widespread and continued clearing and modification of native vegetation in eastern Australia has resulted in the substantial reduction of flying-fox foraging and roosting habitat. Flying-foxes are increasingly roosting in camps near urban areas when food is locally available, where they can disturb residents or other members of the community, and create conflicts. Urban encroachment in areas housing historically-used or irregularly-used flying-fox camps has also resulted in increased conflict between flying-foxes and the general community.

This policy:

- helps Department of Environment and Climate Change (DECC) staff, the community and wildlife carers, local government and catchment management authorities to appropriately conserve and manage flying-fox camps in NSW
- helps all stakeholders to understand and meet their legal responsibilities regarding the management of flying-fox camps (see chapter 2)
- advises DECC staff and local government employees about ways of dealing with public complaints about flying-foxes (see section 4.1)
- outlines strategies for a flying-fox education and communication strategy for DECC and community educators (see section 4.2)
- provides guidelines for councils, landowners and land managers, catchment management authorities and infrastructure providers to assist in forward planning, so conflicts caused by locating inappropriate land uses near flying-fox camps are avoided or mitigated (see chapter 5)
- provides guidelines and recommended procedures for relocating flying-fox camps (see section 6.1)
- informs those wishing to relocate flying-fox camps how to obtain and meet the conditions of an appropriate licence (see sections 6.1 and 6.2).

DECC does not generally support disturbing flying-fox camps as:

- they are situated to provide flying-foxes with access to available food resources
- relocation attempts are often unsuccessful
- disturbance creates stress for and can injure the animals, especially the young.

However, DECC acknowledges that there may be circumstances in which a relocation attempt may be warranted.

1 Introduction

1.1 Background

In NSW, three flying-fox species roost in camps: the grey-headed, black and little red flying-fox. All these species are protected under NSW legislation, with the grey-headed flying-fox also protected under Commonwealth legislation. Chapter 2 provides more information on the legislative status of flying-foxes.

Flying-foxes are nomadic, with little red flying-foxes being the most nomadic and irregular in their movements. Flying-foxes move throughout eastern Australia in response to the often unpredictable availability of native food resources, primarily the nectar, pollen and fruits of native trees. As a result, and because of their wide-ranging habits, they have an important ecological role in dispersing native seed and pollen, thus maintaining native vegetation, including forests.

Camps are vital to the conservation of flying-foxes as they provide access to food; sites for mating, breeding and raising young; and stopover sites for animals migrating throughout their range. Although some flying-fox camps are used year-round, most are only occupied when food resources are available within approximately 50 km. At these times, camps may contain many animals.

Grey-headed and black flying-foxes particularly will regularly return to the same camp site year after year when food resources are available. Mixed species flying-fox camps can occur in NSW, particularly in the north-east. It is unknown whether little red flying-foxes, who have many camps west of the Great Dividing Range, return as regularly to the same camps.

It is critical that the network of camps used by flying-foxes be maintained across the landscape, allowing the animals to move across their range in response to food availability. Individual camps must therefore be managed from the perspective that they are an integral part of a larger network of camps. Many camps are located in endangered ecological communities (as per the *Threatened Species Conservation Act 1995*) – appropriate site-specific management options must consider this.

Land clearing in eastern Australia has resulted in the substantial reduction of flying-fox foraging and roosting habitat. Consequently, flying-foxes are increasingly roosting in camps in urban areas where food is available. Urban encroachment in areas housing historically-used or irregularly-used flying-fox camps has also resulted in increased conflict between flying-foxes and the general community. In these locations, they can disturb people such as residents or those working in the area, who may complain to their local council or to the Department of Environment and Climate Change (DECC). The concerns of all stakeholders need to be considered in such situations.

DECC has statutory responsibility for the protection and care of all native fauna, including flying-foxes, regardless of whether they occur on public land such as national parks or privately-owned land. Individual landowners or land managers are also legally responsible for protecting native fauna on their property, including flying-foxes and their camps. DECC can provide advice and assistance to landowners and land managers regarding flying-fox camp management.

DECC can also raise community awareness and understanding of flying-foxes and the importance of camps for flying-fox conservation, and can alleviate concerns about flying-foxes' perceived threat to public health.

Different cultural groups in the community value flying-foxes. Among some Aboriginal, Pacific Islander and South-East Asian communities, flying-foxes may have totemic or kinship significance as well as being a traditional food source.

DECC recognises that there are substantial knowledge gaps regarding the biology, habitat requirements and habits of flying-foxes. In particular, the factors influencing why they set up camps in certain places rather than others are poorly understood.

1.2 About this policy

This policy:

- provides guidelines for and information on conserving and managing flying-foxes and their camps
- advises on alleviating concerns about perceived negative impacts of flying-foxes and their camps
- will be reviewed and updated as new information becomes available
- applies to all flying-fox camps in NSW across public and privately-owned land and will replace all previous DECC policies
- will not compromise the conservation of any native species.

The policy is set out as follows:

- **Chapter 2** advises on the legislative requirements that must be met regarding the conservation of flying-foxes and their camps. This information will be especially useful for landowners and land managers who have flying-fox camps on their properties, scientists who wish to research flying-foxes, farmers whose crops may be interfered with by flying-foxes, Aboriginal people who wish to hunt flying-foxes as a traditional food source, local councils managing flying-fox camps, developers and local councils wishing to provide infrastructure near flying-fox camps and those wishing to relocate flying-fox camps to other areas.
- **Chapter 3** is the policy itself, and will interest everyone who has anything to do with flying-foxes and their camps.
- **Chapter 4** deals with community education, and will interest community educators such as environmental groups and wildlife carers, and local council and DECC staff who may need to handle complaints. Community members who are disturbed by flying-foxes may also find this chapter relevant.
- **Chapter 5** advises on planning for development near and around flying-fox camps. This information will be valuable for local councils and catchment management authorities that plan for and manage development, infrastructure providers and developers, and landowners who may wish to clear their land of native vegetation that forms part of a flying-fox camp for development purposes.
- **Chapter 6** is for those who wish to relocate flying-fox camps to other locations, and will interest local and state government agencies, community groups and wildlife carers. It contains detailed information on developing a camp relocation proposal, applying for a licence to relocate a camp and DECC's evaluation of a licence application. Note that DECC generally does not support camp relocation.
- **Chapter 7** contains a list of other sources for anyone who is interested in learning more about flying-foxes and their camps.

For more information about any issue covered in this policy, contact DECC's Environment Line on 1300 361 967

2 Legislation

All NSW flying-fox species (grey-headed, black and little red) are protected under the *National Parks and Wildlife Act 1974* (NPW Act). Both the grey-headed and black flying-fox are considered to be threatened and are listed as 'vulnerable' under the *Threatened Species Conservation Act 1995* (TSC Act). The grey-headed flying-fox is also listed nationally as 'vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth).

DECC is responsible under the NPW Act for protecting and caring for all flying-foxes on public land such as national parks and privately-owned land. Threatened species, that is, the grey-headed and black flying-fox, are further protected under the TSC Act.

2.1 National Parks and Wildlife Act 1974

Generally, all native animal species, and many species of native plants, are protected by law in NSW. It is an offence under the NPW Act to harm protected species without an appropriate approval. Flying-foxes are protected under s. 98 of the NPW Act.

Under ss 98, 118A and 118D of the NPW Act, there are significant penalties for harming protected fauna, for harming threatened animals or damaging their habitat, or for picking threatened flora, without an appropriate licence, consents or approvals.

Under s. 120 of the NPW Act, a licence may be issued to shoot a limited number of flying-foxes that are damaging crops. Such licences specify the number, location and species that may be harmed and encourage licensees to shoot to scare rather than to kill wherever possible. See the *Policy and procedural guidelines for the mitigation of commercial crop damage by flying foxes* (DEC 2005) for more information.

A licence may also be issued under s. 120 of the NPW Act to applicants wishing to relocate little red flying-fox camps. Section 6.1 contains more information on this issue.

A licence under s. 132C of the NPW Act may be issued to a person or organisation undertaking an activity for scientific, educational or conservation purposes that is likely to result in one or more of the following:

- harm to any protected fauna, or to an animal that is a threatened species or is part of an endangered population or an endangered ecological community under the TSC Act
- the picking of any protected native plant or of any plant that is a threatened species or is part of an endangered population or an endangered ecological community under the TSC Act
- damage to critical habitat
- damage to habitat of a threatened species, an endangered population or an endangered ecological community.

2.2 National Parks and Wildlife Regulation 2002

The National Parks and Wildlife Regulation exempts Aboriginal people from restrictions imposed by the NPW Act on hunting protected animals and gathering certain plants. Protected but not threatened fauna (that is, little red flying foxes but not black or grey-headed flying foxes) may be hunted for domestic purposes in the following areas as defined in the NPW Act: a wildlife district, wildlife refuge, wildlife management area, conservation area, wilderness area or area subject to a wilderness protection agreement. This exemption applies to Aboriginal people only.

2.3 Threatened Species Conservation Act 1995

The TSC Act requires the proponent of an action that is not regulated under the *Environmental Planning and Assessment Act 1979* to assess whether the action is likely to result in the harming or picking of a threatened species, population or ecological community, or in damage to their habitat. If the proponent concludes that this is likely to occur and wishes to proceed with the action, a licence under s. 91 or a certificate under s. 95 of the TSC Act must be applied for. Chapter 6 contains detailed information on applying for such a licence or certificate.

Should undertaking such an action result in the harming or picking of a threatened species, population or ecological community or in damage to its habitat, for example, death of or injury to a flying-fox, holding such a licence or certificate and complying with its terms may provide a defence against prosecution (see section 2.1).

2.4 Environmental Planning and Assessment Act 1979

Assessment of impacts on protected and threatened species

Parts 3A, 4 and 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) require impacts on protected and threatened species to be considered when assessing and approving development proposals.

Part 3A provides an assessment and approvals procedure for major infrastructure and other projects where the Minister for Planning, who is the approval authority, has declared these to be 'major projects', either through a state environmental planning policy or through an order published in the NSW Government Gazette.

The introduction of the TSC Act resulted in amendment of the EP&A Act so the impact of development and its activities on threatened species, populations, ecological communities or their habitats could be assessed. For the purposes of Parts 4 and 5, an assessment, commonly known as an Assessment of Significance, is required. The factors for consideration within an Assessment of Significance are provided in s. 5A of the EP&A Act. A local council assesses the impact of development on protected and threatened flora and fauna when it considers impacts on the natural environment under Part 4, s. 79C [1] [b] of the EP&A Act. The assessment of the impact of activities on protected and threatened flora and fauna is also the responsibility of determining authorities such as local councils, DECC or the Department of Planning when considering to the fullest extent possible all matters affecting or likely to affect the environment under Part 5, s. 111 of the EP&A Act.

If the assessment indicates that a significant impact on threatened species, populations, ecological communities or their habitats is likely, the proponent must prepare a species impact statement and consult with DECC. Chapter 6 provides more information on species impact statements.

Strategic planning

Under Part 3 of the EP&A Act, the Department of Planning must consult with DECC before preparing a draft state environmental planning policy, environmental study or draft regional environmental plan, if critical habitat or threatened species, populations or ecological communities, or their habitats, will or may be affected by the draft policy, environmental study or draft plan.

A local council must consult with DECC before preparing an environmental study or draft local environmental plan if:

- critical habitat or threatened species, populations or ecological communities, or their habitats, will or may be affected by the environmental study or draft plan
- the council believes that the environment will or may be affected by the plan.

2.5 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) protects the environment, particularly matters of national environmental significance which include listed threatened species and communities. It streamlines national environmental assessment and approvals processes, protects Australian biodiversity and integrates management of important natural and cultural places.

Approval is required for actions that are likely to have a significant impact on:

- a matter of national environmental significance
- the environment of Commonwealth land (even if taken outside Commonwealth land)
- the environment anywhere in the world (if the action is undertaken by the Commonwealth).

An action includes a project, development, undertaking, activity, or series of activities.

Activities that affect listed species or communities in Commonwealth areas require a permit under the EPBC Act.

Proponents of activities that may have a significant impact on the grey-headed flying-fox (listed as a threatened species under the EPBC Act) are advised to submit their referrals to EPBC.referrals@environment.gov.au.

The Commonwealth will determine whether an approval is required under the EPBC Act. If an approval is required, NSW and the Commonwealth governments will liaise to determine what assessment process is appropriate.

Additional information on the EPBC Act can be found on the Department of the Environment and Water Resources' website: www.environment.gov.au.

3 The policy

3.1 Policy objectives

1. To assist DECC and others in managing flying-foxes and their camps in a manner that will ensure the maintenance of a network of flying-fox camps throughout their range, and the conservation of the flying-fox population.
2. To provide a consistent approach when managing flying-fox camps so:
 - public health and safety are not compromised
 - legislation, animal welfare and conservation objectives, including recovery planning, are considered
 - the extent to which people feel that their interactions with flying-fox camps are negative is reduced
 - relevant agencies and organisations are jointly engaged in resolving the issues associated with flying-fox camp management
 - accessible, best practice management tools to guide policy implementation are provided by DECC and other stakeholders.

3.2 Policy provisions

1. DECC will encourage the conservation of flying-fox camps on public and private land and will protect and manage flying-fox camps on lands administered by DECC.
2. The National Parks and Wildlife Regulation 2002 exempts Aboriginal people from restrictions imposed by the NPW Act on hunting protected animals and gathering certain plants (see section 2.2 for more information).
3. DECC will not generally support disturbing a flying-fox camp to force the animals to desert a camp, or to try and relocate a camp, for the following reasons:
 - such exercises have rarely resulted in desirable outcomes for all stakeholders
 - such exercises are very expensive, need an ongoing commitment from people and of financial resources, and have uncertain outcomes
 - not all relocation attempts have been successful – some attempts have failed to relocate the animals, forcing the flying-foxes to desert the camp rather than move to a new location, while others have transferred the perceived problem to other areas as animals disperse to one or more unsuitable new locations near homes or urban areas
 - stress caused by disturbing the animals sometimes results in fatalities or injuries.
4. DECC does not support disturbing camps under the following circumstances:
 - from when females are heavily pregnant until the young can fly independently, as pregnant females and dependent young are especially vulnerable to injury or fatality and unborn young may be aborted if the mother is stressed. Although this period occurs at about the same time of year for grey-headed and black flying-foxes, the cycle differs by approximately six months for little red flying-foxes.
 - when there are adverse climatic conditions – for example, during a severe drought resulting in widespread blossom failure – when a large proportion of the population may occur in one or a few local camps, due to the local availability of food.
 - when daytime temperatures are extremely high. Even if disturbance happens in the early, cooler part of the day, due to the time taken for animals to abandon the camp and move to a new location, they may be exposed to high daytime temperatures while searching for a new roost.
 - when DECC considers it likely that, due to proximity, flying-foxes disturbed from a camp will join camps in nearby towns, compounding problems at those sites.

5. DECC supports camp management options that aim to retain flying-foxes *in-situ* (that is, in their original position). This could include the use of non-roost species as vegetation buffers, regeneration programs to extend roost sites away from residential areas, or improving roost habitat quality in suitable areas to ensure flying-foxes have alternative habitats available.
6. Preparation and implementation of a strategic plan to manage a camp *in-situ* (in its original position) should precede any proposal to relocate the camp. Explanation as to why *in-situ* management is not viable must be provided to the local DECC Regional Operations Branch before any relocation proposal or licence application will be assessed. DECC acknowledges that in exceptional circumstances an attempt to move a camp may be warranted. See chapter 6 for a recommended process for developing such a proposal, information on the associated licensing requirements, and more information on disturbing and relocating flying-fox camps
7. DECC will assess the level of compliance with the 'Procedure for developing a flying-fox camp relocation proposal' when assessing applications for a licence under s. 91 of the TSC Act (see section 6.1 for more information).
8. A report assessing whether an attempt to relocate a flying-fox camp has been successful must be submitted to DECC following all relocation attempts licensed by DECC (see section 6.2 for more information).
9. The TSC and NPW Acts require that any person wishing to harm flying-foxes or damage their habitat obtain appropriate licences, including for cultural purposes. See chapters 2 and 6 for more information.
10. DECC acknowledges the important role camps perform as research sites. DECC will encourage research into the ecology of flying-foxes and their use of camps, including research into camp selection criteria. Support for national population estimates will continue as a method of monitoring population trends and identifying new camps. Overall research directions and priorities are set out in the NSW threatened species priorities action statement – visit www.threatenedspecies.environment.nsw.gov.au – and 'National recovery plan for the grey-headed flying-fox *Pteropus poliocephalus*' (DECC in prep).
11. DECC will support bushland restoration activities that improve the quality, quantity and integrity of habitat in flying-fox camps and maintain camp function. The impacts of ecological burns must be considered, particularly in relation to timing.
12. DECC will support licensed wildlife carers' use of best practice to rehabilitate and release flying-foxes that have suffered as a result of extreme weather, for example, flying-foxes that have suffered from heat stress or as a result of the drought. Rehabilitation, release and, in special circumstances, retention of flying-foxes is governed by the *Rehabilitation of fauna policy* (NPWS 2002) and the conditions of licences DECC issues to wildlife carer groups.
13. DECC will coordinate the preparation and implementation of an education and communication strategy in partnership with other agencies or organisations that share responsibility for addressing community needs and concerns. The strategy will be implemented before the time of year when influxes of flying-foxes usually occur. This time will vary in different parts of NSW. In some areas, influxes may not be predictable. An outline of such a strategy is provided in section 4.2.
14. DECC will provide access to information on flying-fox camp locations.
15. DECC will respond to public complaints about flying-fox camps promptly, courteously and efficiently.
16. When there are flying-fox camps near airports, there could be collisions with aircraft when flying-foxes leave camps at dusk or return to camps before dawn. Should such collisions occur or be considered a potential problem, DECC will liaise with the relevant authorities to develop joint strategies and actions.

17. DECC will encourage local government to protect flying-fox camps through local environmental planning controls, for example through appropriate land use zoning and development control plans (see section 5.1).
18. DECC will encourage local government to consider the location of flying-fox camps early in strategic planning processes, particularly when planning for proposed residential areas, schools and similar infrastructure. DECC has supplied councils in eastern NSW with information on flying-fox camps, including their location, and will continue to do so, including when consulted in accordance with ss 34 and 62 of the EP&A Act (see section 5.1 for more information).
19. DECC will encourage local government to prepare plans of management for flying-fox camps on council land, and on land under councils' care and control. More details of planning options to help local government to protect flying-fox camps are provided in sections 5.1 and 5.2.
20. DECC will encourage consideration of the location of flying-fox camps and the provision of spatial separation between camps and hazard reduction activities in the planning and implementation of bushfire hazard reduction activities.
21. DECC will encourage consent authorities for native vegetation clearing and approval authorities for property vegetation plans under the *Native Vegetation Act 2003*, and organisations responsible for infrastructure development under various legislation, to identify and protect camps and provide for their expansion when undertaking strategic and site planning (see section 5.3 for more information).

4 Communicating with the community

The impact of a flying-fox camp on people living nearby varies widely. Some people view camps as interesting and important while others are much less appreciative of them. Complaints about flying-fox camps generally arise from their proximity to residential development. Most complaints relate to smell, noise, droppings, the dirtying of cars or houses, fear of disease and loss of or damage to backyard fruit crops.

This chapter discusses strategies that DECC staff, local councils, and community educators such as environmental groups and wildlife carers can use to inform the community about flying-foxes and their camps, and engage the community.

4.1 Responding to public complaints about flying-fox camps

This section should be read by people handling public complaints about flying-foxes.

The approach to camp management must be consultative and proactive. Clear, concise and accurate information about flying-foxes must be provided to the community, and best-practice management principles should be promoted.

A database recording public complaints relating to flying-fox camps, and actions subsequently taken, should be established, maintained and regularly updated. This database will facilitate the collection and collation of information about any particular camp, providing a recorded history of the camp. An example of such a record is provided at the end of this section.

Once a complaint is received from a member of the public, it should be immediately logged on the database spreadsheet. An appropriately experienced person should arrange an appointment with the person at the earliest opportunity to discuss the complaint at an appropriate field location near the flying-fox camp, for example, the person's home, yard or public place.

The inspecting officer should give a flying-fox information package to the complainant during the inspection. The package could include flying-fox information brochures, a copy of the Scientific Committee's Determination on the listing of the grey-headed flying-fox as 'vulnerable', threatened species profiles and other appropriate information. Section 4.2 contains more examples of suitable information resources.

The inspecting officer could discuss:

- the history of attempted camp disturbances and relocations
- policy issues relating to gaining approval for such attempts
- the very low probability of success in relocating flying-fox camps
- possible unintended impacts of relocation attempts such as flying-foxes dispersing through towns, or joining and compounding problems at nearby urban camps
- the importance and value of threatened species and their habitats.

The inspecting officer should also positively deal with the concerns of the complainant by, for example, providing factual advice on:

- disease risk and how to avoid infection from flying-foxes
- netting guidelines to protect commercial and backyard fruit trees (see DEC 2003a and 2003b)
- the cause of the smell associated with flying-fox camps.

Advice on public health issues can be obtained from the NSW Department of Health.

If the issue and the volume of complaints escalate, the landowner or land manager affected by the flying-fox camp could be contacted to discuss developing a formal community information package and issues management strategy.

In developing an information package and strategy, all major stakeholders should be engaged, particularly all affected landowners or land managers, affected local residents, local government, the local Aboriginal community, DECC, licensed wildlife carers, local conservation groups and the local media. Section 4.2 provides more information on community education material.

It is worth considering the management of human–wildlife interaction issues nationally and internationally so flying-fox camp management is not considered in isolation. Wherever possible, good examples of managing human–wildlife interactions should be cited and the lessons from these successes adapted, such as focusing on successful flying-fox issues that have been resolved. Chapter 7 contains further reading on successful human–wildlife interactions.

DECC will encourage management of camps near residential areas which minimise the impacts of flying-foxes on residents while maintaining viable habitat.

Example of a record on the flying-fox camp complaints database

Date	Name	Address	Phone no.	Concerns	Camp	Action	Officer	Date	Comments
12.9.07	P. Ublic	12 Flying-fox Lane, Blossomville	02 9XXXXXXX	Smell/noise	Blossomville	Meet on site	A. Ranger	14.9.07	e.g. Met on site, discussed camp history, species conservation status, provided information and contact details. Complainant requested more information on weeds, rainforest regeneration and Bushcare. Further information provided 15.9.07

4.2 Developing an education and communication strategy

This section is relevant for organisations who wish to engage the community in understanding issues relating to flying-foxes, including local councils and catchment management authorities, DECC staff and community educators such as environmental groups and wildlife carers.

Step 1. Identify the audience and ways of most appropriately reaching them

Firstly, identify the target audiences for the education and communication strategy. Are the audiences school students, local residents who have complained about flying-fox camps or proponents wishing to locate development near flying-fox camps? Whoever they are, the best way of reaching an audience is through the local media.

To announce dates and times of workshops, community forums or information days for local schools, write a short community announcement and send it to the local radio station.

DECC will provide media releases highlighting positive management outcomes so other communities can benefit from them.

Community audiences and school students can be targeted by:

- running community workshops or school information days in local community centres or town halls, or at the flying-fox camps themselves
- providing fact sheets at information centres, schools and at community workshops, or information on websites. DECC's website material can be adapted for local use – for example, visit:
 - www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10697 for information on grey-headed flying-foxes
 - www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10697 for information on flying-fox camps in north-east NSW – see the link to the 'Flying-fox camps' pdf file in the side navigation
 - www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10696 for information on black flying-foxes
 - www.nationalparks.nsw.gov.au/npws.nsf/content/policies+and+guidelines+by+title for information on protecting commercial or garden fruit trees from flying-foxes without harming the animals.

Local councils wishing to reach community members, development proponents and local residents can:

- conduct community education campaigns, by presenting practical information and actions that will increase residents' understanding about living near flying-fox camps
- advise potential residents of the existence of a camp before they buy property in the area
- identify flying-fox camps in their local environmental plan (see section 5.1)
- inform proponents of development about the location of camps (see sections 5.2 and 5.3)
- when issuing a planning certificate under s. 149 of the EP&A Act for land in the vicinity of a flying-fox camp, advise on the legal ground rules for development of the land and refer to the existence of the camp.

More information for councils and catchment management authorities about dealing with development proponents is given in sections 5.2 and 5.3.

A step-by-step process for dealing with community concerns relating to the disturbance and relocation of flying-fox camps is provided in section 6.1. This process could also be used to address other community concerns about flying-foxes and their camps.

Step 2. Think about collaboration and partnership

DECC can help councils to address all complaints and other issues regarding flying-foxes by providing information and advice. Wildlife care organisations are often happy to have contact details publicised in material, and will be able to advise the community on appropriate behaviour to use when encountering flying-foxes. On occasions, councils and government agencies have formed partnerships to purchase flying-fox camp sites or land near these sites. For example:

- Ipswich City Council and the Queensland Government funded the purchase of a private property adjacent to a flying-fox camp at Ipswich and established the Woodend Nature Centre on the site. The council, as trustee, manages the centre, which is used for conferences, natural heritage interpretation and associated activities, and as a research site.
- The NSW government and Ku-ring-gai Municipal Council purchased private land that formed part of a flying-fox camp at Gordon. This land, combined with council-owned land, now forms the Ku-ring-gai Flying-fox Reserve. A voluntary conservation agreement between the NSW Minister for Climate Change, Environment and Water and the council ensures the reserve is protected.
- The NSW and Commonwealth governments contributed to the purchase of a wetland on private land near Maclean in northern NSW, known as Farlows Swamp. The wetland, gazetted under the NPW Act as Yeagl Nature Reserve, hosts a grey-headed flying-fox camp.

Establishing effective partnerships with catchment management authorities may also provide opportunities to educate the community on the importance of flying-foxes and their ecological role, and lead to increased community support for their conservation.

Step 3: Getting the messages out

Think about ways of informing the community about flying-foxes and their camps. For example:

- **increase local residents' understanding of flying-fox behaviour** by explaining the issues associated with flying-fox camp management, the reasons flying-foxes congregate and why their numbers increase seasonally, and the reasons for flying-fox behaviours and characteristics such as noise and smell that may cause problems for people living nearby. Messages could include:
 - flying-foxes congregate to mate, give birth and exploit the availability of local food
 - noise associated with camps during the mating period is often due to males protecting their female 'harem' from other males or to flying-foxes protecting their perch from other flying-foxes
 - flying-foxes are wild animals that rely on strategies and behaviours for survival in the natural environment, for example, they move seasonally to follow the flowering of food such as eucalypt blossoms
 - it is only at certain times of the year, or in certain years, that numbers swell to the extent that they disturb the neighbouring community and when this occurs it is directly linked to the availability of food in the local area while there is a shortage of food elsewhere
 - although a large increase in flying-fox numbers over a short period may give the appearance of flying-foxes breeding rapidly in response to food abundance, they have a low reproductive rate; females produce only one baby annually
 - if you need help to manage wildlife encounters, here is who to contact (explain the roles and responsibilities of relevant organisations in the area)
- **show the community that the land manager and DECC are taking their issues on board** by publicising any management actions or strategies that are in place to minimise impacts of the flying-fox camp on residents
- **explain to residents and farmers that strategies are available to manage problems associated with living near flying-fox camps**, for example, by:
 - promoting DECC netting guidelines for fruit trees and commercial crops (DEC 2003a and 2003b, 2005)
 - advising residents to plant native vegetation that does not attract flying-foxes between camps and their homes

- **encourage appreciation of flying-foxes throughout the year** by highlighting non-threatening/beneficial behaviours, for example, their critical role in pollinating hardwood forests and dispersing seed, ways in which they care for their young, their impressive long distance migration
- **explain that there are good reasons for punishing those who harm flying-foxes and their habitat** by emphasising that the grey-headed flying-fox and black flying-fox are listed as threatened in NSW and that the grey-headed flying-fox is also listed as threatened nationally, and giving the reasons for their threatened status
- **explain that it is impractical to disturb flying-foxes and make them move as:**
 - relocation attempts may harm the animals, with pregnant females and dependent young being particularly vulnerable, or damage their habitat
 - relocation attempts are often unsuccessful, with disturbed flying-foxes scattering throughout a town, roosting next to more intensively developed sites, or boosting numbers at another urban camp rather than moving to the new site
 - permanent relocation is likely to depend on a continuing program of disturbance.

More information about dealing with the community regarding disturbance and relocation is given in Chapter 6.

5 Planning for flying-fox camps

This chapter explains what planning options are available to local councils, catchment management authorities and other consent authorities when they are considering the location of development near a flying-fox camp.

5.1 Legislative tools for use by councils

Councils can use the following legislative tools to help ensure development is appropriately located in relation to flying-fox camps.

Local environmental plans

Councils could amend their local environmental plans (LEPs) by, for example, zoning camps for 'environmental protection' to ensure the long-term security of flying-fox camps used continuously or annually. Camps used irregularly also need protecting. Such camps should also be identified in LEPs or through other planning mechanisms since they may not be occupied when decisions about land use are being made or when environmental studies are being conducted. Identifying flying-fox camps as development constraints would help prevent future conflicts arising over proposed development, and would alert the public, proponents of development, their consultants and council staff to the presence of camps or potential camp sites.

The appropriate zoning of land adjacent to flying-fox camps should also be considered, particularly when this land is undeveloped or redevelopment is planned. Flying-fox camps expand or move locally, so the suitability of zoning adjacent land for flying-fox habitat should be considered. Certain land uses are inherently more compatible in the vicinity of a flying-fox camp than others, for example, light industrial or rural compared to high density urban residential. Flying-fox camps expand or undertake localised movement, therefore the suitability of adjacent land for this purpose should also be considered.

Development control plans

Development control plans (DCPs) under s. 72 of the EP&A Act are another mechanism through which councils can plan for the management of flying-fox camps.

A DCP could:

- define a council's responsibilities for managing and conserving flying-fox camps
- ensure that flying-fox camps are considered when planning, designing and constructing developments in the area
- identify a landscape approach to flying-fox camp management in the area subject to the DCP
- identify appropriate vegetation rehabilitation activities in the camp, for example, removing non-native canopy roost trees at the same time as planting native trees suitable for roosting
- establish accountabilities for the various actions proposed in the DCP
- identify the level of information that must be submitted by proponents of development, and ensure that the camp is considered when preparing and assessing development applications
- identify prohibited and exempt activities in or adjacent to flying-fox camps
- provide guidelines for council officers assessing development applications, particularly in terms of avoiding conflict between adjoining land uses.

Plans of management

Where flying-fox camps occur on community land, as defined in the *Local Government Act 1993* (LG Act), the council's plan of management should be consistent with objectives for the

management of community land categorised as a natural area under s. 36E of the LG Act, as follows:

The core objectives for management of community land categorised as a natural area are:

- to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and
- to maintain the land, or that feature or habitat, in its natural state and setting, and
- to provide for the restoration and regeneration of the land, and
- to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and
- to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

Specifically, a plan of management should:

- identify the presence of the camp
- have as an objective: 'maintaining the quality and integrity of the camp'
- include specific measures to achieve the above objective
- include a review process to assess whether objectives are being met, and to permit actions to be modified if objectives are not being met
- ensure that uses of the land on which the camp is located and adjoining land uses are compatible with the presence of the camp.

5.2 Determining development applications

Council officers need to be aware of the location of flying-fox camps when:

- advising proponents of development
- advising the public about proposed development
- assessing development applications
- making recommendations to the council.

Maintaining the integrity and quality of flying-fox camps should be a primary aim when considering the suitability of development near a camp.

The following issues should be considered by consent and determining authorities when assessing matters under Parts 4 and 5 of the EP&A Act. These site planning issues should help authorities to evaluate developments and activities near flying-fox camps, but are not intended to replace a Section 5A assessment under the EP&A Act to determine the likely impact of a development or activity on threatened species (grey-headed and black flying-foxes) and their habitats.

Spatial data on the location of flying-fox camps in NSW has previously been distributed by DECC. Phone DECC's Environment Line on 1300 361 967 for information on up-to-date data.

Issues to consider are as follows:

- **Consider establishing or maintaining a spatial separation between the native vegetation of the flying-fox camp and adjacent development.** Site-specific features such as topography and prevailing winds may affect the level of noise and smell experienced by nearby residents, so creating a spatial separation (buffer) may prevent noise and odour from affecting people living nearby.

- **Encourage the planting of native plants flying-foxes can roost in in less intensively settled areas near a camp.** Flying-foxes may use such areas over time, reducing the overall density of the camp, alleviating impacts on neighbours and reducing conflict in more intensively settled areas.
- **Where development already exists, consider the type of infill or redevelopment to be permitted around a camp and whether any intensification of existing development should be permitted.** The aim is to encourage development that will coexist with the camp and discourage development that will cause or increase conflict or degrade the camp vegetation or camp function. Examples of appropriate development near camps could be light industry or rural uses. Inappropriate development near camps includes schools, hospitals, playgrounds, playing fields, aged care facilities and urban residential areas.
- **Expansion of camps.** The size of camps fluctuates in response to seasonal food supplies. This may result in the number of flying-foxes in a camp increasing quickly as more flying-foxes arrive, and the camp expanding into nearby vegetated areas. Although a large increase in flying-fox numbers over a short period of time may give the impression of flying-foxes breeding rapidly in response to food abundance, they have a low reproductive rate with females producing only one young annually.
- **Use appropriate native vegetation, vegetation rehabilitation or planting to attract flying-foxes away from residential areas.** Planting and landscaping can also be used to mitigate issues such as noise and smell associated with camps. Such actions will help mitigate problems associated with increasing numbers of flying-foxes at certain times of the year.
- **Consider selection of plants for landscaping in parks and on streets.** Flying-foxes eat the blossom and nectar of eucalypts, melaleucas and banksias and the fruit and nectar of rainforest trees and vines. Trees with good canopy cover and adequate shelter from the elements can be used as roosts, as can the exposed branches of canopy trees. Informed species selection, vegetation rehabilitation or planting can be used to attract flying-foxes to more suitable areas (from the perspective of human habitation) and to discourage them from using less suitable areas. If the object is to discourage flying-fox usage or to create a buffer zone, plants other than food and roost species should be used. An extensive list of plants eaten by flying-foxes can be found in Hall and Richards 2000.
- **Manage impacts of droppings** by covering cars, laundry areas and children's play areas or constructing these areas so they can be easily cleaned, for example, by paving them.
- **Consider the routes of flying-fox flyways when planning the location of development.** The routes used by flying-foxes to enter and exit camps are often well established, but may alter from time to time, and may mean that when flying-foxes return to the camp in the morning, they could disturb sleeping neighbours.
- **Consider the location of powerlines.** Flying into powerlines and touching more than one wire at the same time can electrocute flying-foxes. The underground location of powerlines adjacent to camps should be considered, or powerlines should be constructed so the wires are not arranged in the one plane or are greater than 1.6 metres apart, that is, greater than the wingspan of a flying-fox.
- **Alleviate community concerns about disease.** Some flying-foxes carry *Australian bat lyssavirus* (ABL). Direct contact with an ABL-infected flying-fox from a saliva-contaminated bite, scratch or mucous membrane can be a serious health risk. Infection in sick and injured flying-foxes is much greater than in the general flying-fox population. Not handling flying-foxes will significantly reduce health risks to people. Should a person be scratched or bitten, the area should be washed thoroughly for approximately 5 minutes with soap and water.

A highly effective vaccination is available for anyone bitten or scratched by a flying-fox. However, DECC recommends that only vaccinated and appropriately trained people handle flying-foxes. Eating fruit that has been bitten by flying-foxes is not regarded as a mode of transmission, but for aesthetic and general hygiene reasons, eating such fruit is not recommended. Further information is available from the Department of Health.

Coffs Harbour, Fairfield, Ku-ring-gai and Ipswich (Queensland) City Councils have all adopted planning/management approaches to address issues associated with specific flying-fox camps in urban areas. Councils may wish to contact these councils for further information about how they have dealt with these issues.

5.3 Vegetation clearing for infrastructure development

Vegetation clearing for infrastructure development – whether regulated under the EP&A Act or other legislation – and development and activities regulated by councils have the greatest potential to affect flying-fox camps because of the extent of NSW covered by infrastructure, that is, the framework provided for the delivery of transport, electricity, telecommunications, oil, water and gas. Examples of infrastructure include roads, railways, transmission lines, cable networks and pipelines.

Councils often have a regulatory role in relation to infrastructure development, although infrastructure providers can sometimes act as their own determining authorities under Part 5 of the EP&A Act. Infrastructure providers can also operate under other state legislation or under Commonwealth legislation.

Currently, the Minister for Climate Change, Environment and Water is the consent authority for native vegetation clearing applications and property vegetation plans under ss 14 and 27 respectively of the *Native Vegetation Act 2003* (NV Act). However, the Minister may delegate this function to a body or person authorised under the NV Act, for example, to a catchment management authority under s. 48[3] of the NV Act. It is worth noting that any impacts to known flying-fox camps are not likely to be accepted through the property vegetation planning process.

The criteria flying-foxes use for camp selection are unclear, although there are many flying-fox camps in vegetation on, or adjacent to, riparian or estuarine areas including melaleuca swamps, rainforest, mangroves and river oak communities. Therefore, riparian and estuarine vegetation and associated vegetation communities must be protected and regenerated so flying-fox camps are maintained throughout their range, facilitating access to food sources.

Catchment management authorities and infrastructure providers should consult DECC's flying-fox camp database early in the planning process, to ensure the location of camps is considered and impacts are avoided. Contact DECC on 1300 361 967 for access to this database, which DECC will provide to all catchment management authorities and infrastructure providers.

DECC recommends that catchment management authorities and infrastructure providers consider the following when undertaking strategic planning and consent:

- protecting vegetation in which flying-fox camps occur
- protecting vegetation near flying-fox camps to permit expansion and localised movement of camps
- regenerating vegetation around flying-fox camps that has formerly been removed, or allowing it to regenerate naturally
- considering the location of flyways around flying-fox camps when planning for infrastructure such as above-ground electrical transmission lines, to reduce, and, where possible, stop flying-foxes being electrocuted or colliding with powerlines
- notifying DECC of the location of new camps.

Catchment management authorities can also help to achieve the above goals by considering the location of flying-fox camps when:

- formulating catchment action plans
- managing incentive programs to implement catchment action plans
- providing data for property vegetation plans and to implement catchment action plans
- providing training in natural resource management, particularly vegetation management.

6 Disturbing and relocating flying-fox camps

Cost-effective, reliable techniques for relocating flying-fox camps have not yet been developed. The result of relocation attempts such as the use of loud music or other loud noises, shooting or hosing with water has generally been that the animals have not deserted their old camp, or, if forced to desert the camp, have not relocated to the selected new location. Instead, they have relocated to less desirable locations, for example, they have scattered throughout a town or joined nearby camps in other towns, compounding problems at those sites. The stress caused to the animals has sometimes resulted in fatalities, with pregnant females and dependent young being particularly vulnerable. Consequently, DECC does not generally support disturbing camps or attempting their relocation. However, DECC recognises that there may be exceptional circumstances when such action may be warranted.

This chapter is for those wishing to relocate flying-fox camps. Preparation and implementation of a strategic plan to manage a camp *in-situ* (in its original position) should precede any proposal to relocate the camp and should be submitted to the relevant DECC Regional Operations Branch. Explanation as to why *in-situ* management is not viable must be provided before any relocation proposal or licence application will be assessed.

The procedure is to firstly develop a camp relocation proposal and apply for a licence from DECC (see section 6.1). Should a licence be granted, a follow-up report must be sent to DECC within three months, detailing the outcomes of the relocation attempt (see section 6.2). This process represents best practice and will ensure that all alternatives are properly considered.

6.1 Developing a flying-fox camp relocation proposal

The process proposed in this section allows DECC to:

- assess the project's impacts
- ensure the best possible outcome for flying-foxes and the community is planned for
- increase its knowledge of the planning, conduct and evaluation of relocation exercises so it can continue to improve outcomes for wildlife and the community.

Step 1 Establish a steering committee

Firstly, a steering committee must be established to oversee the proposed camp relocation project and manage actions under the steps detailed below. The committee needs to include representatives from all stakeholder groups, including, but not limited to:

- local government
- state agencies, including DECC
- Royal Society for the Prevention of Cruelty to Animals
- representatives of a range of community views
- owners/managers of existing and proposed camp sites
- a scientific/technical adviser.

An independent member or a trained facilitator needs to chair the committee to ensure that all views are aired and considered.

Step 2 Assess characteristics of the existing camp

The following characteristics of the existing camp must be assessed and documented:

- the camp's 'footprint'. That is, the area of the roost trees including an appropriate buffer zone, the structural elements of the vegetation, nearby waterbody features and the physical location of the camp

- the role the camp plays in the lifecycle of the flying-fox species – the camp may be regularly used as a maternity site, or may be occupied only when native species are flowering or fruiting locally
- the frequency of occupation (that is, continuously, annually or irregularly) and length of occupation of the camp and the history of the camp's use
- the native food resources available to the animals within 50 km of the camp
- the species of flying-fox currently using the camp
- the history of usage of the camp by the species currently using it and any other species of flying-fox that uses or has used the camp in the past
- the conservation status of all native plants and animals that occupy the camp or have used the camp in the past.

Step 3 Assess community attitudes

Community attitudes toward flying-foxes in general, the existing camp and proposed new camp(s) must be ascertained and documented. A process of community consultation must be established to enable an assessment of the range of community views to be made. The community should be informed of any impacts from proposed disturbance techniques and resourcing requirements.

The Aboriginal community must be consulted regarding their views. The following documents may be useful resources for such consultation:

- DEC 2004, *Working with local Aboriginal communities on environmental projects* (visit www.environment.nsw.gov.au/resources.wmlacs.pdf)
- English A and Baker L 2003, *Threatened species recovery planning and Aboriginal community involvement – discussion paper* (visit www.nationalparks.nsw.gov.au/PDFs/aboriginal_involvement_threatened_species.pdf)
- NSW Department of Aboriginal Affairs 2003, *Two Ways Together, Partnerships: a new way of doing business with Aboriginal people – NSW Aboriginal Affairs Plan 2003–2012* (visit www.daa.nsw.gov.au/data/files/FinalPOLICY.pdf)
- Australian Heritage Commission 2002, *Ask first – a guide to respecting indigenous heritage places and values* (visit www.ahc.gov.au/publications/indigenousheritage/index.html)

Step 4 Justify exceptional circumstances

Justify the need to relocate the flying-fox camp in terms of exceptional circumstances. Outline any prior camp management that has been undertaken and explain why on-site management is not viable.

Step 5 Identify options for alternative campsites

Identify alternative new site(s) for the camp. These should:

- contain native vegetation suitable for roosting, for example, native riparian vegetation
- have at least as large an area as the existing camp, and as dense a canopy
- have foraging resources that are at least equivalent to those accessible within 50 km of the current site, both in terms of quantity and quality
- be large enough to support at least an equivalent number of animals as the existing camp.

To develop an accurate overview of resources, use:

- spatial data such as vegetation mapping
- published information on foraging vegetation
- information on current flowering and fruiting patterns.

Site visits may be required if spatial data is unavailable or incomplete.

The long-term security and community acceptance of alternative sites is vital. The landowner and/or land manager must be amenable to the presence of a flying-fox camp. The impact of current and proposed land uses adjacent to the alternative camp sites must also be considered.

DECC will encourage site protection through appropriate zoning and conservation covenants if a flying-fox camp establishes at the site, and will encourage the preparation of a plan of management for the camp which should include methods to maintain and improve the quality of habitat, for example, weed, pest and fire management.

Step 6 Identify relocation methods

The methods to be used to attempt to relocate the camp must be clearly described. An appropriately experienced person should identify appropriate methods for the specific circumstances, based on reviews of similar exercises and relevant research. Relocation methods should not only focus on disturbance of the camp, but should also address proposals for attracting animals to the alternative camp site(s). The following matters must be clearly documented:

- the relocation methods to be used and justification of these methods, including the disturbance methods to be used to encourage the animals to abandon the camp and any methods to be used to attract flying-foxes to the alternative site(s)
- the frequency of camp disturbance and over what period of time it will occur
- at what time of day disturbance will occur
- materials, costs and numbers of people required to disturb the existing camp and attract flying-foxes to the alternative site(s)
- evidence to support that the proposed method is likely to be successful in moving the flying-foxes from the existing camp to the alternative site(s) with minimal stress and harm
- strategies for monitoring the success of the relocation attempt, including radio-tracking/satellite-tracking movements of flying-foxes, and post-relocation monitoring
- criteria to assess if the relocation attempt succeeds or fails
- strategies to manage the flying-foxes if the relocation attempt is unsuccessful.

Step 7 Assess and plan for animal welfare

The welfare of flying-foxes must be a primary consideration when designing and implementing the proposal. The main piece of legislation governing general animal welfare in NSW is the *Prevention of Cruelty to Animals Act 1979*. If there is evidence that a flying-fox camp relocation amounts to unreasonable, unnecessary or unjustified abuse, torment, torture, or infliction of terror, or if the animals become infuriated on relocation, or if some other form of cruelty is involved, this may be an offence under the Act. An appropriately experienced and qualified person must manage the attempted camp relocation, and a licensed wildlife carer must be on-call to assist any injured animals.

The impact of the proposed relocation methods on the flying-foxes, that is, both disturbance and attraction methods must be documented as part of the proposal. The impact of disturbance will vary depending on the time of year and seasonal factors.

Note that DECC does not support disturbance of camps under certain circumstances – see chapter 3, points 3 and 4.

Step 8 Plan for contingencies

Planning for contingencies is vital. The proposal should include considering, and planning for, the following scenarios, but should not be limited to these outcomes:

- flying-foxes do not leave the camp, regardless of disturbance
- flying-foxes only abandon the camp temporarily
- flying-foxes occupy sites other than those selected, and occupation of these new sites creates conflict

- disturbance adversely impacts on the welfare of the flying-foxes occupying the camp.

Planning for adverse impacts on flying-foxes includes allocating adequate resources to fund the rehabilitation of any flying-foxes which wildlife care groups need to look after. Should the relocation attempt adversely impact on the welfare of flying-foxes, it may have to be discontinued. A suitably qualified or experienced person must make this assessment. Animal welfare criteria must be used in making such an assessment.

Step 9 Design and establish monitoring and feedback mechanisms

Monitoring is essential to determine the success of the disturbance and any adverse impacts on animal welfare. Monitoring should be sensitive to adverse and unexpected impacts on flying-foxes, and should cause the disturbance to stop if the impacts on animal welfare are unacceptable. Feedback gained from the monitoring needs to influence the design and implementation of any future disturbance actions.

Monitoring should include, but not be limited to, documentation of:

- details of disturbance and attraction techniques used, for example, their frequency, the time of day they occur, what they are and the resources required to implement them
- the number of flying-foxes at the camp when disturbance activities commence
- the initial and ongoing response of the flying-foxes to the disturbance, both in terms of their behaviour and the number or proportion of animals remaining at the camp, including details of whether animals appear stressed, suffer injuries, abort young or die
- the number or proportion of flying-foxes at the original camp that relocate to the alternative camp(s) as a result of the disturbance or attraction techniques
- locations other than the alternative site(s) selected by the steering committee where flying-foxes relocate in response to the disturbance, the number of animals or the proportion of the camp in these locations, and how long they remain
- if flying-foxes are disturbed at the site(s) they relocate to, details of this disturbance, as detailed above – note that a separate licence may be required for such actions if this is not dealt with in the original licence application
- if relocation efforts result in flying-foxes occupying the chosen alternative site(s), the function of the new camp compared with the function of the original camp –for example, does the camp retain the same lifecycle functions such as access to food sources, is it a maternity site?

The monitoring and reporting requirements attached to any s. 91 licence/ s. 95 certificate (TSC Act) can be considerable, and adequate resources should be planned and budgeted for in any relocation proposal.

Step 10 Apply to DECC for a s. 91 or s. 120 licence for a flying-fox camp relocation proposal

This section explains the process for applying for a licence under s. 91 of the TSC Act, although the process is similar for applicants applying for licences under s. 120 of the NPW Act. Contact the local DECC's Regional Operations Branch, or the Environment Line on 1300 361 967 for further information on either licence.

Should the planned disturbance involve grey-headed or black flying-foxes (which are threatened species in NSW) or their habitat, a licence under s. 91 of the TSC Act should be sought from the relevant DECC Regional Operations Branch. In the case of the protected little red flying-fox, a licence under s. 120 of the NPW Act should be sought from the relevant DECC Regional Operations Branch.

Little red flying-foxes often occupy the camps of grey-headed flying-foxes on the NSW north coast and its hinterland. Although grey-headed or black flying-foxes may not be occupying the camp when disturbance activities are planned for a little red flying-fox camp, a s. 91 licence

should be sought in this situation, as the camp vegetation comprises threatened species habitat. A s. 91 licence should also be sought for disturbance involving camps containing mixed species of flying-foxes.

Holding such licences and complying with their terms may provide the licensee with a defence against prosecution should an animal be injured or killed as a result of relocation, or should threatened species habitat be damaged – see section 2.1 for more information.

To apply for a s. 91 licence, the applicant must provide information to assist DECC in assessing whether the proposal is likely to have a significant effect on threatened species, populations, ecological communities, or their habitats. As a result, the licence application must include an assessment of significance under s. 94 of the TSC Act. This assessment must also provide information on the criteria listed under s. 92 of the TSC Act. These criteria are:

- details of the types and condition of habitats in and adjacent to the land to be affected by the disturbance
- particulars of any known records of a threatened species in the same or similar known habitats in the locality
- details of any known or potential habitat for a threatened species on the land to be affected by the disturbance
- details of the amount of such habitat to be affected in relation to the known distribution of the species and its habitat in the locality and region
- an assessment of the likely nature and intensity of the effect of the action on the lifecycle and habitat of the species
- details of measures to avoid or ameliorate the effect of the action.

The licence application must also include a report dealing with the issues identified in steps 1–9, and an application processing fee.

On receipt of the application, DECC will assess whether the proposed action is likely to have a significant effect on threatened species, populations or ecological communities or their habitats. If the proposed action is not likely to have a significant effect, DECC will issue a s. 95 certificate rather than a s. 91 licence. However, if DECC considers that a significant effect is likely, the applicant may have to prepare a species impact statement (SIS). An SIS is a more detailed assessment of the impact of a proposal on threatened species, populations, ecological communities, and their habitats. After assessing the SIS, DECC may grant a licence unconditionally, grant a licence with conditions attached or refuse to grant a licence.

An applicant may choose to submit an SIS with the licence application. If they do this, they do not need to prepare an assessment of significance dealing with the criteria listed under s. 92 of the TSC Act but must still submit the report dealing with the issues identified in steps 1–9, and the application processing fee.

The flow chart at the end of this section details the process of applying for a s. 91 licence.

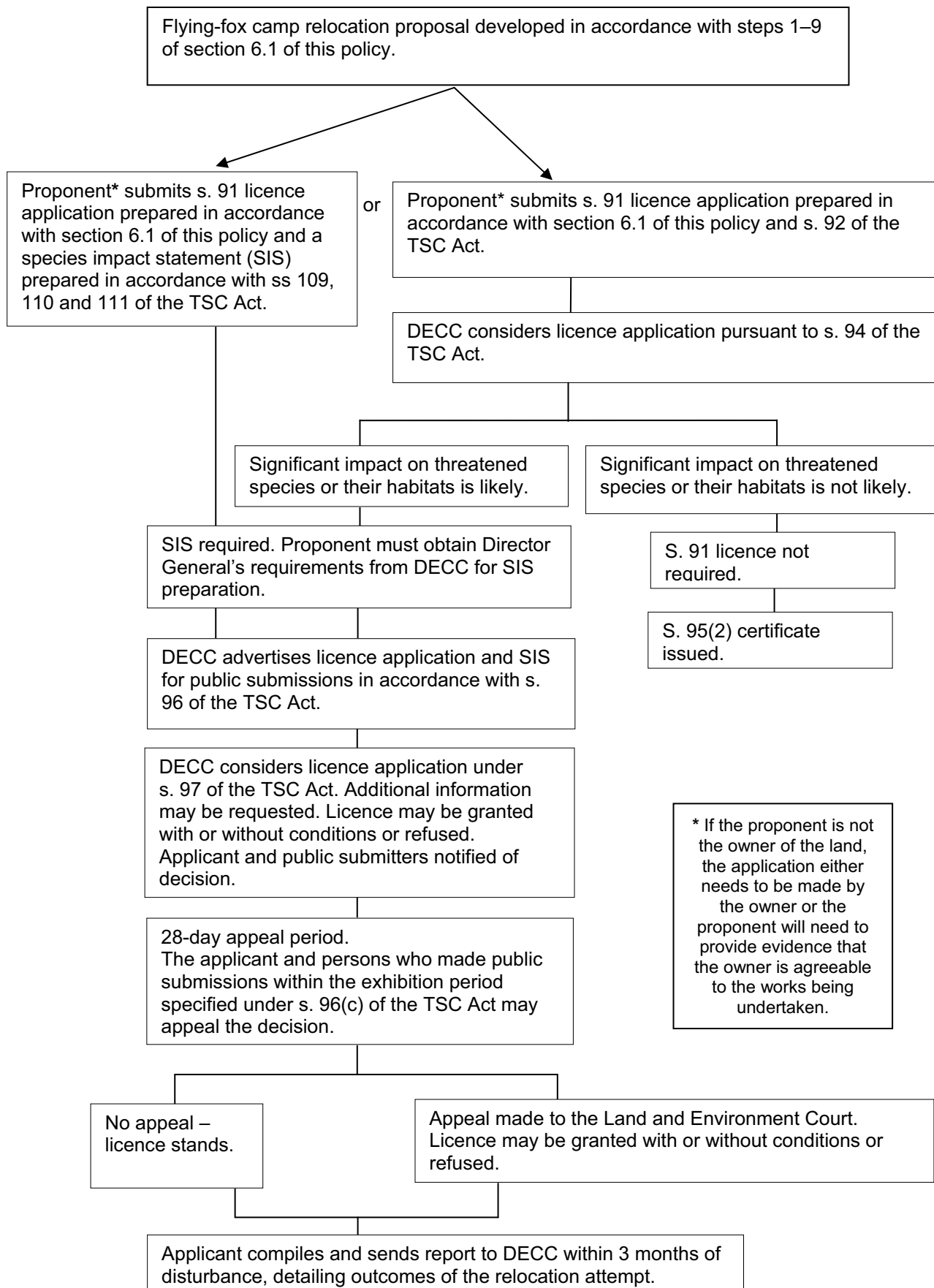
Step 11 Refer the proposal to the Australian Government Department of the Environment and Water Resources

The Australian Government Department of the Environment and Water Resources should be contacted to determine whether a grey-headed flying-fox camp relocation proposal requires approval under the EPBC Act. Further information is provided in Department of the Environment and Heritage (2003). Proponents of activities that may have a significant impact on the grey-headed flying-fox (listed as a threatened species under the EPBC Act) are advised to submit their referrals to the Commonwealth email address: EPBC.referrals@environment.gov.au.

Step 12 Evaluate and report to DECC

A report addressing the matters detailed in section 6.2 and the outcomes of monitoring referred to in Step 9, must be submitted to DECC within three months of any disturbance activity authorised under s. 91 or s. 95 of the TSC Act. This report will form a condition of any licence granted. See section 6.2 for details of what should be included in the report.

Process for applying for a s. 91 licence under the TSC Act



6.2 Evaluating flying-fox camp relocations

A condition of both a s.91 licence and a s. 95 certificate issued under the TSC Act and a s. 120 licence issued under the NPW Act to disturb a flying-fox camp for the purpose of relocation is that the applicant must compile a report within three months of beginning disturbance activities, assessing the success or failure of the relocation attempt. The report should include affirmation of the following, or, if any of the following could not be affirmed, reasons why the objective was not met:

- disturbance to the original camp was short-term only, occurring over no more than seven days (timeframe may be modified on a case-by-case basis)
- negligible animal welfare issues resulted from the relocation attempt
- flying-foxes occupied the alternative camp site(s) that were selected for the relocation attempt
- fewer than 25% of flying-foxes at the original camp before the relocation attempt remain at the original camp
- the new site(s) fulfil the same or a similar function to the original camp and support most of the animals from the original camp, directly or soon after the relocation attempt
- following the relocation attempt, patterns of usage of the original and new camps do not cause community concern
- following the relocation attempt, land uses around the original camp are resumed
- flying-foxes have not dispersed to undesirable locations, for example, to other nearby camps or backyards, and have not caused further community concern following disturbance activities
- long-term security of the new camp site(s) can be secured
- a management plan was developed for the proposed camp locations before disturbance and has been implemented, including monitoring and adaptive management components
- the community's understanding of flying-fox ecology and biology has been increased
- the community is satisfied with the outcomes of the relocation attempt.

The report should also contain the outcomes of monitoring referred to in Step 9 of section 6.1.

Further progress reports may be required if disturbance occurs over a longer period of time.

Following a review of the progress report or reports, DECC will request additional information if required. DECC will consider the reports further should another s. 91 or s. 120 licence application to relocate a flying-fox camp be sought from DECC:

- by the same applicant
- for the same camp
- for the new (selected) camp site(s) or
- for any other sites occupied by flying-foxes as a result of the relocation attempt.

7 Further reading and relevant policies

7.1 Further reading

- Augee ML & Ford D 1999, 'Radio-tracking studies of grey-headed flying-foxes, *Pteropus poliocephalus*, from the Gordon colony', *Proceedings of the Linnean Society of NSW* 121: 61–70, Sydney.
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- DEC 2003a, *Netting of garden fruit trees - guidelines to protect wildlife*, visit www.nationalparks.nsw.gov.au/npws.nsf/Content/Netting+of+garden+fruit+trees+-+guidelines+to+protect+wildlife, Department of Environment and Climate Change, accessed 21 June 2007
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- Eby P & Lunney D (eds) 2002, *Managing the grey-headed flying-fox as a threatened species in NSW*, Royal Zoological Society of NSW, Sydney.
- English A and Baker L 2003, *Threatened species recovery planning and Aboriginal community involvement – discussion paper*, visit www.nationalparks.nsw.gov.au/PDFs/aboriginal_involvement_threatened_species.pdf, Department of Environment and Climate Change
- Fischer J & Lindenmayer DB 2000, 'An assessment of the published results of animal relocations', *Biological Conservation* 96: 1–11.
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- Hall L & Richards G 2000, *Flying-foxes - fruit and blossom bats of Australia*, UNSW Press, Sydney.
- Hall LS 2002, 'Management of flying-fox camps: what have we learnt in the last twenty-five years' in *Managing the grey-headed flying-fox as a threatened species in NSW*, . pp. 215–224, eds P. Eby and D. Lunney, Royal Zoological Society of NSW, Sydney.
- Lunney D & Moon C 1997, Flying-foxes and their camps in the remnant rainforests of north-east New South Wales in *Australia's ever-changing forests III: proceedings of the third national conference on Australian forest history*, pp. 247–277, ed. J. Dargavel, Centre for Resource and Environmental Studies, Australian National University, Canberra.
- Moulton M & Sanderson J 1997, *Wildlife issues in a changing world*, 2nd edn, CRC Press, USA.
- NPWS 2002, *Rehabilitation of protected fauna policy*, www.nationalparks.nsw.gov.au/PDFs/policy_rehab_protected_fauna.pdf.
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7.2 Related DECC policies

Management of native birds that show aggression to people (visit www.nationalparks.nsw.gov.au/npws.nsf/content/aggressive_birds_policy)

Policy and procedural guidelines for the mitigation of commercial crop damage by flying-foxes (visit www.nationalparks.nsw.gov.au/npws.nsf/Content/The+NPWS+commercial+crop+damage+mitigation+policy)

Policy for the translocation of threatened fauna in NSW (visit www.nationalparks.nsw.gov.au/npws.nsf/content/fauna_translocation_policy)

Code of ethical conduct (visit www.environment.nsw.gov.au/about/ethicscode.htm)

Rehabilitation of protected fauna policy (visit www.nationalparks.nsw.gov.au/npws.nsf/content/policy+on+the+rehabilitation+of+protected+animals)

Visitor safety policy (visit www.nationalparks.nsw.gov.au/npws.nsf/content/visitor+safety+policy)