



Australian Government
Department of the Environment

Proposed Approval

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East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted East Gippsland Shire Council

proponent's ABN 81 957 967 765

proposed action To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (*Pteropus poliocephalus*) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved.

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2022.

Decision-maker

name and position James Tregurtha
Assistant Secretary
South-Eastern Australia Assessment Branch

signature NOT FOR SIGNATURE – DRAFT ONLY

date of decision

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Conditions attached to the approval

The following measures must be taken to ensure the protection of **listed threatened species and communities** (sections 18 & 18A), specifically the **Grey-headed Flying-fox (GHFF)**:

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1. The person taking the action must implement and comply with?? the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**.
2. Prior to the **removal of habitat** the person taking the action must ensure that:
 - (i) A Hotline with a A-dedicated contact phone number and email address is set up to respond to public enquiries;
 - (ii) At least \$10,000 is spent on revegetation of **Grey-headed Flying-fox habitat** in accordance with expert advice on GHFF ecology, subject to negotiation with, and approval by, the Minister;
 - (iii) At least \$5,000 is spent on community education resources, including, but not limited to, educational signage.
3. The person taking the action must not remove or adversely impact more than 0.5 hectares of **Grey-headed Flying-fox habitat** at the **Mitchell River Roost Site**.
4. If the person taking the action proposes to undertake a **dispersal** that is not an **emergency dispersal** a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to **dispersal**. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to GHFF from the proposed **dispersal** activity;
 - c) The presence of pregnant GHFF;
 - d) The presence of **dependent young**;
 - e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on, or within two days of a **Heat Stress Event**;
 - f) Proposed avoidance and mitigation measures addressing potential impacts to GHFF, which must at a minimum include, **Stop Work Triggers**; and
 - g) Monitoring and reporting protocols.
5. The person taking the action may undertake an **emergency dispersal**. Unless negotiated with the **Minister and approved**, an **emergency dispersal** must be undertaken in accordance with the following requirements:
 - a) A **suitably qualified ecologist** must be engaged to advise of best practice **dispersal** methodology;
 - b) During **emergency dispersal** a **suitably qualified ecologist** must be present to oversee best practice **dispersal** methodology, undertake **behavioural monitoring** and document the outcomes of the process;
 - c) During **emergency dispersal** the person taking the action must comply with all recommendations and guidance from a **suitably qualified ecologist**;
 - d) **Emergency dispersal** must not be undertaken between 1 August and 30 September;

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- e) From 1 October to 31 March if a **suitably qualified ecologist** determines that **flightless dependent young** are present **dispersal** must not be undertaken;
 - f) **Emergency dispersal** must be undertaken 1.5 hours pre-dawn and finish one hour post-dawn to ensure **GHFF** have time to settle elsewhere before the heat of the day;
 - g) **Emergency dispersal** must not be undertaken during a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - h) Once **GHFF** have not returned to the site of **emergency dispersal** for more than five consecutive days and while absent from the site of **emergency dispersal**, the person taking the action must implement **passive measures**; and
 - i) Within five days of the completion of **emergency dispersal**, the person taking the action must submit a report to the **Minister** detailing the **dispersal** methodology implemented and the outcome achieved.
6. At the completion of Stage One of the **removal of habitat** (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**) and on the same date every subsequent year in which **removal of habitat** or **emergency dispersal** occurs, the person taking the action must submit a report to the **Minister** that addresses the following:
- a) Details of the activities undertaken that year relating to **removal of habitat** or **emergency dispersal**;
 - b) Details of the associated outcomes of these activities;
 - c) The data collected (in accordance with these conditions of approval and the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**);
 - d) The status of **GHFF** colonies in the Bairnsdale region;
 - e) Details of how information gained has been incorporated into the management of **GHFF** (adaptive management);
 - f) Details of any activities planned to occur in the following year;
 - g) Written and signed confirmation by a **suitably qualified ecologist** verifying the accuracy of the data, information, analysis and conclusions contained within the report; and
 - h) Raw data must be made available to the **Department** upon request.
7. Within **five** days after the **commencement** of the action, the person taking the action must advise the **Department** in writing of the actual date of **commencement**.
- 7.
8. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, **including measures taken to implement the management plans required by this approval**, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
- 8.
9. Within three months of every 12 month anniversary of the **commencement** of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. **Non-compliance with any of the conditions of this approval must also be reported to the department Department within 48 hours of the non-compliance occurring.**
- 9.
10. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.

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11. If the person taking the action wishes to carry out any activity otherwise than in accordance with the **management plans** as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that **management plan**. The varied activity shall not commence until the **Minister** has approved the varied **management plan** in writing. The **Minister** will not approve a varied **management plan** unless the revised **management plan** would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised **management plan**, that **management plan** must be implemented in place of the **management plan** originally approved.
12. If the **Minister** believes that it is necessary or convenient for the better protection of **listed threatened species and communities** to do so, the **Minister** may request that the person taking the action make specified revisions to the **management plans** specified in the conditions and submit the revised **management plans** for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved **management plan** must be implemented. Unless the **Minister** has approved the revised **management plan**, then the person taking the action must continue to implement the **management plan** originally approved, as specified in the conditions.
13. If, at any time after **five** years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of the **Minister**.
14. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish all **management plans** referred to in these conditions of approval on their website. Each **management plan** must be published on the website within **one** month of being approved.

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Definitions

Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan means the document titled *Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site*, [DRAFT Strategic Management and Action Plan, East Gippsland Shire Council, November, 2013].

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Behavioural monitoring means the monitoring by a **suitably qualified ecologist** of **GHFF** behaviour to identify behaviour outside of normal patterns of behaviour and changes in those patterns.

Commencement means any preparatory works associated with the **removal of habitat** from the **Mitchell River Roost Site**, such as the tagging of trees, introduction of machinery or clearing of vegetation, excluding fences and signage.

Department means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dependent young means:

- Newborn – totally dependent and carried by mother;
- Flightless dependant young – dependent on mother, but no longer carried large distances, unable to move easily around the camp; and
- Flying dependant young – dependent on mother, but able to move around the camp, can fly short distances.

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Dispersal means any action, including, but not limited to, active physical harassment, taken to remove **GHFF** from a site of habitation.

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Emergency dispersal means a **dispersal** response to be undertaken if **GHFF** relocate to an area where:

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- a) Public health is at immediate risk (this includes, but is not limited to, within 100 metres of a hospital or educational institution);
- b) There is potential for the spread of disease through vectors (this includes, but is not limited to, within 100 metres of a racecourse or horse stud property); and
- c) Anything else, as agreed with the **Department**.

Grey-headed Flying-fox (GHFF) means the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*.

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Grey-headed Flying-fox habitat means any patch of land, including non-native vegetation, which may be used by the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*, to forage, breed, shelter or disperse, as determined by a **suitably qualified ecologist**.

Flightless dependant young means **GHFF** that are dependent on their mother, but no longer carried large distances and that are unable to move easily around the camp.

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Heat Stress Event means a hot weather event lasting one day or more that is extremely stressful and harmful to animals, defined as when temperatures exceed 35°C before 31 December or 38°C over consecutive days from 1 January.

Hot Day means a day when the ambient temperature is predicted to reach 30°C before 10am AEST, or reach greater than 35°C over the day.

Hotline means a point of contact, where members of the public can contact the person taking the action to report any injured **GHFF**, the establishment of a new camp of **GHFF** and to discuss general concerns regarding **GHFF**.

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Listed threatened species and communities means a matter listed under sections 18 and 18A of the *Environment Protection and Biodiversity Conservation Act 1999*, specifically the **Grey-headed Flying-fox**.

Mitchell River Roost Site means the 0.5 hectare area defined at **Appendix A** as **Grey-headed Flying-fox habitat** along the Mitchell River, Bairnsdale, within which **removal of habitat** is to occur.

Minister means the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Passive measure means actions that do not involve active physical harassment of **GHFF**, which allow for ongoing maintenance of a successful dispersal area and that act as a deterrent against the animals re-establishing at the site, including, but not limited to, the trimming of branches and removal of limbs. It does not include the permanent **removal of habitat** critical to the survival of **GHFF**.

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Removal of habitat means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ring-barking, uprooting or burning of **Grey-headed Flying-fox habitat**.

Significant Stress means the identification of unacceptable levels of stress as determined by a **suitably qualified ecologist**. As a guide, **GHFF** may be exhibiting either sickness, malnutrition, abnormal flight, disorientation, injury, aggression towards a person undertaking an activity, there may be evidence of abandoned young, evidence of aborted young or, at worst case, death.

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Stop Work Triggers means site or animal conditions that indicate that the activity should cease.

Substantially commence means the removal of habitat at the Mitchell River Roost Site.

Suitably qualified ecologist means a practising ecologist with tertiary qualifications from a recognised institute and demonstrated expertise in scientific methodology, animal or conservation biology in relation to the **GHFF**.

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Appendix A



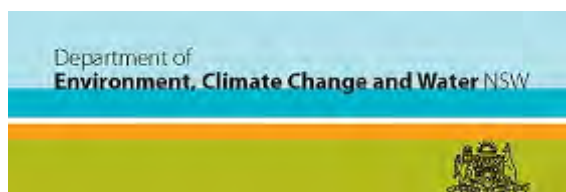


Draft National Recovery Plan for the

Grey-headed Flying-fox *Pteropus poliocephalus*



July 2009



Prepared by Dr Peggy Eby and by the Department of Environment, Climate Change and Water NSW for the Australian Government Department of the Environment, Water, Heritage and the Arts.

Disclaimer

The Australian Government, in partnership with the Environmental Protection Agency (Qld), the Department of Environment, Climate Change and Water NSW and the Department of Sustainability and Environment (Vic), facilitates the publication of recovery plans to detail the actions needed for the conservation of threatened native wildlife.

The attainment of objectives and the provision of funds may be subject to budgetary and other constraints affecting the parties involved, and may also be constrained by the need to address other conservation priorities. Approved recovery actions may be subject to modifications due to changes in knowledge and changes in conservation status.

The Department of Environment, Climate Change and Water has compiled the information in this publication in good faith, exercising all due care and attention. No representation is made as to its accuracy, completeness or suitability for any particular purpose. Readers should seek appropriate advice as to the suitability of the information for their particular needs.

This plan should be cited as follows:

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Cover photo: ©Vivien Jones

Published by:

Department of Environment, Climate Change and Water NSW

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ISBN 978 1 74122 819 9

DECC 2008/214

July 2008

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Acknowledgments

This recovery plan sets out the actions necessary to stop the decline of, and support the recovery of, the listed threatened species or ecological community. The Australian Government is committed to acting in accordance with the plan and to implementing the plan as it applies to Commonwealth areas.

This recovery plan has been prepared under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and structured according to the *Revised Recovery Plan Guidelines for Nationally Listed Threatened Species and Ecological Communities*, June 2002.

The plan has been developed with the involvement and cooperation of a broad range of stakeholders, but individual stakeholders have not necessarily committed to undertaking specific actions. The attainment of objectives and the provision of funds may be subject to budgetary and other constraints affecting the parties involved. Proposed actions may be subject to modification over the life of the plan owing to changes in knowledge.

This plan benefited substantially from the diligence of members of the National Recovery Team. Members were actively involved in developing content and providing critical input to each section of the recovery plan. They approached the project with consistent cooperation and goodwill. Peggy Eby, Kylie McClelland, Lindy Lumsden and Bruce Thomson participated in the early stages of planning the project. Thanks to Peter Fleming of the NSW Department of Primary Industries. Many others also contributed to, and commented on, drafts of this recovery plan, as members of email discussion groups or as interested individuals. Their involvement and input improved the quality of the document. Unfortunately, they are too numerous to list by name. State and Territory Government representatives Andrew Chalklen, Adrian Moorrees, Linda Bell and Sara Williams are thanked for their roles in the finalisation of this draft recovery plan.

Kylie McClelland of the Department of Environment, Climate Change and Water NSW collated final comments and edits and prepared the final draft.

The preparation of this plan was funded by the Australian Government's National Bushcare Program.

National Recovery Team

A National Recovery Team was convened to provide advice and expertise. The recovery team was structured to be representative of the many and varied stakeholders who have interests in the conservation and management of Grey-headed Flying-foxes and to be representative of the regions within the geographic range of the species. The following people participated, and they brought to the process a breadth of personal experience with Grey-headed Flying-foxes.

Amanda Lawrence	Species Listing and Policy Section, Approvals and Wildlife Division, Department of the Environment and Heritage (now the Department of the Environment, Water, Heritage and the Arts)
Kylie McClelland	Biodiversity Conservation Unit, Department of Environment, Climate Change and Water NSW
Lindy Lumsden	Arthur Rylah Institute, Victoria Department of Sustainability and Environment
David Dique	(formerly) Environmental Protection Agency (Qld)
Craig Walker	Environmental Protection Agency (Qld)
Ed Biel	NSW Farmers' Association
Jane Muller	Natural Resource Management, Growcom (Queensland)
Nicola Markus	(formerly) Species and Community Program Manager, WWF Australia
Nancy Pallin	NSW Nature Conservation Council
Robert James	Flying-fox Information and Conservation Network
Martin Smith	Ranger, Coffs Coast Area, Department of Environment, Climate Change and Water NSW
Ian Temby	Wildlife Damage Control Officer, Port Phillip Region, Victoria Department of Sustainability and Environment
Simon Toop	Grey-headed Flying-fox (former) Project Manager, Biodiversity and Natural Resources, Victoria Department of Sustainability and Environment
Peggy Eby	Consultant wildlife ecologist
John Nelson	Biological Sciences, Monash University
Kerryn Parry-Jones	Institute of Wildlife Research, School of Biological Sciences, University of Sydney
Mark Graham	(formerly) Terrestrial Ecologist, Coffs Harbour City Council
Kevin Taylor	(formerly) Natural Resources Officer, Coffs Harbour City Council
Greg Lollback	Resource Access Manager, former Department of Natural Resources NSW (now the Department of Environment, Climate Change and Water NSW)

Executive summary

This document constitutes the Draft National Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus*. It considers the conservation requirements of the species throughout its range, sets objectives for recovery and identifies actions to be undertaken to reverse decline and ensure long-term viability.

The Grey-headed Flying-fox is listed as Vulnerable under both the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the New South Wales *Threatened Species Conservation Act 1995*. The species is listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*, and its threatened status is under consideration in Queensland. The primary threats affecting the species are loss and degradation of foraging and roosting habitat, deliberate destruction associated with commercial horticulture and competition for resources from the Black Flying-fox, *Pteropus alecto*.

Grey-headed Flying-foxes occupy forests and woodlands in the coastal lowlands, tablelands and slopes of southeast Australia from Bundaberg to Geelong. They are migratory bats that are primarily found in coastal areas. Few localities support a continuous presence. Rare sightings occur north to Gladstone, west to Adelaide, south to Flinders Island and in inland areas of southern New South Wales and Victoria.

Grey-headed Flying-foxes feed on blossom and fruit in canopy vegetation and forage over extensive areas. They disperse pollen and seeds of diet plants during their foraging bouts; in this way they participate in the reproductive and evolutionary processes of forest communities. Clearing of native vegetation continues to reduce food production from native plants in the flying-foxes' diet, and food shortages are known to occur in winter and in spring. When native food is scarce, individuals increase their use of cultivated plants, particularly commercial fruit crops, exposing them to mortality from crop management practices.

The species is colonial and roosts in large aggregations in the exposed branches of canopy trees (camps). When the camps are undisturbed their locations are generally stable through time. Camp size fluctuates, and many camps are empty for extensive periods. Conflict between humans and flying-foxes is an ongoing and apparently increasing problem, particularly affecting camps located near human development. Conflict and negative perceptions of Grey-headed Flying-foxes can affect the species directly through harassment and deliberate destruction, or indirectly by inhibiting or impeding community support for conservation initiatives.

The overall objectives of recovery of Grey-headed Flying-foxes are: to reduce the impact of threatening processes; to arrest decline throughout their range; to conserve their functional roles in seed dispersal and pollination of native plants; and to improve the comprehensiveness and reliability of information available to guide recovery.

Specific objectives relevant to the 5-year duration of this recovery plan aim to identify, protect and enhance key foraging and roosting habitat; to substantially reduce deliberate destruction associated with commercial fruit crops; to reduce negative public attitudes and conflict with humans; and to involve the community in recovery actions where appropriate. Further objectives aim to address the impact on the species of artificial structures such as powerlines, loose netting and barbed wire fences; and to improve knowledge of demographics and population structure.

Actions to meet these objectives incorporate principles of sustainable development and promote procedures to minimise significant adverse social and economic impacts, such as the use of environmental incentive schemes and equitable cost-sharing arrangements.

1 Species information and general requirements

1.1 Species identification

The Grey-headed Flying-fox *Pteropus poliocephalus* Temminck 1825 is one of the largest bats in the world. Adult males generally weigh between 750 and 1000 g, and weights as high as 1133 g have been recorded (Ratcliffe 1932, Tidemann 1995, J. Nelson, Monash University unpublished data). Adult females generally weigh between 650 and 800 g. Although males and females differ in weight, their forearms are of similar length at 155 to 175 mm. Body fur is typically medium to dark grey, with many light-tipped hairs (Hall and Richards 2000). Fur on the head is also grey but varies in shade from near black to silver. An orange or russet-coloured mantle or collar encircles the neck. Leg fur extends to the ankle, and this characteristic distinguishes the species from the similarly sized Black Flying-fox, *P. alecto*, the legs of which are bare below the knee. Wing membranes are black.

1.2 Conservation status

Since the time of European settlement of Australia Grey-headed Flying-foxes have been subjected to ongoing loss of foraging habitat; direct, deliberate destruction in commercial fruit crops and in diurnal roosts (camps); and competition with Black Flying-foxes for resources (Ratcliffe 1931, Tidemann *et al.* 1999). These and other threatening processes have resulted in an ongoing decline in abundance. Ratcliffe (1932) hypothesised that a 50% reduction in abundance had occurred by the late 1920s. There is evidence of a decline of approximately 30% since 1989 (Tidemann *et al.* 1999, Parry-Jones 2000, Threatened Species Scientific Committee 2001). For these reasons, the Grey-headed Flying-fox is listed as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the New South Wales *Threatened Species Conservation Act 1995* and as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*. Its threatened status in Queensland is under consideration.

1.3 Taxonomy

The taxonomy of the Grey-headed Flying-fox is considered unambiguous (Tidemann 1995, Webb and Tidemann 1996). No intraspecific taxa are recognised.

1.4 Objects of the EPBC Act

This recovery plan has been prepared with due consideration of the objects of the EPBC Act, which are:

- (a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance
- (b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources
- (c) to promote the conservation of biodiversity
- (d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples
- (e) to assist in the co-operative implementation of Australia's international environmental responsibilities
- (f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity
- (g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

1.5 International obligations

The Grey-headed Flying-fox is endemic to Australia and is not listed under any international agreements.

1.6 Affected interests

A wide range of public authorities, organisations and private individuals may be affected by actions to recover the Grey-headed Flying-fox. The habitats used by the species for foraging and roosting are varied and widespread. They include intact and remnant native forests and woodlands, paddock trees in agricultural landscapes, garden and streetscape plantings in urban areas and cultivated fruit trees. Management of foraging and roosting habitat falls under the jurisdiction of a range of authorities and is regulated by Commonwealth and State legislation in the three range States of the species, as well as by the policies of local government areas throughout the range of the species.

Government agencies with affected interests include:

Australian Government

Department of the Environment, Water, Heritage and the Arts

Queensland Government

Environmental Protection Agency
Department of Primary Industry and Fisheries
Department of Natural Resources and Water
Department of Local Government, Sport and Recreation

New South Wales Government

Department of Environment, Climate Change and Water (including National Parks and Wildlife Service),
Royal Botanic Gardens Trust
Department of Planning
Department of Primary Industries (including NSW Agriculture, Forests NSW)

Victorian Government

Department of Sustainability and Environment
Department of Primary Industries
Parks Victoria

Local Government

Local government areas throughout the range of the species

State-based resource management groups

Queensland – Natural Resource Management groups
New South Wales – Catchment Management Authorities
Victoria – Catchment Management Authorities

Actions proposed as part of this recovery plan may affect various members of the community, including:

- private landholders whose properties provide foraging or roosting habitat
- persons whose homes immediately adjoin camps
- conservation organisations
- licensed animal rehabilitators and their representative organisations
- individuals and groups involved in tree-planting and habitat restoration programs
- volunteers involved in flying-fox surveys and population estimates

- individual researchers and their representative organisations.

Proposed actions may also affect individual commercial fruit growers and representative organisations, including:

- BananasNSW
- NSW Farmers' Association
- Queensland – Growcom (formerly Queensland Fruit and Vegetable Growers)
- Victoria – Eastern Metropolitan Fruit Growers Association.

1.7 Role and interests of indigenous people

In making a recovery plan, regard must be given to the role and interests of indigenous people in the conservation of Australia's biodiversity. The indigenous communities in regions affected by this plan have not yet been identified. Implementation of recovery actions under this plan will include consideration of the roles and interests of indigenous communities.

There will be further indigenous consultation before finalisation of the plan. In Queensland, consultation will occur via the Indigenous Liaison Officers of the relevant Natural Resource Management Groups. In New South Wales, consultation will occur through Department of Environment, Climate Change and Water contact with interested Aboriginal Land Councils and Catchment Management Authorities, Aboriginal Reference Groups and through direct contact with indigenous organisations. In Victoria, indigenous communities on whose traditional lands the Grey-headed Flying-fox occurs will be advised, through the relevant Department of Sustainability and Environment Regional Indigenous Facilitator, of the preparation of this draft Recovery Plan and invited to provide comments. The public exhibition phase provides an opportunity for indigenous people to comment on the draft recovery plan.

1.8 Benefits to other species

Management actions to recover the Grey-headed Flying-fox will provide direct benefits to various species of fauna and flora, including several species listed as threatened under State and Commonwealth legislation (Table 1). They will also benefit various threatened plant communities and three of Australia's World Heritage Areas: Fraser Island, the Central Eastern Rainforest Reserves and the Greater Blue Mountains.

Grey-headed Flying-foxes interact with numerous plant communities and confer the benefits of seed and pollen dispersal on the diet plants that occur within these communities (Eby 1996, Southerton *et al.* 2004, Birt 2005). Actions to arrest the decline in the Grey-headed Flying-fox population will protect these important ecosystem functions. Diet lists for Grey-headed Flying-foxes include over 100 species of flowering trees and fleshy-fruited trees and lianas (Parry-Jones and Augee 1991, Eby 1995 and 1998, Hall and Richards 2000). Actions to protect or regenerate foraging and roosting habitat will benefit several hundred vegetation communities in Queensland, New South Wales and Victoria (P. Eby and B. Law unpublished data). Nectar- and fruit-feeding bats, birds and mammals will also benefit, as will a range of other fauna that occupy the forest and woodland communities used by Grey-headed Flying-foxes.

Actions to protect roosting habitat and ameliorate conflict at camps in urban areas will additionally benefit the Black Flying-foxes and Little Red Flying-foxes that share communal camps with Grey-headed Flying-foxes (Birt and Markus 1999, Tidemann 1999, Eby 2004).

Actions to reduce deliberate destruction associated with commercial fruit crops by introducing alternative crop management techniques will benefit other native vertebrates that damage crops, including Black Flying-foxes, Little Red Flying-foxes, and several species of birds, including Little and Long-billed Corellas, Galahs, Pied Currawongs, Red Wattlebirds, Noisy Friarbirds, Black-faced Cuckoo-shrikes, Musk Lorikeets, Rainbow Lorikeets, Scaly-breasted Lorikeets, Crimson Rosellas, Eastern Rosellas, Pale-headed Rosellas, Australian King-Parrots, Silvereyes, Satin Bowerbirds, Yellow-faced and Blue-faced Honeyeaters, Figbirds and Olive-backed Orioles (Bomford and Sinclair 2002).

Implementation of this recovery plan is not expected to adversely impact other species or ecological communities.

Table 1: Species and communities that are listed under Commonwealth and State threatened species legislation and will benefit from actions to recover the Grey-headed Flying-fox

CE = listed as critically endangered, E = listed as endangered, V = listed as vulnerable, T = listed as threatened, R = listed as rare. The fauna on this list is limited to birds and mammals.

Species, population or community	Aust Govt	Qld	NSW	Vic
Flora				
Species and populations				
<i>Eucalyptus seeana</i> population at Taree			E	
<i>E. parramattensis decadens</i>	V		V	
<i>E. parramattensis parramattensis</i> population at Wyong and Lake Macquarie			E	
<i>Davidsonia</i> spp.	E		E	
<i>Eucalyptus tetrapleura</i>	V		V	
<i>Syzygium paniculatum</i>	V		V	
Vegetation communities				
Bangalay Sand Forest, Sydney Basin and South East Corner Bioregions			E	
Bega Dry Grass Forest South East Corner Bioregion			E	
Blue Gum High Forest Sydney Basin Bioregion	CE		CE	
Brogo Wet Vine Forest South East Corner Bioregion			E	
Candelo Dry Grass Forest South East Corner Bioregion			E	
Castlereagh Swamp Woodland			E	
<i>Casuarina glauca</i> open forest		E		
Central Gippsland Plains Grassland				T
<i>Corymbia citriodora</i> open forest		E		
Cumberland Plain Woodland	E		E	
Dry Rainforest of the South East Forests of the South East Corner Bioregion			E	
Eastern Suburbs Banksia Scrub Sydney Basin Bioregion	E		E	
<i>Eucalyptus camaldulensis</i> fringing open forest		E		
<i>Eucalyptus camaldulensis</i> in the Hunter Catchment			E	
<i>Eucalyptus melanophloia</i> , <i>E. crebra</i> woodland on sedimentary rocks		E		
<i>Eucalyptus melliodora</i> woodland		E		
<i>Eucalyptus moluccana</i> open forest		E		
<i>Eucalyptus populnea</i> woodland on alluvial plains		E		
<i>Eucalyptus seeana</i> , <i>Corymbia intermedia</i> , <i>Angophora leiocarpa</i> woodland		E		
<i>Eucalyptus siderophloia</i> , <i>E. propinqua</i> , <i>E. microcorys</i> and/or <i>E. pilularis</i> tall open forest		E		
<i>Eucalyptus tereticornis</i> , <i>Angophora floribunda</i> open forest on alluvial plains		E		
<i>Eucalyptus tereticornis</i> , <i>Corymbia intermedia</i> on remnant Tertiary surfaces		E		
<i>Eucalyptus tereticornis</i> woodland to open forest on alluvial plains		E		
<i>Eucalyptus tindaliae</i> and/or <i>E. racemosa</i> open forest		E		
Forest Red Gum Grassy Woodland				T
Gallery rainforest (notophyll vine forest) alluvial plains		E		
Grassy White Box Woodlands	E			
Herb-rich Plains Grassy Wetland (West Gippsland)				T

Table 1 cont'd: Species and communities that are listed under Commonwealth and State threatened species legislation and will benefit from actions to recover the Grey-headed Flying-fox

CE = listed as critically endangered, E = listed as endangered, V = listed as vulnerable, T = listed as threatened, R = listed as rare. The fauna on this list is limited to birds and mammals.

Species, population or community	Aust Govt	Qld	NSW	Vic
Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion			E	
Illawarra Subtropical Rainforest Sydney Basin Bioregion			E	
Limestone Grassy Woodland Community				T
Littoral Rainforest NSW North Coast, Sydney Basin and South East Corner Bioregions			E	
Lower Hunter Spotted Gum – Ironbark Forest in the Sydney Basin Bioregion			E	
Lowland Grassy Woodland in the South East Corner Bioregion			E	
Lowland Rainforest in the NSW South Coast and Sydney Basin Bioregions			E	
<i>Melaleuca irbyana</i> low open forest		E		
Microphyll/notophyll vine forest on beach ridges		E		
Milton Ulladulla Subtropical Rainforest in the Sydney Basin Bioregion			E	
River-Flat Eucalypt Forest on Coastal Floodplains of NSW North Coast, Sydney Basin and South East Corner Bioregions			E	
O'Hares Creek Shale Forest			E	
Pittwater Spotted Gum Forest			E	
Shale Gravel Transition Forest Sydney Basin Bioregion	E		E	
Shale/ Sandstone Transition Forest			E	
Southern Sydney Sheltered Forest on Transitional Sandstone Soils in the Sydney Basin Bioregion			E	
Subtropical Coastal Floodplain Forest NSW North Coast Bioregion			E	
Sun Valley Cabbage Gum Forest Sydney Basin Bioregion			E	
Swamp Oak Floodplain Forest NSW North Coast, Sydney Basin and South East Corner Bioregions			E	
Swamp Sclerophyll Forest on Coastal Floodplains of NSW North Coast, Sydney Basin and South East Corner Bioregions			E	
Sydney Turpentine-Ironbark Forest	CE		E	
<i>Syncarpia glomulifera</i> open forest		E		
Tall open forest of <i>Eucalyptus pilularis</i>		E		
Tall open forest with <i>Eucalyptus cloeziana</i>		E		
Umina Coastal Sandplain Woodland in the Sydney Basin Bioregion			E	
Warm Temperate Rainforest (Coastal East Gippsland)				T
Warm Temperate Rainforest (East Gippsland Alluvial Terraces)				T
Warm Temperate Rainforest (Far East Gippsland)				T
White Box Yellow Box Blakely's Red Gum Woodland	CE		E	

Table 1 cont'd: Species and communities that are listed under Commonwealth and State threatened species legislation and will benefit from actions to recover the Grey-headed Flying-fox

CE = listed as critically endangered, E = listed as endangered, V = listed as vulnerable, T = listed as threatened, R = listed as rare. The fauna on this list is limited to birds and mammals.

Species, population or community	Aust Govt	Qld	NSW	Vic
<i>Fauna (birds and mammals only)</i>				
Birds				
Albert's Lyrebird			V	
Barking Owl			V	T
Barred Cuckooshrike			V	
Black-breasted Button Quail	V	V	E	
Black-chinned Honeyeater		R	V	
Brown Treecreeper (eastern sub-species)			V	
Bush Hen			V	
Coxen's Fig Parrot	E	E	E	
Emu population of the NSW North Coast Bioregion and Port Stephens Local Government Area			E	
Gang-gang Cockatoo			V	
Gang-gang Cockatoo in the Hornsby and Ku-ring-gai Local Government Areas			E	
Hooded Robin (south-eastern form)			V	T
Mangrove Honeyeater			V	
Marbled Frogmouth		V	V	
Masked Owl			V	T
Powerful Owl		V	V	T
Purple-crowned Lorikeet			V	
Regent Honeyeater	E	E	E	T
Rose-Crowned Fruit-dove			V	
Rufous Scrub-bird		V	V	
Sooty Owl			V	
Superb Fruit-dove			V	
Swift Parrot	E	E	E	T
Turquoise Parrot			V	T
White-eared Monarch			V	
Wompoo Fruit-dove			V	
Mammals				
Brush-tailed Phascogale			V	T
Eastern Pygmy Possum			V	
Greater Glider in the Eurobodalla Local Government Area			E	
Koala		V	V	
Koala population in the Hawks Nest and Tea Gardens area			E	
Koala population in the Pittwater Local Government Area			E	
Koala population South East Queensland Bioregion		V		
Long-nosed Potoroo	V	V	V	T
Long-nosed Potoroo population Cobaki Lakes and Tweed Heads West			E	
Long-footed Potoroo	E		E	T
Parma Wallaby			V	
Red-legged Pademelon			V	
Rufous Bettong			V	T
Southern Brown Bandicoot	E		E	
Spotted-tail Quoll		V	V	T
Squirrel Glider			V	T
Squirrel Glider population on the Barrenjoey Peninsula			E	
White-footed Dunnart			V	T
Yellow-bellied Glider			V	

This recovery plan encompasses a range of broad biodiversity and conservation issues and principles, many of which have been identified as significant to Australia (Williams *et al.* 2001). Examples include maintenance of functional ecosystems; preservation of connectivity across landscapes and regions; involvement of private landholders in biodiversity conservation; equitable cost-sharing for biodiversity conservation; land clearing; forest degradation; sustainable management practice; targeted habitat restoration; human population growth in coastal areas; urban habitat as refuge; conflict between humans and wildlife; and, importantly, the need to actively educate and involve the public in conservation and biodiversity initiatives.

1.9 Social and economic impacts

The implementation of this recovery plan will be associated with various social and economic costs and benefits. Many initiatives for habitat preservation will affect privately owned land with commercial value. Management actions may restrict, or result in additional costs to, residential development, agricultural expansion and commercial forestry practice. Initiatives to reduce deliberate destruction of flying-foxes on crops will require shifts in management practices; these shifts might result in substantial costs to commercial fruit industries.

There are few non-lethal alternatives available to industry, and their effectiveness remains a topic of debate. Similarly to deliberate destruction, deterrents that involve sight, sound and smell are generally believed to provide a degree of protection when pressure from flying-foxes is low, but they have been found to be ineffective when pressure is high (Bicknell 2002, Teagle 2002, Ballard 2004).

The only method of crop protection that is unambiguously effective is the provision of complete physical barriers, such as full exclusion netting or reinforced banana bags. Rates of uptake in some regions have increased in recent years in response to rising levels of damage by flying-foxes and birds (P. Wilks pers. comm., NSW Agriculture). Netting requires a substantial capital outlay, and concerns have been raised regarding the impact of installing netting on the economic viability of individual orchards (Gough 2002, Ullio 2002). Economic models have shown that netting provides a viable protection option for some crops (Rigden *et al.* 2000); growers generally consider it appropriate for crops of relatively high value that are cultivated on relatively flat land and can be pruned to an appropriate height. However, netting is not a financially viable management option on several previously viable crops, such as various stone and pome fruit crops in the Sydney Basin region (Ullio 2002). Measures are needed to increase rates of netting uptake on these problematic crops, or otherwise to encourage the use of non-lethal management methods. People living adjacent to orchards also raise safety concerns in relation to shooting at night. This issue is becoming more prevalent as human population densities in rural and semi-rural areas increase.

The incidence of crop visitation by Grey-headed Flying-foxes is not declining in line with the decline in the population of this species. Instead, crop damage is reportedly increasing, particularly in the southern half of the range, and this trend is likely to continue (Biel 2002, Comensoli 2002, Rogers 2002, I. Temby pers. comm., Victorian Department of Sustainability and Environment). If flying-foxes increase their use of crops when native food is limited, one would predict that the fruit industry in eastern Australia will experience difficulties with flying-foxes so long as the bats experience periods of inadequate food. Food shortages are likely to persist into the future as a consequence of ongoing forest loss. This loss of habitat is not being caused by commercial fruit operations. There is general concern within the industry that growers should not be financially disadvantaged by the resulting change to the status of Grey-headed Flying-foxes, a change that may preclude the use of deliberate destruction (Biel 2002).

Comprehensive implementation of this recovery plan will provide long-term economic benefits associated with the protection of ecosystem services, promotion of sustainable forest management, reduced conflict at camps, improved crop protection regimes, promotion of sustainable agricultural practices and increased viability of some commercial fruit industries. Programs to preserve continuous nectar production from diet plants will benefit the apiary

industry. Programs to conserve and enhance foraging habitat that is productive at times critical for the commercial fruit industry will reduce impacts on crops (Law *et al.* 2002).

Social benefits from this recovery plan will be derived from reduced conflict between humans and flying-foxes, particularly at camps and in crops; a public better informed about flying-foxes and broader conservation issues; and increased public participation in conservation initiatives. The camps and the dusk exit flights of Grey-headed Flying-foxes are increasingly being recognised as attractions for eco-tourism, as is apparent at camps in Grafton, Wingham, Bellingen and Yarra Bend. Programs to protect camps and ameliorate conflict with neighbours will benefit tourism in urban and regional areas. Initiatives to promote equity in the cost of biodiversity conservation will provide positive social and economic outcomes (Biel 2002).

2 Distribution and location

Grey-headed Flying-foxes occupy the coastal lowlands and slopes of southeastern Australia from Bundaberg to Geelong and are usually found at altitudes < 200 m (Figure 1). Areas of repeated occupation extend inland to the tablelands and western slopes in northern New South Wales and the tablelands in southern Queensland. Sightings in inland areas of southern New South Wales and Victoria are uncommon. There are rare records of individuals or small groups west to Adelaide, north to Gladstone and south to Flinders Island.

2.1 Seasonal patterns of distribution

The Grey-headed Flying-fox is a highly mobile, migratory species that relies on food sources with largely irregular patterns of production (Law *et al.* 2000). Patterns of occurrence and relative abundance within its distribution vary widely between seasons and between years. When assessed at a local scale, the species is generally present intermittently and irregularly (Eby and Lunney 2002). However, broad trends in the distribution of plants with similar flowering and fruiting schedules support regular annual cycles of migration that are apparent at regional scales (Eby and Lunney 2002, Figure 2). The metropolitan areas of Brisbane, Newcastle, Sydney and Melbourne are occupied continuously (Pallin 2000, Hall 2002, van der Ree *et al.* 2006). Elsewhere, during spring Grey-headed Flying-foxes are uncommon south of Nowra and widespread in other areas of their range. They are widespread throughout their range in summer. In autumn, they occupy coastal lowlands and are uncommon inland. In winter they congregate in coastal lowlands north of the Hunter Valley and are occasionally found on the south coast of New South Wales (associated with flowering Spotted Gum *Corymbia maculata*) and the northwest slopes (generally associated with flowering White Box *Eucalyptus albens* or Mugga Ironbark *E. sideroxylon*).

2.2 Historical change to distribution

There is evidence that the northern limit to the range of Grey-headed Flying-foxes has contracted by approximately 500 km during the past 100 years. Collett (1887) recorded large numbers of the species in Mackay. Fifty years later, Ratcliffe (1931) identified Rockhampton as the northern limit to their range. The current limit is 250 km farther south. There is no evidence that the southern limit to distribution has changed. Grey-headed Flying-foxes were first recorded in Melbourne and Geelong in the mid-1880s and were recorded as far west as Warrnambool in the early 1960s (Nelson 1965a, Victorian Department of Sustainability and Environment 2005). Insufficient information exists to enable the assessment of change to inland boundaries.

Patterns of occupancy and abundance have altered in some parts of the range. During the past 20 years the numbers of animals occupying camps in metropolitan Newcastle, inner Sydney and Melbourne/Geelong have increased, and several camps in these large urban areas have changed their patterns of occupation from seasonal use to continuous use (Richards 2002, van der Ree *et al.* 2006, D. Bidwell Royal Botanic Gardens Sydney unpublished). The increasing occurrence in Melbourne has resulted in a general increase in sightings in Gippsland and on the south coast of New South Wales as animals migrate to and from Melbourne (Tidemann and Nelson 2004).

2.3 Extent and geographical locations of populations

Grey-headed Flying-foxes are partial migrants: some individuals migrate whereas others are sedentary (Fleming and Eby 2003, Tidemann and Nelson 2004). A small number of local areas support a continuous presence and others are associated with regular, annual patterns of use (Figure 3). There is consistent evidence from radio-telemetry, satellite-telemetry and banding studies that these patterns of camp occupation reflect behavioural subdivisions in the population, including resident animals that inhabit camps permanently and individuals with seasonal fidelity to specific camps (Eby 1991, Parry-Jones and Augee 2001, Fleming and Eby

2003, Tidemann and Nelson 2004). There is no evidence that these behaviours are expressed in the genetic structure of the species, although the question has not been specifically addressed by research (Webb and Tidemann 1996). Resident populations occur in urban centres in southeast Queensland, Newcastle, Sydney and Melbourne, where highly diverse garden and streetscape plantings, including exotic plants and weeds, provide a continuous source of food, as well as vegetation suitable for roosting (Parry-Jones and Augee 2001, Hall 2002, Birt 2005, van der Ree *et al.* 2006). In addition, the natural diversity of food plants in a number of coastal areas of the Interim Biogeographic Regionalisation of Australia bioregions of southeast Queensland and the New South Wales north coast supports a continuous presence (Eby 1995, 1996). Camps with annual patterns of occupation occur in coastal areas and are common north from Batemans Bay, New South Wales.

Figure 1. Distribution of Grey-headed Flying-foxes, showing sightings recorded since 1984

There are few data from inland regions, and blank localities on the map cannot be interpreted as areas never occupied by the species.

- = records from areas of repeated occupation (> 1 record in a 40 km radius)
- ◐ = areas of unusual occupation (one record in a 40 km radius)
- = vagrants (records of individuals or small groups in unusual areas)

(Sources: Atlas of NSW Wildlife, NSW DEC 2004; Atlas of Victorian Wildlife, Victoria DSE 2004; WildNet, QPWS 2004; Eby 2004; Tidemann and Nelson 2004; G. O'Brien, University of New England unpublished data; T. Reardon, South Australian Museum unpublished data.)

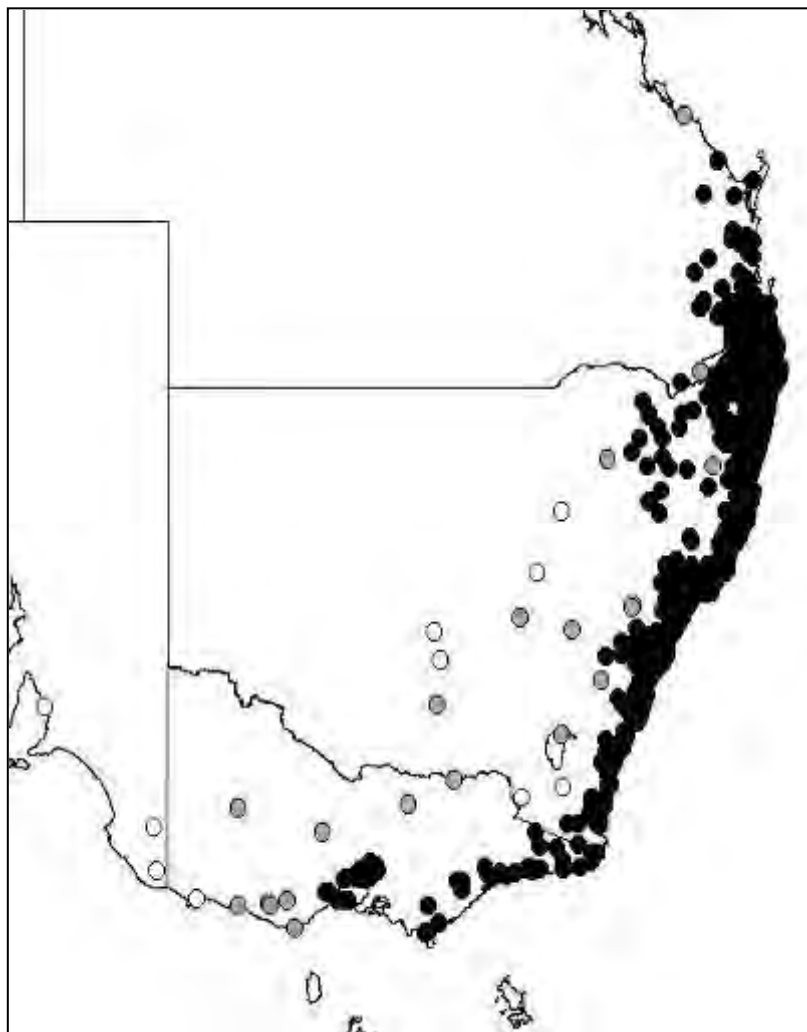


Figure 2: Seasonal sightings of Grey-headed Flying-foxes in areas of repeated occupation, as described in Figure 1

Winter sightings associated with the urban areas of Sydney and Melbourne are outlined to differentiate them from sightings in non-urban areas and highlight the importance of native vegetation in the northern half of the range in that season.

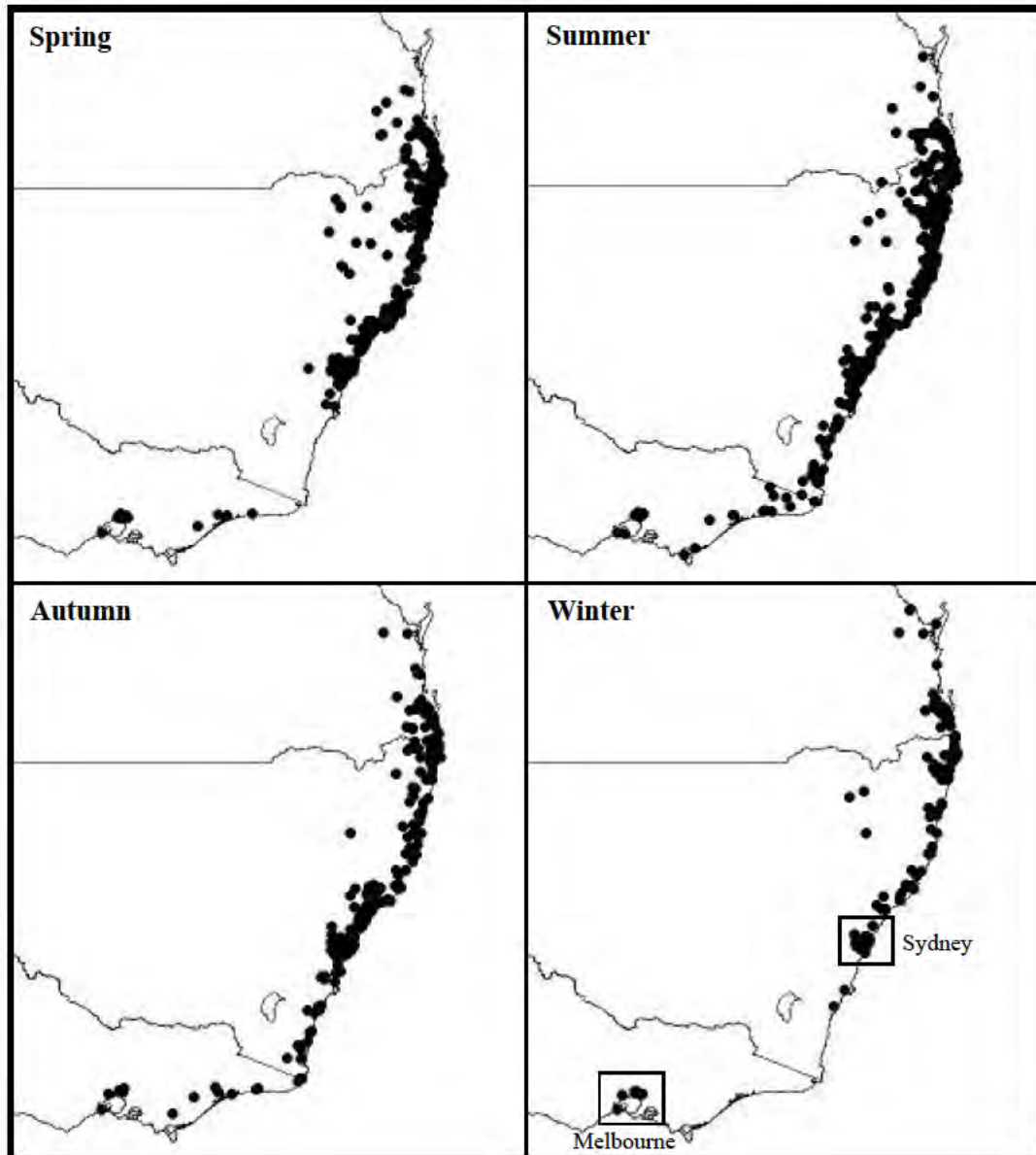
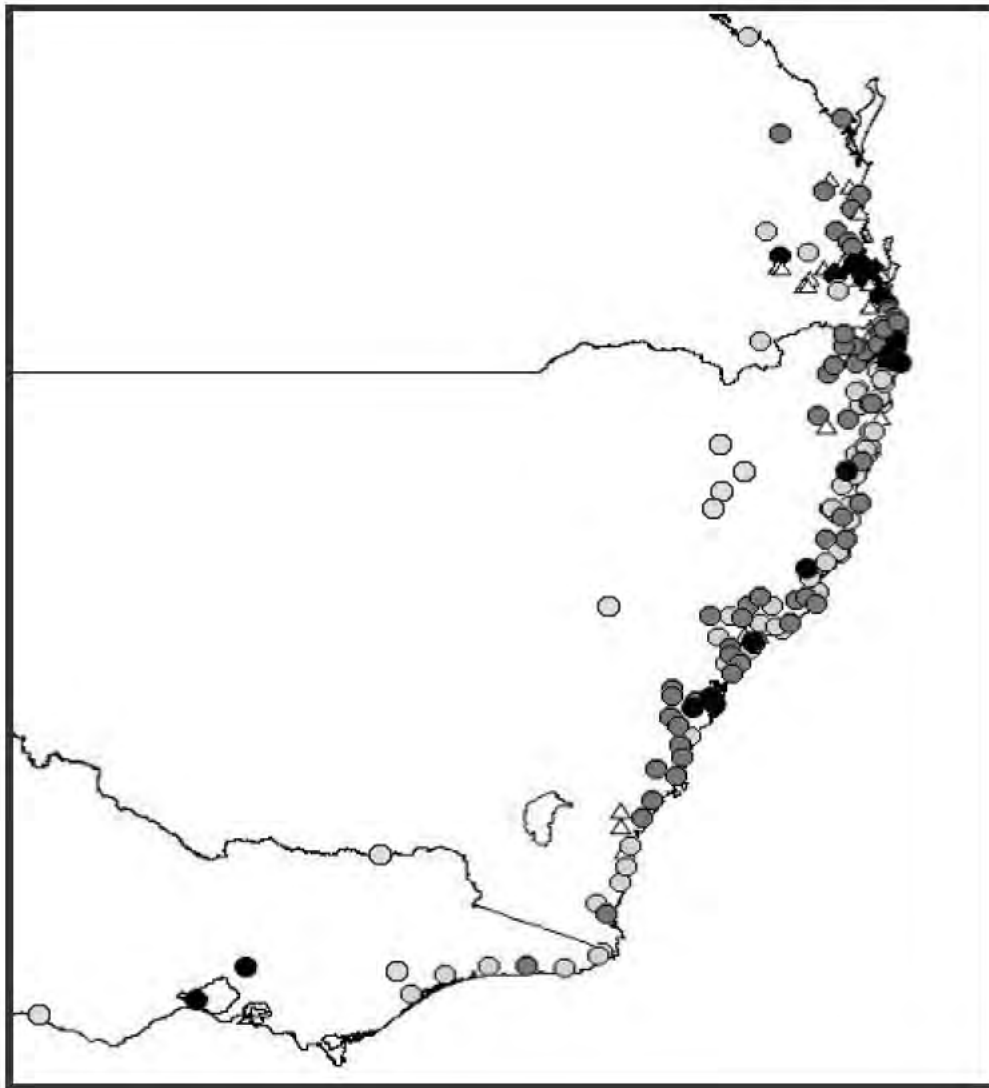


Figure 3: Locations of camps used by Grey-headed Flying-foxes, with indications of their patterns of use

- occupied continuously
- seasonal occupation > 80% of years
- occupied < 80% of years
- △ unknown, not continuous



2.4 Habitat critical to the survival of the species

In order to survive, Grey-headed Flying-foxes require a continuous sequence of productive foraging habitats, the migration corridors or stopover habitats that link them, and suitable roosting habitat within nightly commuting distance of foraging areas (Fleming and Eby 2003).

It should be noted that different jurisdictions have different legislative provisions and definitions of habitat critical to the survival of a species and of critical habitat. The legislative provisions and definition under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* apply to this national recovery plan.

A recovery plan for a nationally listed threatened species must identify the habitats that are critical to the survival of the species concerned and the actions needed to protect those habitats. S. 270(2)(d) of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* states that ‘In particular, a recovery plan must (subject to subsection (2A)):

- (d) identify the habitats that are critical to the survival of the species or community concerned and the actions needed to protect those habitats’

where subsection (2A) states that ‘A recovery plan need only address the matters mentioned in paragraphs (2)(d), (e), (f), (g) and (h) to the extent to which it is practicable to do so.’

S. 37(1) of the New South Wales *Threatened Species Conservation Act 1995* states that ‘The whole or any part or parts of the area or areas of land comprising the habitat of an endangered species, population or ecological community or critically endangered species or ecological community that is critical to the survival of the species, population or ecological community is eligible to be declared under this Part to be the critical habitat of the species, population or ecological community.’

That is, in New South Wales critical habitat can not be declared for a species listed as vulnerable under the *Threatened Species Conservation Act 1995*.

S. 13 of the Queensland *Nature Conservation Act 1992* states that

- ‘(1) Critical habitat is habitat that is essential for the conservation of a viable population of protected wildlife or community of native wildlife, whether or not special management considerations and protection are required.
- (2) A critical habitat may include an area of land that is considered essential for the conservation of protected wildlife, even though the area is not presently occupied by the wildlife.’

S. 20(1) of the Victorian *Flora and Fauna Guarantee Act 1988* states that ‘The Secretary may determine that the whole or any part or parts of the habitat of any taxon or community of flora or fauna is critical to the survival of that taxon or community.’

Foraging habitat critical to survival

The majority of myrtaceous plants in the diet of Grey-headed Flying-foxes flower within a defined season but are not annually reliable, and the locations of productive foraging habitat provided by these plants vary (Law *et al.* 2000, Eby and Lunney 2002, Birt 2005). In most months it is not possible to predict what localities will be productive, and therefore what localities will provide essential habitat for the species. All foraging habitat has the potential to be productive during general food shortages and to therefore provide a resource critical to survival.

On the basis of current knowledge, foraging habitat that meets at least one of the following criteria can be explicitly identified as habitat critical to survival, or essential habitat, for Grey-headed Flying-foxes. Natural foraging habitat that is:

1. productive during winter and spring, when food bottlenecks have been identified (Parry-Jones and Augee 1991, Eby *et al.* 1999)
2. known to support populations of > 30 000 individuals within an area of 50 km radius (the maximum foraging distance of an adult)

3. productive during the final weeks of gestation, and during the weeks of birth, lactation and conception (September to May)
4. productive during the final stages of fruit development and ripening in commercial crops affected by Grey-headed Flying-foxes (months vary between regions)
5. known to support a continuously occupied camp.

Roosting habitat critical to survival

Grey-headed Flying-foxes roost in large aggregations in the exposed branches of canopy trees (Ratcliffe 1931, Nelson 1965a, Parry-Jones and Augee 1992). The locations of camps are generally stable through time, and several sites have documented histories that exceed 100 years (Lunney and Moon 1997). Camps provide resting habitat, sites of social interactions and refuge for animals during significant phases of their annual cycle, such as birth, lactation and conception (Parry-Jones and Augee 1992, 2001).

On the basis of current knowledge, roosting habitat that meets at least one of the following criteria can be explicitly identified as habitat critical to survival, or essential habitat, for Grey-headed Flying-foxes. Roosting habitat that:

1. is used as a camp either continuously or seasonally in > 50% of years
2. has been used as a camp at least once in 10 years (beginning in 1995) and is known to have contained > 10 000 individuals, unless such habitat has been used only as a temporary refuge, and the use has been of limited duration (i.e. in the order of days rather than weeks or months)
3. has been used as a camp at least once in 10 years (beginning in 1995) and is known to have contained > 2 500 individuals, including reproductive females during the final stages of pregnancy, during lactation, or during the period of conception (i.e. September to May).

Additional points:

1. In order to reduce conflict, camps in remnant vegetation should be isolated from human habitation by a management zone > 300 m wide. The extent of the management zone should be included in the definition of the camp. It should comprise habitat unsuitable for roosting by flying-foxes (cleared land, low shrubs or isolated trees). Residential development, schools and other structures that might lead to conflict should be excluded.
2. Where possible, the area of vegetation defined as a camp should be large enough to accommodate influxes of migratory animals and enable the colony to change location.
3. Camps that are critical to the survival of the species may consist of introduced plants.

2.5 Mapping of habitat critical to the survival of the species

Habitat critical to the survival of Grey-headed Flying-foxes has not been mapped. Actions under this recovery plan will produce maps of habitat critical to survival.

3 Known and potential threats

3.1 *Biology and ecology relevant to threatening processes*

Diet and foraging ecology. Grey-headed Flying-foxes feed primarily on blossom and fruit in canopy vegetation and supplement this diet with leaves (Ratcliffe 1931, Parry-Jones and Augee 1991, Eby 1995, 1998, Tidemann 1999, Hall and Richards 2000). The majority of animals feed on nectar and pollen from eucalypts (genera *Eucalyptus*, *Corymbia* and *Angophora*), melaleucas and banksias. Grey-headed Flying-foxes forage over extensive areas. One-way commutes of approximately 50 km have been recorded between camps and foraging areas (Eby 1991), although commuting distances are more often < 20 km (Tidemann 1999).

Flying-foxes disperse pollen and seeds of diet plants during their foraging bouts; in this way they participate in the reproductive and evolutionary processes of forest communities. The movement of genetic material via seed and pollen dispersal provides plants with a range of benefits, and various characteristics of Grey-headed Flying-foxes contribute to this species' role as a pollen and seed disperser. Their mobility, size, territorial feeding behaviour, and colonial habit result in wide-ranging dissemination of pollen and seeds (Eby 1996, Southerton *et al.* 2004, Birt 2005). The nightly foraging areas of individuals generally contain several trees that may be separated by distances exceeding 5 km (Eby 1996, Birt 2005). The ability of flying foxes to move freely among habitat types allows them to transport genetic material across fragmented, degraded and urban landscapes.

The foraging behaviour of Grey-headed Flying-foxes alters when native food is scarce. Individuals decrease the costs of foraging by reducing their coloniality. They roost individually, or in small groups, near feeding trees. Usual patterns of foraging behaviour are relaxed as animals come down close to the ground in search of food and increase the use of cultivated plants, particularly commercial fruit crops (Ratcliffe 1931, McWilliam 1986, Teagle 2002). Contact with humans increases in these circumstances, and greater numbers of animals are at risk of mortality from crop management practices.

Long distance movements. The majority of eucalypts have regular seasonal flowering schedules but do not flower every year, and there are few areas within the range of the Grey-headed Flying-fox where nectar is available continuously (House 1997, Wilson and Bennett 1999, Law *et al.* 2000). Grey-headed Flying-foxes have no adaptations for withstanding food shortages (e.g. torpor) and migrate in response to changes in the amount and location of food (Hall and Richards 2000). Evidence from broad-scale surveys, radio-telemetry and satellite-telemetry shows that adults and young can move hundreds of kilometres between productive habitats (Eby 1991, Spencer *et al.* 1991, Parry-Jones 1993, Augee and Ford 1999, Tidemann and Nelson 2004). In most areas within the species' range, patterns of migration and distribution vary considerably between seasons and between years (Eby and Lunney 2002). The mechanisms that flying-foxes use to locate stands of flowering trees are unknown and have not been studied. However, no speculative movements of large numbers of animals have been observed, and there is inferential evidence that information exchange plays a role in locating food.

Roosting ecology. Grey-headed Flying-foxes display a degree of flexibility in their choice of camp vegetation (Tidemann 1999, Peacock 2004, Roberts 2005). Camps are commonly located in closed forest, *Melaleuca* swamps or stands of *Casuarina* and are generally found near rivers or creeks (Ratcliffe 1932, Hall and Richards 2000). More open vegetation, including introduced species such as willows, poplars and pines, is used in southern and inland areas. Camps occur in vegetation ranging from continuous forest to remnants as small as 1 ha (Eby 2002, West 2002) and in southeast Queensland there is a propensity for camps to be situated in urban environments (Roberts 2005, 2006). Optimal roosting conditions have not been described, and the relative benefits of using sites of different floristic or structural traits need further investigation (Tidemann 1999, Peacock 2004, Roberts 2005).

Patterns of camp occupation vary, ranging from sites that are inhabited continuously to those that are inhabited only rarely (Parry-Jones 1993, Eby 1995). Although many camps have distinguishable seasonal cycles of occupation, annual variations can be extreme, and peak population size can exceed 50 000 (Ratcliffe 1931, Parry-Jones and Augee 1992, Parry-Jones 1993, Eby *et al.* 1999, Birt 2000). The number of flying-foxes in most camps is primarily related to the amount of food available within nightly commuting distance, although the annual reproductive cycle also influences the stability and size of populations (Ratcliffe 1931, Nelson 1965a, Parry-Jones and Augee 2001, Birt 2005).

Camps are used as day refuges by animals that forage in surrounding areas over several weeks, and as short-term stopover sites by migrating animals (Eby 1991, 1995, Tidemann and Nelson 2004). They are the sites of social behaviours associated with reproduction and maternal care (Nelson 1965b, Markus and Blackshaw 2002, Connell *et al.* 2006). For several weeks in late spring and summer they provide refuge for flightless young. Vocalisations associated with territorial disputes and mother–infant recognition are most concentrated pre-dawn, when animals return to camps (Markus and Blackshaw 2002). The majority of trees are occupied by groups of mixed-sex adults. These groups comprise a single male, who scent-marks and defends a territory shared by one or more females who may have dependent young (Nelson 1965b, Markus and Blackshaw 2002). Males mate with females that occupy their territories, and polygamy is common.

When undisturbed, camp locations are generally stable through time (Lunney and Moon 1997). This characteristic applies to camps that are used on an annual basis as well as those that are used infrequently. It is unclear whether the capacity of Grey-headed Flying-foxes to locate infrequently used sites is a result of a well-developed spatial memory in a long-lived species, or of the specific qualities of camps. For example, the Palm Grove in the Royal Botanic Gardens Sydney contained Grey-headed Flying-foxes for short periods in 1858, 1900, 1916, 1920 and 1989 (A. Leishman pers. comm., Royal Botanic Gardens Sydney). It is unlikely that this pattern of occupation can be attributed to memory alone. The site may have physical characteristics that are attractive to the species.

Grey-headed Flying-foxes alter the vegetation of camps, particularly those in small patches of remnant forest or public gardens (Hall 2002, Richards 2002). Roosting animals defoliate trees and break end branches. Concerns exist regarding the effects of periodic defoliation on photosynthesis and reproduction, the effects of reduced canopy cover on establishment rates of exotic weeds, and the effects of faecal material on soil nutrient levels (Floyd 1990, Pallin 2000). When camps occur in large remnants the animals move within the available space through time, providing opportunities for roost trees to recover (Hall 2002). Pressure on trees is more consistent in small remnants and gardens (Richards 2002, West 2002). Flying-fox camps have been incorporated into successful habitat regeneration programs in locations such as Wingham Brush, Bellingen Island, Currie Park (Lismore) and Gordon (Sydney) (e.g. Pallin 2000).

Breeding. Reproduction in Australian flying-foxes is seasonal and synchronous (Ratcliffe 1931, Nelson 1965b, O'Brien 1993). Grey-headed Flying-foxes give birth to single pups in October or November (Martin and McIlwee 2002) and lactate approximately to March. Mating behaviour commences in January and conception occurs in April or May (Nelson 1965b, O'Brien 1993, Martin *et al.* 1996). Individuals reach reproductive maturity in the second year of life. However, there is evidence that few females younger than three years successfully raise young to independence (McIlwee and Martin 2002). This low reproductive potential inhibits the capacity of Grey-headed Flying-foxes to recover from population declines (McIlwee and Martin 2002).

Relationship with other Australian flying-foxes. The range of Grey-headed Flying-foxes overlaps with those of two other flying-fox species, Black Flying-foxes and Little Red Flying-foxes. Grey-headed Flying-foxes and Black Flying-foxes are closely related species that share many behavioural and ecological characteristics. In regions where their ranges overlap, their diet lists are equivalent (Hall and Richards 2000, Birt 2005). There is no evidence that foraging behaviours differ, although this has not been a specific area of research. Both species are highly

colonial and share camp sites, within which they segregate spatially (Ratcliffe 1932, Nelson 1965a, McWilliam 1986, Birt and Markus 1999, Eby 2004). In addition, both species are synchronous, seasonal breeders and their annual reproductive cycles are closely aligned at subtropical latitudes (Nelson 1965b, Webb and Tidemann 1995, Martin *et al.* 1996). Grey-headed Flying-foxes and Black Flying-foxes hybridise and produce fertile offspring (G. O'Brien, University of New England unpublished data), although rates of hybridisation in wild populations are unknown (Webb and Tidemann 1995). Little Red Flying-foxes irregularly occupy camps used by Grey-headed Flying-foxes and also share diet plants (Ratcliffe 1931, Nelson 1965a, Birt and Markus 1999, Hall and Richards 2000). Their reproductive schedule is approximately six months out of phase with those of the other two species, and hybridisation with Grey-headed Flying-foxes has not been observed (Ratcliffe 1931, Nelson 1965b, O'Brien 1993, Martin *et al.* 1996).

Disease. During the mid-1990s Australian flying-foxes were identified as natural reservoirs of three newly-described zoonotic diseases: a rabies-like disease, Australian bat lyssavirus (ABL), and two paramyxoviruses, Hendra virus (also known as equine morbillivirus) and Menangle virus (Philbey *et al.* 1998, Halpin *et al.* 2000, Hanna *et al.* 2000). ABL is a fatal disease that is transmitted to humans through bites or scratches when the saliva of infected bats comes into contact with an open wound (Anon 1996). There is no evidence that this or other rabies-like viruses can be transmitted through urine or faeces. Effective pre-exposure and post-exposure protection from ABL is available through a vaccine that can be administered by medical practitioners. There is no evidence that the two paramyxoviruses can be transmitted directly from bats to humans, although each has been transmitted to humans by domestic animals (horses and pigs) (H. Field pers. comm., Queensland DPI, T. Ross pers. comm., NSW Agriculture). The disease risk to the general bat population and to humans remains an active area of research (e.g. Barrett 2004, Barrett *et al.* 2005).

3.2 Identification of threats

Habitat loss: High Priority Threat

Foraging habitat. Loss of foraging habitat is consistently identified as the primary threat to Grey-headed Flying-foxes (Ratcliffe 1931, Tidemann *et al.* 1999, Dickman and Fleming 2002, Eby and Lunney 2002). Reductions in nectar flow and fruit productivity occur as a result of forest clearance and degradation, reductions in floristic diversity, simplification of age structure from forestry practices, eucalypt dieback, drought, fire, climate change and the vulnerability of flowering and fruiting schedules to fluctuations in such factors as temperature and rainfall (Norton 1996, House 1997, Wilson and Bennett 1999, Law *et al.* 2000, Hughes 2003). Clearing of native vegetation for agriculture, forestry operations, plantation plantings, and development continue to reduce food production from eucalypts and other native species in the diet of Grey-headed Flying-foxes (Accad *et al.* 2001, Wilson *et al.* 2002, Queensland Department of Natural Resources and Mines 2005). Plant communities in coastal areas exposed to rapid increases in human population are severely affected (Catterall *et al.* 1997, Williams *et al.* 2001, Keith and Scott 2005).

The complexity of the habitat requirements of the Grey-headed Flying-fox—particularly its requirement for multiple, geographically dispersed populations of food trees—militates against conserving foraging habitats within a system of conservation reserves and leaves the species vulnerable to land-use decisions in unreserved forests (Parry-Jones 1993, Pressey 1994, Eby 1996, Tidemann and Vardon 1997). The clearing of habitat continues as a threat to the Grey-headed Flying-fox. Sources of clearing include that undertaken for rural development, and for urban and infrastructural development. Significant areas are also cleared to establish commercial hardwood and softwood plantations. Many habitats cleared in recent years are those that were retained under earlier land-use regimes because of a lack of agricultural potential (Catterall *et al.* 1997). The impacts of clearing are difficult to predict with accuracy and are unlikely to be manifested immediately owing to the irregular nature of eucalypt flowering.

Clearing of winter forage is a particular concern for the species. Few diet plants flower in winter, and those that flower reliably occur on coastal lowlands in northern New South Wales and southern Queensland (Eby *et al.* 1999, Eby and Lunney 2002). Grey-headed Flying-foxes congregate in these habitats. The vegetation communities that contain winter-flowering *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus robusta* (Swamp Mahogany) and *Melaleuca quinquenervia* (Five-veined Paperbark) have been substantially cleared, are poorly represented in conservation reserves, occur primarily on privately owned land and continue to be cleared at high rates (Catterall *et al.* 1997, Sattler and Williams 1999, Accad *et al.* 2001, Wilson *et al.* 2002, Keith and Scott 2005). Substantial tracts are zoned for residential development and rural use. For example, approximately 62% of the remaining swamp vegetation containing *M. quinquenervia* or *E. robusta* in the Coffs Harbour Local Government Area is zoned for land use that makes it available for development under the current Local Environment Plan (K. Taylor pers. comm., formerly of Coffs Harbour City Council). Studies of rates of clearing in southeast Queensland indicate that 0.7% to 1.1% of the remaining vegetation that contains key winter-flowering species is cleared each year (Accad *et al.* 2001, and unpublished data of the Queensland Herbarium).

There is evidence that spring forage is currently inadequate to provide reliable resources during critical periods in the reproductive cycle of Grey-headed Flying-foxes. The species is subject to recurring food shortages during late gestation, birth and early lactation; these shortages are associated with rapid weight loss in adults and poor reproductive success (Eby 1999, Collins 2000, Parry-Jones and Augee 2001). Spring food shortages have been reported over large portions of the range in six of the past 20 years, and more frequently in some local areas (Parry-Jones and Augee 2001, Teagle 2002, B. White pers. comm., NSW Agriculture). Their impact is exacerbated by associated increases in the use of commercial fruit crops, exposing Grey-headed Flying-foxes to destructive crop management regimes (Teagle 2002).

Roosting habitat. Loss of roosting habitat has also been identified as a threat to Grey-headed Flying-foxes (Tidemann *et al.* 1999, NSW Scientific Committee 2001). Camp vegetation has been exposed to the same historical patterns of clearing and degradation as has foraging habitat (Lunney and Moon 1997, Hall 2002). The roosting requirements of Grey-headed Flying-foxes are not known, nor are the impacts on the species of loss of long-term sites, which may be selected to meet specific requirements. The degradation of vegetation in small remnants threatens longevity and may also reduce the suitability of sites as camps (Pallin 2000).

Deliberate destruction associated with commercial horticulture: High Priority Threat

Grey-headed Flying-foxes have caused damage to cultivated fruit crops since the time of European settlement (Ratcliffe 1931, Tidemann *et al.* 1997). Crops grown in coastal areas north from the Illawarra are most commonly affected, although the increase in occurrence of Grey-headed Flying-foxes in eastern Victoria in the past 20 years has been associated with locally significant and sporadic crop damage in that region (I. Temby pers. comm., Victorian Department of Sustainability and Environment). Levels of damage vary considerably between localities and years (Teagle 2002). There is evidence that some relatively new crops such as lychees and some varieties of bananas sustain particularly high levels of damage (Rogers 2002, Teagle 2002).

Shooting is the method most commonly used to protect crops against flying-fox damage (Teagle 2002). The effectiveness of shooting as a crop protection method has not been quantified. Growers report that shooting provides adequate protection in years of low flying-fox pressure but is ineffective in years of severe attack (Comensoli 2002, Teagle 2002). The numbers of animals shot is unknown, but past estimates have been as high as 100 000 a year (Wahl 1994, Vardon and Tidemann 1995), with the majority of animals killed being pregnant and lactating females (Tidemann *et al.* 1997, Parry-Jones and Augee 2001). State-based permit systems regulate the kill (McKinnon *et al.* 2002, Waples 2002). A nationally agreed limit for damage mitigation licences to 1.5% of the population size was put in place in 2002, when Grey-headed

Flying-foxes were listed as Vulnerable under the EPBC Act (Department of the Environment and Heritage 2003a). Compliance monitoring is problematic, and substantial unlicensed deliberate destruction has been reported (Wahl 1994, Vardon and Tidemann 1995, Richards 2000, McLachlan 2002, Waples 2002, Ballard 2004). There are animal welfare issues associated with the unknown accuracy of shots fired at flying animals at night and the extent of injuries sustained by animals that are not killed immediately. The impact of deliberate destruction of flying-foxes in crops on the size and demographic structure of the population is unknown.

It should be noted that as of 1 September 2008, the Queensland Government no longer permits the killing of flying-foxes for crop protection. The move follows a finding by the Queensland Government's Animal Welfare Advisory Committee that shooting flying-foxes for crop protection is inhumane. A strategic compliance program will be undertaken to manage instances of illegal shooting.

Competition with Black Flying-foxes: Threat Priority Unknown

Ecological processes influence the distribution of species. The observed changes in the distribution of flying-fox species in Australia and the interaction of these flying-fox species are natural processes that are influenced by factors such as climate change. That is, the interaction between the Grey-headed and the Black Flying-fox is a natural process. Expansion of the southern limit of Black Flying-foxes has increased the area of overlap with Grey-headed Flying-foxes (Figure 4), and the movement of Black Flying-foxes into new areas has consistently been followed by an increase in abundance relative to that of Grey-headed Flying-foxes. This has occurred in floristically diverse regions east of the escarpment that provide continuous food and suitable camps for both species. There is no evidence that Black Flying-foxes and Grey-headed Flying-foxes use agonistic behaviours to compete directly for resources (N. Markus pers. obs., P. Eby pers. obs.). However, the increasing displacement of Grey-headed Flying-foxes suggests that indirect competition favours Black Flying-foxes.

The ongoing nature of shifts in the southern limit of Black Flying-foxes can be traced through studies conducted in the 1920s (Ratcliffe 1931), 1960s (Nelson 1965a) and 1990s (Eby and Palmer 1991, Eby 1995) and through surveys conducted from 1998 to 2004 (Eby *et al.* 1999, Eby 2004). In each study, range boundaries were defined by inspecting populations of communal roosts. Extra-limital sightings or vagrancy can confound assessments of range boundaries in highly mobile, migratory species such as flying foxes. In this summary, extra-limital sightings are defined by number of individuals, reproductive status and duration of stay. Sightings of < 50 non-breeding individuals or a single sighting of > 50 individuals of < 4 weeks duration are considered extra-limital and are not included in the assessment.

Between 1930 and 1960 the southern limit of the range of Black Flying-foxes moved south by approximately 300 km from the Mary River in Queensland to the Tweed River in New South Wales (Figure 4). In 1990 the southernmost camp used by the species was located 40 km farther south, at the mouth of the Richmond River. However, it is unclear whether this represented a shift in range, as camps located between the Richmond and Tweed rivers were not surveyed in the 1960s study. From 1990 to 2004 the southern limit of Black Flying-foxes shifted rapidly, by a total of about 350 km, to the Manning River. A dead neonate was found in Newcastle in 2005, and adults of both sexes and neonates have been recorded in the Newcastle camp since 2006. In that year, approximately 75 individuals, including breeding females and dependent young, were also observed roosting in the Royal Botanic Gardens Sydney. The southern limit had shifted a further 250 km in two years. In 2007 the population estimate in the Royal Botanic Gardens Sydney was 120. Small numbers of Black Flying-foxes (< 10) were recorded in the Kurnell camp in Sydney in February 2008. These sightings are not included in Figure 4. The NSW Scientific Committee made a final determination in August 2008 to de-list the Black Flying-fox from the schedules of the New South Wales *Threatened Species Conservation Act 1995*.

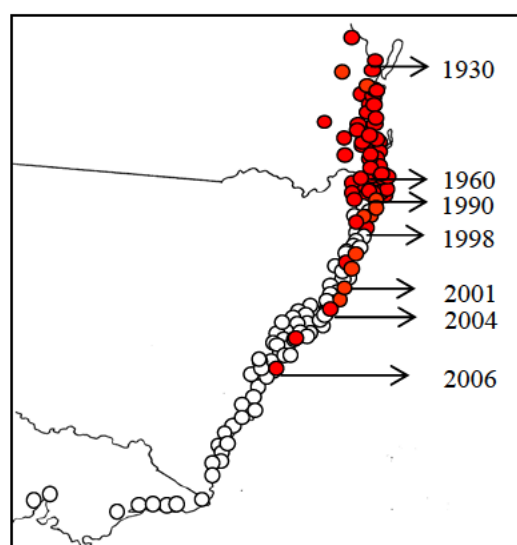


Figure 4: Timing and extent of southern extensions to the range of Black Flying-foxes

This map shows camps used by Black Flying-foxes during national surveys from 1998 to 2004, and the 2006 sightings in Newcastle and the Royal Botanic Gardens Sydney (filled circles). Open circles represent camps occupied by Grey-headed Flying-foxes and not Black Flying-foxes. Within the area of overlap, all camps used by Black Flying-foxes are also used by Grey-headed Flying-foxes.

Relative abundance of Black Flying-foxes. Expansions to the range of Black Flying-foxes have consistently foreshadowed an increase in the local abundance of the species relative to that of Grey-headed Flying-foxes. During the past 20 years the numbers of Grey-headed Flying-foxes relative to those of Black Flying-foxes have declined markedly in coastal areas north from the Clarence Valley and in the tablelands of southeast Queensland (Birt 2000, Hall 2002, Eby 2004, B. Thomson Queensland Environmental Protection Agency unpublished). In 1960, Black Flying-foxes were found in small numbers (50 to 500) in camps from Nambour, Queensland, to the Tweed River (Nelson 1965a). Camps in this region were not monitored in the 1990s study. However, more recent work documented a substantial escalation in the relative abundance of Black Flying-foxes in all camps in the area (Eby *et al.* 1999, Birt 2000, Eby 2004). The rate of increase in northern New South Wales has been particularly rapid in the past 10 years.

Negative public attitudes and conflict with humans: Medium Priority Threat

Conflict between humans and Grey-headed Flying-foxes is an ongoing and apparently increasing problem that particularly affects camps in coastal areas (Smith 2002, Tidemann 2002, West 2002). Conflict and negative perceptions of Grey-headed Flying-foxes can impact the population directly through harassment and deliberate destruction, or indirectly by inhibiting or impeding community support for conservation initiatives. In recent years the incidence of interactions between humans and Grey-headed Flying-foxes has apparently risen. A rapid increase in the human population of coastal Queensland and New South Wales has caused camps that were once isolated from human activities to be increasingly surrounded by urban and rural residential development (Smith 2002, West 2002, Coffs Harbour City Council 2004). The population size and continuity of occupation of camps in metropolitan areas have also increased (Birt *et al.* 1998, Hall 2002, Richards 2002, van der Ree *et al.* 2006). This trend has been associated with an increase in the density and diversity of food trees in the gardens and streetscapes of cities like Sydney and Melbourne, together with increasing pressures on Grey-headed Flying-foxes in non-urban landscapes from reductions in the availability of native forage and increasing competition from Black Flying-foxes (Birt *et al.* 1998, Hall and Richards 2000, Parry-Jones and Augee 2001, Hall 2002).

People living near camps are exposed to several annoyances, including both the noise from vocal communications of animals during the day and pre-dawn when they return from foraging and the pungent smell created by the dense concentration of animals. People in close proximity are also likely to be concerned about disease (Eby 1995, Tidemann 1999, Smith 2002). Active or aggressive disturbances (sometimes including deliberate destruction), have been used in attempts to remove animals from camps (Lunney and Moon 1997, Tidemann 1999, 2002, Hall

2002). Efforts to break the fidelity of Grey-headed Flying-foxes to specific camps have generally been unsuccessful. In the few situations where the animals have moved, ongoing programs of disturbance have been required to keep them away. An exception is the experience at the Royal Botanic Gardens Melbourne, where no ongoing disturbances have been required (S. Toop pers. comm., Victorian Department of Sustainability and Environment). It has not been possible to precisely pre-determine the locations of replacement roosts, and problems with conflict can shift to different sites (Hall 2002). There is a growing view that it is best to manage camps where they are and develop strategies to reduce their impact.

Electrocution on powerlines, entanglement in netting and on barbed-wire: Low Priority Threat

Grey-headed Flying-foxes are prone to accidental injury and death from various artificial obstacles. They are prone to electrocution on powerlines, particularly in urban areas, and increasing urbanisation of the population exposes larger proportions to electrocution (Tidemann 1999, K. Parry-Jones, University of Sydney unpublished data). Animals become entangled in fine gauge netting that is draped loosely over backyard fruit trees. Entanglement on barbed-wire affects animals in rural areas, although the incidence of this is unknown.

Climate change: Threat Priority Unknown

Climate change in the coming decades has the potential to affect food availability and heat-related mortality in Grey-headed Flying-foxes. Current models of climate change predict that mean maximum temperatures in southeast Australia will rise (Pittock and Wratt 2001). Many eucalypts have a narrow range of tolerance to temperature and rainfall, and the predicted levels of change are expected to impact distribution and reproduction (Hughes *et al.* 1996, Hughes 2003). Regional trends in honey yield have been identified as potential indicators of the impacts of climate change on biodiversity (Department of the Environment and Heritage 2003b). The occurrence of extreme temperatures is also predicted to rise. Exposure to high temperatures results in mortality in Grey-headed Flying-foxes (Parry-Jones 2000, Eby *et al.* unpublished, Welbergen *et al.* 2007). Mortality rates are low at ambient temperatures of 41 to 43.5°C but increase rapidly at temperatures > 43.5°C, particularly affecting flightless young.

Disease: Low Priority Threat

Grey-headed Flying-foxes are reservoirs of three recently-described zoonotic diseases (Field 2002). Australian bat lyssavirus (ABL) can cause clinical disease and mortality in Grey-headed Flying-foxes. The incidence of ABL in the species is low (< 1%). The virus appears to have evolved with the bats and generally is in equilibrium with the population (H. Field pers. comm., Queensland Department of Primary Industries). However, when flying-foxes undergo significant ecological stress, the incidence of ABL can increase to the point where the disease is no longer in equilibrium and the population is impacted. No clinical disease or mortality in flying-foxes is associated with Hendra virus or Menangle virus (H. Field pers. comm., Queensland Department of Primary Industries, T. Ross pers. comm., NSW Agriculture).

3.3 Areas and populations under threat

The processes that threaten Grey-headed Flying-foxes are most prevalent in coastal areas north from the Sydney Basin. Rates of forest clearing and modification are high in this region, as are rates of increase in the human population. The region supports large and varied commercial fruit growing operations, and it is experiencing a rapid increase in abundance of Black Flying-foxes. These coastal areas also support the greatest natural diversity of food plants and the most consistent presence of the species outside metropolitan areas. A range of management issues and responses have been explored and implemented in these areas, with varying degrees of success (see Nelson 2008, and Department of Environment and Climate Change 2008).

4 Objectives, criteria and actions

4.1 Recovery objectives and timelines

Overall objectives

The overall objectives of recovery are:

- to reduce the impact of threatening processes on Grey-headed Flying-foxes and arrest decline throughout the species' range
- to conserve the functional roles of Grey-headed Flying-foxes in seed dispersal and pollination
- to improve the standard of information available to guide recovery of the Grey-headed Flying-fox, in order to increase community knowledge of the species and reduce the impact of negative public attitudes on the species.

Specific objectives

Specific objectives to be met in the 5-year timeframe of this recovery plan are listed below, not in priority order. Initiatives to meet these objectives will incorporate principles of sustainable development and promote procedures to minimise significant adverse social and economic impacts, such as the use of environmental incentive schemes and equitable cost-sharing arrangements.

- *Objective 1.* To identify and protect foraging habitat critical to the survival of Grey-headed Flying-foxes throughout their range
- *Objective 2.* To protect and increase the extent of key winter and spring foraging habitat of Grey-headed Flying-foxes
- *Objective 3.* To identify roosting habitat critical to the survival of Grey-headed Flying-foxes
- *Objective 4.* To protect and enhance roosting habitat critical to the survival of Grey-headed Flying-foxes
- *Objective 5.* To substantially reduce deliberate destruction of Grey-headed Flying-foxes in fruit crops
- *Objective 6.* To reduce negative public attitudes toward Grey-headed Flying-foxes and reduce conflict with humans
- *Objective 7.* To increase public awareness and understanding of Grey-headed Flying-foxes and the recovery program, and to involve the community in recovery actions, where appropriate, to reduce the threat of negative public attitudes and conflict with humans
- *Objective 8.* To monitor population trends in Grey-headed Flying-foxes so as to monitor the species' national distribution and status
- *Objective 9.* To assess and reduce the impact on Grey-headed Flying-foxes of electrocution on powerlines and entanglement in netting and on barbed-wire
- *Objective 10.* To improve knowledge of the demographics and population structure of Grey-headed Flying-foxes in order to increase understanding of the ecological requirements of the species
- *Objective 11.* To increase the effectiveness and efficiency of recovery initiatives for Grey-headed Flying-foxes by working cooperatively with conservation and management programs with overlapping objectives to remove or reduce the impact of threatening processes on the species
- *Objective 12.* To maintain an effective Grey-headed Flying-fox National Recovery Team to oversee the implementation of the Grey-headed Flying-fox National Recovery Plan to remove or reduce the impact of threatening processes on the species.

- *Objective 13.* To provide long-term economic benefits associated with the protection of ecosystem services, promotion of sustainable forest management, improved crop protection regimes, promotion of sustainable agricultural practices and increased viability of some commercial fruit industries.

4.2 Performance criteria

The following performance criteria are to be used to assess achievement of the above objectives and are to be met in the 5-year life of this recovery plan:

- *Criterion 1.* Foraging habitat critical to survival of Grey-headed Flying-foxes identified and the extent of this habitat that is protected under conservation management programs increased
- *Criterion 2.* The extent of Grey-headed Flying-fox winter and spring foraging habitat that is protected under conservation management programs increased, and tree-planting and habitat rehabilitation programs to extend winter and spring foraging habitat implemented
- *Criterion 3.* Camps critical to the survival of Grey-headed Flying-foxes identified and mapped
- *Criterion 4.* The number of Grey-headed Flying-fox camps critical to survival that are protected under conservation management programs increased
- *Criterion 5.* Damage to orchard industries by Grey-headed Flying-foxes reduced and deliberate destruction in crops substantially reduced
- *Criterion 6.* Increase in uptake of effective non-lethal flying-fox control practices by orchard industries
- *Criterion 7.* Both negative public attitudes toward Grey-headed Flying-foxes and conflict with humans reduced
- *Criterion 8.* Educational material for increasing public awareness and understanding of Grey-headed Flying-foxes and the recovery program developed and circulated, and members of the general community involved in recovery actions
- *Criterion 9.* Methods for assessing abundance in Grey-headed Flying-foxes improved, error in abundance measures estimated, and population trends monitored
- *Criterion 10.* The incidence of Grey-headed Flying-fox electrocution on powerlines and entanglement in netting and on barbed-wire assessed and reduced
- *Criterion 11.* Knowledge of the demographics and population structure of Grey-headed Flying-foxes improved
- *Criterion 12.* Cooperative alliances formed with appropriate conservation programs
- *Criterion 13.* Strategic direction and coordination between State and Australian Government agencies for implementation of the Grey-headed Flying-fox National Recovery Plan.

4.3 Evaluation of performance

The recovery objectives seek to determine initial benchmarks to enable future monitoring and performance evaluation of the suggested recovery actions, and to track their effectiveness in recovering the Grey-headed Flying-fox. A recovery team will be established to manage and review the performance of the recovery plan. The team will evaluate success or failure against criteria set out in the plan. The recovery team will meet annually to discuss progress and, if necessary, to revise actions. Written reports evaluating performance against criteria will be provided to the Department of the Environment, Water, Heritage and the Arts after three and five years. The recovery team should include representatives of the conservation agencies of each of the three range States and of the Australian Government, representatives of primary stakeholders, and at least one person with scientific expertise suitable for evaluating the progress of research actions.

4.4 Actions for recovery

Actions for recovery of Grey-headed Flying-foxes are listed below. Some underlying principles of the actions are:

- Range-wide, integrated strategies of habitat protection are needed to conserve Grey-headed Flying-foxes. Priority habitats need to be identified and direct actions taken to incorporate the needs of the species into pre-existing mechanisms for protecting, enhancing and rehabilitating native vegetation, particularly on privately-owned land.
- Neither Grey-headed Flying-foxes nor commercial fruit industries are well served by current programs that aim to regulate deliberate destruction in crops. Grey-headed Flying-foxes are best protected from deliberate destruction in crops by eliminating their financial impact on commercial fruit industries and thereby removing the imperative to kill.
- Recovery of Grey-headed Flying-foxes cannot occur without wide community participation. In several areas, negative public attitudes toward the species act as an impediment to the recovery process. Strategic programs of public education and programs to reduce conflict are needed to address this problem.

Action 1: Identify and protect foraging habitat critical to the survival of Grey-headed Flying-foxes across their range

Objectives 1, 2, 7 and 11

Background. This set of actions aims to improve conservation outcomes for Grey-headed Flying-foxes by developing and implementing a range-wide, integrated strategy of habitat protection. Priority habitat will be identified and opportunities will be sought to protect priority habitat by using the range of instruments and procedures available under Federal, State and local government authorities. On privately-owned land, preference will be given to incentive-based programs and voluntary conservation arrangements. Integral to the process will be a program to educate land managers, decision-makers and the general public about the habitat requirements of Grey-headed Flying-foxes and to promote the biodiversity and economic benefits of conserving foraging habitats.

Action 1.1: Set priorities for protecting foraging habitat and generate maps of priority habitat for the Grey-headed Flying-fox

Priority 1

Action has commenced

- Set priorities for habitat protection on the basis of both importance to Grey-headed Flying-foxes and conservation status.
- Incorporate priorities into existing habitat maps.
- Identify areas of overlap between priority habitats for Grey-headed Flying-foxes and those of other threatened fauna and flora, particularly nectar- or fruit-feeding birds and mammals, and vulnerable and endangered vegetation communities.
- Inform appropriate staff of Department of the Environment, Water, Heritage and the Arts and State wildlife management and planning agencies of maps of ranked habitat, and provide copies as required.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$30,000	0	0	0	0	\$30,000

Action 1.2: Protect and enhance priority foraging habitat of the Grey-headed Flying-fox
Priority 1

Action has commenced

- Identify opportunities to protect and enhance priority habitats identified in Action 1.1 under instruments such as clearing regulations for native vegetation, State and Commonwealth threatened species legislation, forestry management plans, regional natural resource management plans, catchment management plans, local government environmental plans and development assessments, voluntary conservation agreements and Land for Wildlife programs.
- Particular emphasis should be placed on incorporating priority habitat on privately-owned land into available incentive-based or volunteer conservation programs.
- Promote protection and enhancement under these procedures through direct contact with appropriate authorities or individuals.
- Provide to authorities any background information or data they require for their decision-making processes (e.g. habitat definitions and maps of priority habitats). Material should be provided in a format appropriate to their systems. Broader biodiversity benefits, such as benefits to other threatened taxa, and economic benefits, such as implications for the fruit, forestry and apiary industries, should be highlighted in background material.
- Collaborate with other conservation initiatives.

Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$27,000	\$9,500	\$9,500	\$9,500	\$9,500	\$65,000

Action 2: Enhance winter and spring foraging habitat for Grey-headed Flying-foxes

Objectives 2, 5, 7 and 11

Background. Evidence of repeated food shortages during winter and spring indicates that inadequate productive foraging habitat exists in these seasons to sustain the current Grey-headed Flying-fox population. Pre-existing tree-planting and habitat restoration and rehabilitation programs provide vehicles for increasing the extent and viability of habitats productive in these seasons.

Action 2.1: Increase the extent and viability of foraging habitat for the Grey-headed Flying-fox that is productive during winter and spring

Priority 1

- Set regional priorities for tree-planting, restoration and rehabilitation work to increase the extent of, and protect the viability of, habitat containing plants important to Grey-headed Flying-foxes during winter and spring.
- Describe the broader biodiversity benefits of priority work, such as benefits to other threatened taxa, and the economic benefits, such as implications for the fruit, forestry and apiary industries.
- Develop material to promote priority plants to existing tree-planting and habitat restoration and rehabilitation programs, as well as to the agencies and instruments that support them, such as local government, catchment management authorities, natural resource management plans, and farm forestry operations.
- Promote priority plants for Grey-headed Flying-foxes by actions such as direct contact with individual agencies and groups and presentations at conferences.
- Collaborate with other conservation initiatives.

Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$70,000

Action 3: Identify, protect and enhance roosting habitat critical to the survival of Grey-headed Flying-foxes

Objectives 3, 4 and 7

Action 3.1: Establish and maintain a range-wide database of Grey-headed Flying-fox camps
Priority 2

Action has commenced

- Database to include information pertinent to management, including location, tenure, local government area, land-use zoning, species of flying-fox and history of use.
- Generate and circulate to relevant land management and planning authorities, researchers and interested public range-wide digital maps of camp localities, including point localities and shape files showing the boundary of the maximum area used by roosting animals. Include shape files of nominal buffer zones for limited development, as described in Section 2 of this recovery plan.
- Lodge the data with relevant State and Australian Government conservation agencies and put in place formal inter-agency data-sharing arrangements.

Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$15,000	0	\$10,000	0	\$10,000	\$35,000

Action 3.2: Improve knowledge of Grey-headed Flying-fox camp locations, particularly in inland areas

Priority 2

Action has commenced

- Undertake surveys of Grey-headed Flying-foxes that target regional areas and seasons where information is notably incomplete, such as inland areas during spring and summer.
- Promote public participation in surveys and reporting of camp locations.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$25,000	0	\$10,000	0	\$10,000	\$45,000

Action 3.3: Protect roosting habitat critical to the survival of the Grey-headed Flying-fox
Priority 1

Action has commenced

- Identify camps critical to the survival of Grey-headed Flying-foxes by using criteria set out in Section 2 of this recovery plan.
- Promote protection of camp vegetation under instruments such as local government environmental plans and development assessments, regional development plans, catchment management plans, forestry management plans, voluntary conservation agreements and Land for Wildlife programs.

- Promote the protection of management zones around camp vegetation, as described in Section 2 of this recovery plan.
- Develop information packages for local government planners and other land managers aimed at encouraging protection of camps and prohibiting inappropriate development in exclusion zones. Promote the value to humans of this approach. Include information on flying-fox biology, issues of community concern such as noise and disease, and summaries of recent management experiences at flying-fox camps (see Actions 5 and 6).
- State agencies to review the application of their relevant camp management policies by Year 5.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$14,000	\$12,750	\$12,750	\$12,750	\$12,750	\$65,000

Action 3.4: Determine the characteristics of roosting habitat for the Grey-headed Flying-fox
Priority 2

Action has commenced

- Conduct a program of research to explore the roles of characteristics such as floristic composition, vegetation structure, microclimate and landscape features in defining optimum roosting habitat.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	0	\$15,000	\$15,000	0	\$30,000

Action 3.5: Enhance and sustain the vegetation in camps that are critical to the survival of the Grey-headed Flying-fox
Priority 2

- Incorporate the results of Action 3.4 into management recommendations for camps.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	0	0	0	\$5,000*	\$5,000*

* Total action cost is undetermined, as it is contingent on Action 3.4. Cost estimate provided is for the dissemination of the findings of Action 3.4.

Action 3.6: Investigate the interactions between the Grey-headed Flying-fox and the Black Flying-fox
Priority 3

- Identify what is causing the change in the interaction between the Grey-headed Flying-fox and the Black Flying-fox in terms of distribution, and the potential implications for both species.
- Identify the level of threat this interaction poses for the Grey-headed Flying-fox.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	0	\$15,000	\$15,000	0	\$30,000

Action 4: Significantly reduce levels of deliberate Grey-headed Flying-fox destruction associated with commercial horticulture

Objectives 5, 6, 7, 10 and 11

Background. Grey-headed Flying-foxes cause damage to commercial fruit crops across all range States (Queensland, New South Wales and Victoria). The extent and severity of the damage varies from place to place and year to year. Licences to control Grey-headed Flying-foxes are currently issued to growers in New South Wales to mitigate commercial crop damage, within the bounds of a previously established national cull limit. A review of this practice is being undertaken in 2009 by an expert panel. Permits/licences to control Grey-headed Flying-foxes in commercial crops are not issued in Victoria. Queensland has in the past granted permits to shoot Grey-headed Flying-foxes subject to the national cull limit, but decided that it would grant no further permits from 1 September 2008. There is anecdotal evidence that Grey-headed Flying-foxes are illegally killed in the vicinity of commercial crops in all range States.

Population control by deliberate destruction is not considered to be an effective method of reducing crop damage in the long term and poses a threat to the recovery of the Grey-headed Flying-fox. The following set of actions is designed to assess the scale and pattern of crop damage and to develop locally appropriate solutions that will benefit both the commercial fruit growers and the Grey-headed Flying-fox.

Action 4.1: Identify the commercial fruit industries affected by the Grey-headed Flying-fox Priority 1

Action has commenced

Summarise pre-existing information to describe the fruit industries affected by Grey-headed Flying-foxes. Information is to be gathered as required to provide an information base for other actions under this recovery plan; to improve knowledge of the industry by State and Australian Government agriculture and wildlife management agencies; to set production benchmarks for comparisons of management techniques for Grey-headed Flying-fox damage; and to inform industry groups.

Data collected in this project should include:

- locations of commercial fruit-growing operations (denatured to a scale acceptable to industry for privacy purposes)
- types and varieties of fruit grown
- area of land under cultivation to each variety of fruit
- area of each variety currently under full exclusion netting or other highly effective methods of protection
- area of each variety protected with other methods
- production losses attributed to flying-foxes
- other information as required by economic analysts, researchers, agencies, and industry groups.

Detailed results are to be provided to stakeholders as identified above; summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Cost estimate: \$575,000 for Actions 4.1, 4.3, 4.4 and 4.5

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	*	*	*			

* = action implementation

Action 4.2: Develop and promote non-lethal measures to protect commercial crops from flying-fox damage

Priority 1

Action has commenced

In light of the patterns of crop damage and the threat posed to the Grey-headed Flying-fox population by legal and illegal deliberate destruction, as identified through the implementation of other actions in this recovery plan, State conservation and agriculture agencies will work with growers to develop and promote locally appropriate, non-lethal programs to protect commercial crops.

Appropriate programs should be developed in consultation with stakeholder groups. The approach taken may vary from State to State. Public support exists for instituting measures to support fruit growers in managing flying-foxes (Ballard 2004), and the approach is supported by both industry and conservation groups.

Economists at WWF Australia, working collaboratively on this issue with the NSW Farmers' Association and NSW Nature Conservation Council, have highlighted the need for further quantitative information to support the case for assistance. An important role of the recovery plan is to provide supporting information as required. Actions 4.1 to 4.8 address this issue.

In Queensland, assistance can be given to growers who meet the eligibility criteria to apply for Low Interest Productivity Loans that are available for the establishment and maintenance of orchard netting through the Queensland Rural Adjustment Authority's Development Loans scheme (see www.qraa.qld.gov.au). A similar scheme operates in NSW under the Rural Assistance Authority's Special Conservation Scheme for primary producers (see www.raa.nsw.gov.au).

The benefits to individual growers of such measures are apparent. However, there are also several public benefits in the form of increased food security, enhanced sustainability of various Australian fruit industries and more positive interactions between primary production and the rapidly increasing human population in rural and semi-rural areas. There are benefits to food security in Australia of maintaining geographically spread industries. In this case, there are benefits to protecting the viability of the range of commercial orchards in the southeast. Having industries that are widespread provides seasonal continuity of supply to consumers and reduces the impact of isolated events such as cyclones and hail storms.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	*	*	*	*	*	

* = action implementation

This action remains uncoded, as there are no data available upon which to estimate the cost.

Action 4.3: Systematically assess and document levels of flying-fox damage to the horticultural industry within the range of the Grey-headed Flying-fox

Priority 1

Action has commenced

Reliable information on the impact of flying-foxes on industry is required for these analyses. Current estimates of flying-fox damage to crops are based on anecdotal evidence; actual damage has not been measured or valued.

- Develop and trial methods to obtain reliable damage estimates.
- Estimate damage sustained by industries and the distribution of damage across fruit-growing areas.
- Conduct cost-benefit analyses of control methods (including density–damage relationships).

It is likely that crop-specific methods will need to be devised. Priority should be given to those crops and regional areas where incentive schemes are predicted to have the greatest conservation benefit (crops with low profit margins and high levels of damage by flying-foxes).

Cost estimate: \$575,000 for Actions 4.1, 4.3, 4.4 and 4.5

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	*	*	*			

* = action implementation

Action 4.4: Develop methods for rapid estimation of flying-fox damage to commercial fruit crops

Priority 1

Action has commenced

In order to monitor industry-wide levels and patterns of flying-fox damage, individual growers must be able to assess losses on their holdings. The methodologies developed in Action 4.3 to produce precise damage estimates are likely to be too labour-intensive to be of practical use to individual growers during harvest, and a method for rapid estimation is required.

- Develop a standard, practical sampling technique that will allow orchardists to accurately estimate damage to their crops at a sufficient level of precision to monitor trends. The sampling design should allow for differences in the frequency, timing and intensity of damage between regional areas and between different varieties of fruit to be measured.
- Conduct field trials to calibrate the method against more precise methods developed in Action 4.3.
- Provide training to growers so that methods are standardised within and across industries.
- Develop a centralised database, accessible by stakeholders, to which they can contribute their standardised data.
- Supervise the surveys and database, analyse results, make recommendations to improve successive samples, provide feedback to growers and write reports.
- Update sampling methods and designs to incorporate recommendations.

Cost estimate: \$575,000 for Actions 4.1, 4.3, 4.4 and 4.5

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	*	*	*			

* = action implementation

Action 4.5: Develop and implement a grower-based program to monitor trends in damage to fruit crops by flying-foxes

Priority 1

With active industry involvement, design and implement an annual sampling strategy to assess damage sustained to fruit crops from flying-foxes within the range of Grey-headed Flying-foxes, by using the rapid assessment technique developed under Action 4.4.

- Use results to monitor the performance of actions to reduce crop damage.
- Publish results in peer-reviewed journals.

Results to be made available to industry, State and Australian Government agriculture agencies, State and Australian Government wildlife management agencies, and those working to promote crop protection schemes; summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Cost estimate: \$575,000 for Actions 4.1, 4.3, 4.4 and 4.5

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	*	*	*			

* = action implementation

Action 4.6: Develop methods for monitoring trends in nectar availability at a landscape scale
Priority 3

An indirect relationship between levels of crop damage and the availability of native food—primarily nectar production—has been hypothesised since studies of flying-fox damage to fruit industries were first conducted. However, methods for directly monitoring changes in nectar availability have not been developed. These are needed to explain and potentially predict trends in crop damage in the absence of crop protection, and to promote the importance of actions to protect and enhance foraging habitat that is productive in seasons critical to the horticultural industry (Actions 1 and 2).

- Review existing indices and initiatives to develop indices of nectar production suitable for monitoring trends at the geographic scales appropriate for assessing food availability for Grey-headed Flying-foxes.
- Develop an index of nectar flow for use in monitoring trends.
- Monitor trends at appropriate times and scales to investigate relationships between alternative food availability and estimates of crop damage from Actions 4.3, 4.4 and 4.5.
- Incorporate results as a covariate in analyses of trends in crop damage.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	0	\$30,000	0	0	\$30,000

Action 4.7: Collect biological information on flying-foxes deliberately destroyed in crops
Priority 2

Action has commenced

The impact of deliberate destruction of Grey-headed Flying-foxes in fruit crops on the population size and demographic structure of the species is unknown. This action aims to improve understanding of the impact by assessing trends in the species, sex, age and reproductive status of animals killed on crops.

This will be conducted by:

- securing the support of growers
- developing a repeatable sampling strategy for assessing trends, and collecting demographic information from populations at local camps and from animals killed by growers: species, sex, age, body condition and reproductive status (the sampling method must not require growers to handle or transport animals)
- providing feedback to growers and industry organisations and publishing results in peer-reviewed journals.

Additionally, this action may:

- compare the demographic characteristics of animals present in local camps with those of animals killed in crops
- assess differences between years, regional areas and type(s) of fruit grown
- assess covariate relationships with estimates of crop damage and estimates of population size in local camps
- provide data on camp estimates to Action 4.3 to help with damage–density estimates.

Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$10,000	\$10,000	\$10,000	0	0	\$30,000

Action 4.8: Assess damage to fruit crops in Victoria by the Grey-headed Flying-fox
Priority 1

The damage to Victorian fruit crops by flying-foxes has reportedly increased in association with the increase in occupation of camps in Melbourne and Geelong. Targeted effort is needed to better understand patterns of damage in this region; provide information to local fruit growers; inform Department of Sustainability and Environment field staff; and encourage uptake of non-lethal protection methods.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$15,000	\$	\$	0	0	\$15,000

Action 5: Provide information and advice to managers, community groups and members of the public that are involved with controversial flying-fox camps

Objectives 6, 7 and 11

Background. This action aims to provide active support to those involved with managing conflict with humans at flying-fox camps by providing summary information on the outcomes of past experiences; developing and providing management guidelines; developing and providing educational resources for affected communities; and conducting research to fill in important knowledge gaps.

Action 5.1: Review and evaluate recent management activities at flying-fox camps
Priority 2

- Engage an independent person with wildlife-management expertise to formally review management activities at flying-fox camps in recent years, including assessments of effectiveness, effort, cost and community responses. Practices being reviewed should include habitat management and public education, as well as direct wildlife management.
- Publish the results in a peer-reviewed journal.
- Produce a summary document, including case studies, for circulation to relevant agencies and affected people.

Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$30,000	0	0	0	0	\$30,000

Action 5.2: Develop guidelines to help land managers dealing with controversial flying-fox camps
Priority 2

Incorporate the outcomes from Action 5.1, the policies of State wildlife management agencies (e.g. Department of Environment and Climate Change 2007, Department of Sustainability and Environment 2005), the experiences of local government and further input from experienced individuals into guidelines for those charged with managing controversial flying-fox camps.

Guidelines may include:

- decision trees for assessing available management options
- material to help develop management plans for camps that are currently, or are likely to become, sites of conflict
- material to promote the use of management zones, where appropriate, to limit human interactions with roosting animals
- specific recommendations for managing camps identified as critical to the survival of the species.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	\$30,000	0	0	0	\$30,000

Action 5.3: Develop materials for public education and provide them to land managers and local community groups working with controversial flying-fox camps

Priority 2

Action has commenced

- Highlight the status of the species, the reasons for flying-fox presence in urban centres, the reasons for their decline, the management challenges that result, and the need to find a balance between protecting the species and minimising the impacts on the community.
- Make use of material produced under Action 6.1, as appropriate.
- Develop additional education resources as needed, including summaries of outcomes of Actions 5.1 and 5.4 in formats appropriate for public dissemination.

Cost estimate: see Action 6.1

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	*	*	*	*	*	

* = action implementation

Action 5.4: Assess the impacts of Grey-headed Flying-fox camps on water quality

Priority 3

Action has commenced

Communities adjacent to camps often perceive that streams or water bodies may be adversely affected because of close proximity to a flying-fox camp.

- Monitor water quality in waterways adjacent to flying-fox camps and in roof-collected water at residences near camps.
- Publish results in a peer-reviewed journal.
- Provide the results to land managers and the community, and post on a website.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total				\$20,000		\$20,000

Action 6: Produce and circulate educational resources to improve public attitudes toward Grey-headed Flying-foxes, promote the recovery program to the wider community and encourage participation in recovery actions

Objectives 6, 7 and 11

Background. The actions for recovery in this plan will take place across a large geographic area and have the potential to involve individuals and groups with a range of interests. Negative public attitudes toward the species act as an impediment to community support for the recovery process. Various studies of public attitudes toward Grey-headed Flying-foxes have concluded that programs of public education are the most appropriate means of improving attitudes and involving the community in conservation initiatives (Ford 2002, Lunney *et al.* 2002, Ballard 2004). It is important that the material presented to the public be accurate, credible and easy to access. Systems for circulating the material must have the capacity to reach a wide audience.

This action aims to provide educational resources of a uniform standard to support existing programs of public education (e.g. through community groups, State agencies and non-government organisations); to make information about Grey-headed Flying-foxes, the recovery plan and its progress available to the general public and people involved with the species; and to encourage community participation in appropriate recovery actions.

Action 6.1: Provide educational resources regarding the Grey-headed Flying-fox

Priority 1

Action has commenced

- Develop a comprehensive strategy of public education.
- Scrutinise the existing educational material relevant to Grey-headed Flying-foxes and secure permission for its distribution.
- Identify gaps and produce original material to fill the gaps.
- Establish central points of distribution in each range State.
- Provide the other actions under this recovery plan with comprehensive lists of the educational resources available under this action, and exchange resources.
- Produce regular newsletters to inform the public of the recovery plan, its progress, and opportunities for participation in actions.
- Create a website to promote the Grey-headed Flying-fox Recovery Plan and circulate information.
- Form cooperative alliances and exchange materials and information with other conservation and management programs.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$18,000	\$9,250	\$9,250	\$9,250	\$9,250	\$55,000

Action 6.2: Monitor public attitudes towards flying-foxes

Priority 2

- Conduct a survey of public attitudes to flying-foxes for comparison with the results of Ballard (2004).
- Expand the area surveyed to cover the range of Grey-headed Flying-foxes.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	0	0	0	\$30,000	\$30,000

Action 7: Monitor population trends for the Grey-headed Flying-fox**Objectives 7, 8 and 11**

Background. A program is needed to monitor population trends and assess the effectiveness of recovery actions. To achieve these aims, the method for assessing population size must reliably detect relatively small shifts and repeat estimations must be made at sufficient frequency to provide an understanding of the natural fluctuations that occur (Pople 2003). Actions are needed to assess the precision of methods, determine confidence intervals, increase precision as required to meet aims, and collect data of known quality at regular intervals. It is necessary to either validate and refine the current technique or develop a different methodology. Any new methodology must be cost-effective, verifiable and repeatable, and it must attract the confidence of stakeholders.

*Action 7.1: Review and improve methods used to assess population size for the Grey-headed Flying-fox**Priority 1**Action has commenced*

The following work should be overseen or reviewed by a person with expertise in field and statistical methods for monitoring population trends:

- review recommendations made to improve population monitoring for Grey-headed Flying-foxes and implement key recommendations (e.g. Pople 2003)
- conduct field trials to improve precision of estimations of proportions of species in shared camps
- conduct field trials to improve precision of estimations of population size in camps not suited to exit counts
- explore alternative sampling methods (e.g. distance sampling; Clancy and Einoder 2004) and conduct field trials to assess such factors as precision, repeatability and feasibility.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$25,000	\$25,000	0	0	0	\$50,000

*Action 7.2: Monitor population trends for the Grey-headed Flying-fox**Priority 1*

Conduct periodic range-wide assessments of population size of the Grey-headed Flying-fox, consistent with maintaining the expertise and enthusiasm of volunteers. The assessments should use the count method employed in previous years (Eby 2004) until such time as it can be updated to incorporate outcomes and recommendations from Action 7.1.

Results are to be provided to State and Australian Government wildlife agencies. Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$51,750	0	\$51,750	0	\$51,500	\$155,000

Action 8: Assess the impacts on Grey-headed Flying-foxes of electrocution on powerlines and entanglement in netting and barbed wire, and implement strategies to reduce these impacts

Objectives 6, 7, 9, 10 and 11

Background. The incidence of deaths or injuries to Grey-headed Flying-foxes from electrocution and entanglements is unknown. Actions are needed to increase public awareness, encourage reporting, develop methods for monitoring trends and identify and implement mitigation programs. This action requires the active involvement of community groups, such as animal rehabilitation organisations, and the general public.

Action 8.1: Assess the impacts on Grey-headed Flying-foxes of electrocution on powerlines and entanglement in netting and barbed wire, and implement strategies to reduce these impacts
Priority 3

- Review available information on the incidence of deaths and injuries to Grey-headed Flying-foxes from electrocution and entanglement.
- Review the remedial measures available to reduce impacts on wildlife of electrocution and entanglement, and promote those that are appropriate to Grey-headed Flying-foxes.
- Establish systems for direct reporting of electrocutions and entanglements by the public, with State-based collation and information sharing.
- Establish public awareness campaigns appropriate to the significance of the threat.
- Monitor trends as required.
- Form cooperative alliances with other conservation and management programs.

Summary information is to be incorporated into actions under this recovery plan to inform and educate stakeholders and the general public.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$10,000	\$2,500	\$2,500	\$2,500	\$2,500	\$20,000

Action 9: Oversee a program of research to improve knowledge of the demographics and population structure of the Grey-headed Flying-fox

Objectives 6, 7, 8, 9 and 10

Background. The list of proposed research topics below aims to clarify population structure in Grey-headed Flying-foxes and describe the demographics of the population. These topics are not covered in actions to reduce threats. However, a better understanding of each would greatly help with assessing the impacts of threats and developing efficient conservation strategies.

Action 9.1: Investigate the determinants of sedentary or transient status of Grey-headed Flying-foxes
Priority 3

A comparison of patterns of genetic relatedness, sex, age, etc., between sedentary and transient animals.

Cost estimate: \$180,000 for Actions 9.1 to 9.3

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total			*	*	*	

* = action implementation

Action 9.2: Investigate between-year fidelity of individual Grey-headed Flying-foxes to seasonal camps

Priority 3

A telemetry and behavioural study of individuals in camps with seasonal (not continuous) patterns of occupation, allowing comparisons to be drawn with similar studies that have confirmed between-year fidelity of migratory animals to continuously occupied camps.

Cost estimate: \$180,000 for Actions 9.1 to 9.3

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total			*	*	*	

* = action implementation

Action 9.3: Investigate genetic structure within Grey-headed Flying-fox camps

Priority 3

An investigation of levels of relatedness within and between members of adult groups, occupants of individual trees, etc.

Cost estimate: \$180,000 for Actions 9.1 to 9.3

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total			*	*	*	

* = action implementation

Action 9.4: Investigate patterns of Grey-headed Flying-fox juvenile dispersal

Priority 3

A study of the dispersal behaviour and specific habitat requirements of juveniles.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	0	0	\$22,500	\$22,500	0	\$45,000

Action 9.5: Investigate the age structure and longevity of Grey-headed Flying-foxes

Priority 2

Action has commenced

A project to support and build on the results of current research (Divljan *et al.* 2006) and provide baseline information for interpreting data collected in Actions 7.2 and 8.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$10,000	\$10,000	0	0	0	\$20,000

Action 10: Maintain a National Recovery Team to oversee the implementation of the Grey-headed Flying-fox National Recovery Plan

Objectives 11 and 12

Action 10.1: Grey-headed Flying-fox National Recovery Team to undertake an annual review of the national recovery plan's implementation

Priority 1

With three range States for the Grey-headed Flying-fox, and with the species being listed nationally as a threatened species, implementation of the recovery program will require strong collaboration and coordination. A National Recovery Team will be established to manage and review the performance of the recovery plan (see Section 4.3). The National Recovery Team should include representatives of the government conservation agencies of Queensland, New South Wales and Victoria and Australia, representatives of primary stakeholders and at least one

person with suitable scientific expertise. An annual convenor of the recovery team should be assigned from the relevant State and Australian Government conservation agencies on a rotational basis. The National Recovery Team will meet annually to review the progress of the recovery plan's implementation against the criteria as set out in the plan and revise actions as necessary. A summary of the results of each review are to be reported to the relevant State and Australian Government conservation agencies, and to the general public. A written report evaluating performance against criteria will be provided to the Department of the Environment, Water, Heritage and the Arts after three and five years.

Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Total	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$55,000

5 Management practices

The recovery of Grey-headed Flying-foxes is primarily dependent on the protection and rehabilitation of foraging habitat and the expansion of forested areas that are productive during winter and spring. Management practices that destroy significant foraging habitats, or alter them to the extent that their productivity or suitability to the species is diminished, will have an adverse impact. In particular, clearance of key winter or spring habitats should be avoided, as should practices that reduce volumes of nectar available to Grey-headed Flying-foxes during those seasons. Important winter and spring habitats include vegetation communities that contain *Eucalyptus tereticornis*, *E. albens*, *E. crebra*, *E. fibrosa*, *E. melliodora*, *E. paniculata*, *E. pilularis*, *E. robusta*, *E. siderophloia*, *Banksia integrifolia*, *Castanospermum australe*, *Corymbia citriodora citriodora*, *C. eximia*, *C. maculata* (south from Nowra), *Grevillea robusta* and *Melaleuca quinquenervia*.

Management practices in fruit crops that expose Grey-headed Flying-foxes to deliberate destruction will also be detrimental to the species. In principle, the impact of these practices is curtailed by the current cull limit system that limits the licensed range-wide take. However, regulatory problems need to be addressed in New South Wales, Queensland and Victoria—particularly compliance with licence conditions and issues associated with unlicensed deliberate destruction.

Management practices to reduce conflict at controversial camps should be implemented. Every attempt should be made to resolve conflict through mediation and public education. Ideally, site management plans should be developed in conjunction with the community. Plans should include both long-term and short-term strategies for ameliorating conflict. Land management authorities should identify camps that are potential sites of conflict and initiate programs of public education to reduce the potential for future disputes. Where concerns have been raised, authorities should respond rapidly by providing advice and information to those involved. Attempts to remove flying-foxes from camps are not recommended, particularly at camps identified as critical to survival. In many cases, problems develop as a result of land-use planning that encourages inappropriate human development close to flying-fox camps. Where the option still exists, limitations should be placed on developments that can occur within approximately 300 m of flying-fox camps.

6 Duration and costs

6.1 Duration and costs

It is anticipated that the recovery process for the Grey-headed Flying-fox will take longer than the 5-year life of this recovery plan. Five years after the date of publication of the plan, its implementation and the effectiveness of its actions are to be reviewed, and its performance formally evaluated, by the Australian Government Department of the Environment, Water, Heritage and the Arts in conjunction with the Environmental Protection Agency (Qld), the Department of Environment, Climate Change and Water (NSW) and the Department of Sustainability and Environment (Vic). The timing and costs for each action proposed to support the recovery objectives are provided in Table 2. The total cost to implement this plan is estimated to be at least \$1,715,000 over five years, plus as-yet-undetermined costs for developing and promoting measures to reduce the deliberate destruction of flying-foxes associated with commercial horticulture (Action 4.2).

6.2 Resource allocation

The actions proposed in this recovery plan build upon the Action Plan for Australian Bats (Environment Australia 1999), on expert knowledge of the species, and on research undertaken to date. At least 16 actions of this recovery plan are already under way.

The estimated cost of the plan comprises temporary project officer contracts, research/consultant contracts, funding contributions for student research projects (Honours, Masters and PhD) and in-kind contributions. Two actions cannot be fully costed—either they are contingent on the outcomes of other actions, or the details of the action and how it is to be implemented are yet to be determined. High-priority actions are to be initiated in the early phase of the plan's implementation, and often they span the full five years of the plan.

The efficient and effective use of resources has been considered when developing this recovery plan, and the recommended actions build on the knowledge obtained from previous and ongoing research projects, thus maximising the efficiency of the resources already committed to the conservation of the Grey-headed Flying-fox. The national cooperative approach between the Australian Government and the Queensland, New South Wales and Victorian State governments for the management and conservation of the Grey-headed Flying-fox continues, facilitating linkages that result in efficient resource use and avoid unnecessary duplications.

All actions have a cost, although many will be met through in-kind contributions or recurrent funding. The major costs of the plan are for research actions, a number of which are already under way. In-kind contributions will continue to be provided by the Australian Government Department of the Environment, Water, Heritage and the Arts in conjunction with Environmental Protection Agency (Qld), Department of Environment, Climate Change and Water (NSW) and the Department of Sustainability and Environment (Vic), building on the existing conservation programs. Additional, as-yet-unsecured, funds will be required to implement this recovery plan.

Actions to protect foraging habitat of the Grey-headed Flying-fox will confer benefits on both the numerous plant communities and the individual plant species with which this animal interacts, and on other nectar- and fruit-feeding bats, birds and mammals. Actions to protect the roosting habitat of the Grey-headed Flying-fox will additionally benefit other flying-fox species that share communal camps. Actions to reduce deliberate destruction of flying-foxes in commercial fruit crops via the introduction of alternate crop management techniques will also benefit other native species that damage crops. See Table 1 for the list of species to benefit from actions to recover the Grey-headed Flying-fox.

Table 2: Summary of actions

Actions for recovery are listed below, along with an indication of their priority and the years in which they should be carried out.

Priorities are set on a scale of 1 to 3, with 1 indicating the highest priority.

Years 1 to 5 represent years in the duration of the recovery plan.

Action	Priority	Year 1	Year 2	Year 3	Year 4	Year 5	Total cost
Action 1. Identify and protect foraging habitat critical to the survival of Grey-headed Flying-foxes across their range							
Action 1.1 Set priorities for protecting foraging habitat and generate maps of priority habitat for the Grey-headed Flying-fox	1	\$30,000					\$30,000
Action 1.2 Protect and enhance priority foraging habitat for the Grey-headed Flying-fox	1	\$27,000	\$9,500	\$9,500	\$9,500	\$9,500	\$65,000
Action 2. Enhance winter and spring foraging habitat for Grey-headed Flying-foxes							
Action 2.1 Increase the extent and viability of foraging habitat for the Grey-headed Flying-fox that is productive during winter and spring	1	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$70,000
Action 3. Identify, protect and enhance roosting habitat critical to the survival of Grey-headed Flying-foxes							
Action 3.1 Establish and maintain a range-wide database of Grey-headed Flying-fox camps	2	\$15,000		\$10,000		\$10,000	\$35,000
Action 3.2 Improve knowledge of Grey-headed Flying-fox camp locations, particularly in inland areas	2	\$25,000		\$10,000		\$10,000	\$45,000
Action 3.3 Protect roosting habitat critical to the survival of the Grey-headed Flying-fox	1	\$14,000	\$12,750	\$12,750	\$12,750	\$12,750	\$65,000
Action 3.4 Determine the characteristics of roosting habitat for the Grey-headed Flying-fox	2			\$15,000	\$15,000		\$30,000

Action	Priority	Year 1	Year 2	Year 3	Year 4	Year 5	Total cost
Action 3.5 Enhance and sustain the vegetation in camps that are critical to the survival of the Grey-headed Flying-fox	2					\$5,000	\$5,000 Total cost undetermined: contingent on Action 3.4. Cost is for the dissemination of findings of Action 3.4.
Action 3.6 Investigate the interactions between the Grey-headed Flying-fox and the Black Flying-fox	2			\$15,000	\$15,000		\$30,000
Action 4. Significantly reduce levels of deliberate Grey-headed Flying-fox destruction associated with commercial horticulture							
Action 4.1 Identify the commercial fruit industries affected by the Grey-headed Flying-fox	1	*	*	*			Funding from Actions 4.3 to 4.5
Action 4.2 Develop and promote non-lethal measures to protect commercial crops from flying-fox damage	1	*	*	*	*	*	Uncosted * denotes time of implementation
Action 4.3 Systematically assess and document levels of flying-fox damage to the horticultural industry within the range of the Grey-headed Flying-fox	1	*	*	*			\$575,000 * Denotes time of implementation
Action 4.4 Develop methods for rapid estimation of flying-fox damage to commercial fruit crops	1	*	*	*			
Action 4.5 Develop and implement a grower-based program to monitor trends in damage to fruit crops by flying-foxes	1	*	*	*			
Action 4.6 Develop methods for monitoring trends in nectar availability at a landscape scale	3			\$30,000			\$30,000
Action 4.7 Collect biological information on flying-foxes deliberately destroyed in crops	2	\$10,000	\$10,000	\$10,000			\$30,000
Action 4.8 Assess damage to fruit crops in Victoria by the Grey-headed Flying-fox	1	\$15,000					\$15,000

Action	Priority	Year 1	Year 2	Year 3	Year 4	Year 5	Total cost
Action 5. Provide information and advice to managers, community groups and members of the public that are involved with controversial flying-fox camps							
Action 5.1 Review and evaluate recent management activities at flying-fox camps	2	\$30,000					\$30,000
Action 5.2 Develop guidelines to help land managers dealing with controversial flying-fox camps	2		\$30,000				\$30,000
Action 5.3 Develop materials for public education and provide them to land managers and local community groups working with controversial flying-fox camps	2						Funding from Action 6.1
Action 5.4 Assess the impacts of Grey-headed Flying-fox camps on water quality	3				\$20,000		\$20,000
Action 6. Produce and circulate educational resources to improve public attitudes toward Grey-headed Flying-foxes, promote the recovery program to the wider community, and encourage participation in recovery actions							
Action 6.1 Provide educational resources regarding the Grey-headed Flying-fox	1	\$18,000	\$9,250	\$9,250	\$9,250	\$9,250	\$55,000
Action 6.2 Monitor public attitudes towards flying-foxes	2					\$30,000	\$30,000
Action 7. Monitor population trends for the Grey-headed Flying-fox							
Action 7.1 Review and improve methods used to assess population size for the Grey-headed Flying-fox	1	\$25,000	\$25,000				\$50,000
Action 7.2 Monitor population trends for the Grey-headed Flying-fox	1	\$51,750		\$51,750		\$51,500	\$155,000
Action 8. Assess the impacts on Grey-headed Flying-foxes of electrocution on powerlines and entanglement in netting and barbed wire, and implement strategies to reduce these impacts							
Action 8.1 Assess the impacts on Grey-headed Flying-foxes of electrocution on powerlines and entanglement in netting and barbed wire, and implement strategies to reduce these impacts	3	\$10,000	\$2,500	\$2,500	\$2,500	\$2,500	\$20,000

Action	Priority	Year 1	Year 2	Year 3	Year 4	Year 5	Total cost
Action 9. Oversee a program of research to improve knowledge of the demographics and population structure of the Grey-headed Flying-fox							
Action 9.1 Investigate the determinants of sedentary or transient status of Grey-headed Flying-foxes	3			*	*	*	\$180,000 * Denotes time of implementation
Action 9.2 Investigate between-year fidelity of individual Grey-headed Flying-foxes to seasonal camps	3			*	*	*	
Action 9.3 Investigate genetic structure within Grey-headed Flying-fox camps	3			*	*	*	
Action 9.4 Investigate patterns of Grey-headed Flying-fox juvenile dispersal	3				\$22,500	\$22,500	\$45,000
Action 9.5 Investigate the age structure and longevity of Grey-headed Flying-foxes	2	\$10,000	\$10,000				\$20,000
Action 10. Maintain a National Recovery Team to oversee the implementation of the Grey-headed Flying-fox National Recovery Plan							
Action 10.1 Grey-headed Flying-fox National Recovery Team to undertake an annual review of the national recovery plan's implementation	1	\$11,000	\$11,000	\$11,000	\$11,000	\$11,000	\$55,000
TOTAL							\$1,715,000

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From: s47F [REDACTED]@yahoo.com.au]
Sent: Wednesday, 13 February 2013 3:46:11 PM
To: Feedback Address For Web Page
Subject: RE FLYING FOXES

Hello,

It is my preference that you do not remove the bats and that you do not remove their habitat.

Best Wishes
s47F [REDACTED]

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RESPONSE 1

From: s47F [redacted] com]
Sent: Thursday, 17 January 2013 8:52:53 PM
To: Feedback Address For Web Page
Subject: Draft Grey-headed Flying-fox Roost Site Management and Action

Dear Sir or Madam

I am writing to comment on the Draft Grey-headed Flying-fox Roost Site Management and Action. Please do not relocate them and destroy their current roost site. I believe that the flying foxes need protection, not constant relocation and destruction of their habitat, no matter what the effect on the local human population.

Yours sincerely

s47F

Albert Park VIC 3206

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From: s47F [redacted]@gmail.com]
Sent: Tuesday, 12 February 2013 12:47:05 PM
To: Feedback Address For Web Page
Subject: Grey-headed fruit bats

Thanks for the opportunity to contribute to the discussion on fruit bats in Bairnsdale.

My understanding is that the fruit bat colony is in Bairnsdale because of the huge reduction in native habitat for these animals, which is rain forest.

Some years ago there was a program to replant rainforest species in cleared gullies on farmland in East Gippsland. I believe this was instigated by Catchment Management. The reason for this was to create better filtration for water run-off to the Gippsland Lakes as a positive action to reduce nutrients from farmlands, there by addressing the algal bloom issue.

If this excellent scheme could continue, the fruit bat habitat could be re-instated.

This is a long term solution, but the broader benefits are obvious. The plantings could be done by Landcare groups, Conservation Management groups, private land-holders and other interested parties.

Land management underlies all our wildlife concerns.

Regards

s47F [redacted]

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dwaDF

From: s47F [redacted]@bigpond.com
Sent: Monday, 18 February 2013 11:12:51 AM
To: Feedback Address For Web Page
Subject: grey headed flying foxes

Dear East Gippsland Council,
I MUST email you to strongly oppose this ILLEGAL action to remove the breeding habitat of a highly endangered species actually PROTECTED under federal LAW... This species is listed as vulnerable to extinction FEDERALLY and this action you are proposing is liable to fines and JAIL terms if trees are felled,. This action shows how backwards this council is as in Melbourne and most likely other cities, vulnerable species have been severely compromised due to clearing of vegetation necessary to the survival of this species, I could mention the helmeted honeyeater, whose habitat and cover was removed under the guise of removing the non native vegetation, and then it was found the birds gone...no cover, no birds.
I realise there are a few ignorant people who dislike wildlife and want all wildlife eradicated from urban areas but in this day and age, the survival of such an important species and its loss is detrimental to OUR survival. THIS IS A BREEDING COLONY OF ENDANGERED MAMMALS we MUST protect them. I work in tourism, and am also a member of the Australian Bat Society, and have myself directed over 50 people to observe and delight in our resident breeding colony.

THIS ACTION IS ILLEGAL UNDER THE EPBC ACT 1999 AND IS DISGRACEFUL.

Yours sincerely,

s47F [redacted] ..registered wildlife shelter, member ABS, WCN

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From: s47F [redacted]@wideband.net.au]
Sent: Friday, 15 February 2013 4:11:22 PM
To: Feedback Address For Web Page
Subject: Grey Head flying fox management plan FEEDBACK from s47F [redacted]

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EPBC 2009/501

East Gippsland Shire Council Natural Resources Management, Bairnsdale /Vic/ Poplar Tree Removal
Program - Grey Headed Flying Fox Zone

MANAGEMENT PLAN FEEDBACK FROM s47F

Buchan 3885
0351 559498

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EPBC 2009/501

East Gippsland Shire Council Natural Resources Management, Bairnsdale /Vic/ Poplar Tree Removal Program - Grey Headed Flying Fox Zone

Proposed removal of poplars along Mitchell River, habitat of grey-headed flying fox.
Submission from s47F Buchanan 3885 - ratepayer of this shire and owner of a number of properties in the City of Bairnsdale.

I hereby lodge objection to Council's proposal to remove poplar trees along the Mitchell River which form an integral habitat for the threatened species, the grey-headed flying fox.

East Gippsland Shire has gone to considerable expense to promote this region as *Naturally Magic* and has a moral and statutory responsibility to respect threatened native species. The grey-headed Flying Fox is listed as threatened under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

And while the poplar trees are not a native species, they provide the necessary requirements for the flying fox of height, shelter etc that once would have been available before their original habitat of rainforest type trees were destroyed.

In some other places, flying foxes/bats provide a feature of tourism to their areas with guided educational observation of the unique creatures. This would be a true expression of *Naturally Magic* rather than removal of the animals' habitat with the likelihood that most will not survive - and those individuals that may, will be dispersed from their community and will resort to equally unpopular roosting trees.

The private residence that is closest to the present colony's roosting area should be purchased for scientific use and also used as a tourist focus for observation. The cost of purchase of the building could possibly be alleviated by grants and may be no more expensive than the three year tree removal plan.

The current proposal does not meet the requirement of 'no or minimal impact.' It would result in loss of suitable habitat and jeopardize the survival of a unique threatened species. In no circumstances should the poplars be removed until alternative habitat of suitable height is grown.

s47F

Buchan 3885

From: s47F [mailto:s47F@activ8.net.au]
 Sent: Friday, 15 February 2013 11:42:49 AM
 To: Feedback Address For Web Page
 Subject: Fw: Submission re. Removal of poplar trees affecting grey-headed flying fox
 [SEC=UNCLASSIFIED]

EPBC 2009/501

East Gippsland Shire Council Natural Resources Management, Bairnsdale /Vic/ Poplar Tree Removal Program
 - Grey Headed Flying Fox Zone

Proposed removal of poplars along Mitchell River, habitat of grey-headed flying fox.
 Submission from David Eagleson, Buchan 3885 - ratepayer of this shire and owner of a number of properties in the City of Bairnsdale.

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The current proposal does not meet the requirement of 'no or minimal impact.' It would result in loss of suitable habitat and jeopardize the survival of a unique threatened species. In no circumstances should the poplars be removed until alternative habitat of suitable height is grown.

s47F

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RESPONSE 6

From: s47F [redacted].com.au]
 Sent: Sunday, 10 February 2013 12:09:13 PM
 To: 'Editor Mallacoota Mouth'
 CC: 'Editor Mallacoota Mouth'; Feedback Address For Web Page; s47F @vnpa.org.au;
 friendsofmallacoota@gmail.com
 Subject: FW: Flying foxes

FLYING FOXES

11.2.2013

Just because one can see a large amount of flying foxes sometimes in the evening, this does not indicate an abundance of the species. It might only indicate that one is lucky to live in an area still frequented by these magnificent animals.

Figures indicate a steady and frightening decline in the overall number in Australia. Maybe educating the fruit-tree owners that the fruit bats only eat over-ripe fruit, that they are important to the regeneration of rainforest areas by propagating seeds during flying over these inaccessible forests etc, we might elicit more compassion for these wonderful, highly intelligent Australian animals?

We have a fluctuating colony on our property; however it is seasonal and unfortunately not a regular visitation; but ALWAYS very welcome.

Tourism alone should not be a reason to protect these creatures, but any help from all sites must be used to change the misapprehension that prevails and that condemns these native flying mammals to eventual final extinction.

Please, East Gippsland Shire and any other person in charge of Native Animal Protection, use your power to change the prevailing attitudes and encourage awareness as to how wonderful, exotic and unique a flying fox is in our environment. A little tolerance goes a long way.

s47F



s47F

Mallacoota VIC 3902

s47F

Galah mum feeding her baby.

From:

Please do circulate anything you want about the tragic state of these poor Flying Foxes, the more people who write to the East Gippsland Shire and the better.

Department of Sustainability, Environment, Water, Population and Communities

GPO Box 787

Canberra ACT 2601

RESPONSE 7

Warm wishes.

s47F

From: s47F @activ8.net.au
To: ctiv8.net.au
Subject:

Date: Fri, 8 Feb 2013 07:58:01 +1100

This is another case of DSE and Council taking action before they have undertaken any appropriate research, please read through what s47F has written her because these Flying Foxes need help from all of us or they will face the same fate as many other species of wildlife who just don't 'fit in', they'll be sacrificed!

Please send letters to the East Gippsland Shire and let them know you strongly disapprove of what they intend doing.

Thank you

s47F

Hi All,

There is a breeding colony of grey headed flying foxes at Bairnsdale in poplar trees along the bank of the Mitchell River in Bairnsdale. It is now threatened by the East Gippsland Shire.

This letter is first to request submission to the federal process. http://www.environment.gov.au/cgi-bin/epbc/epbc_ap.pl?name=current_referral_detail&proposal_id=5017

In 1999 the species was classified as "Vulnerable to extinction" in The Action Plan for Australian Bats,^[20] and has since been protected across its range under Australian federal law. As of 2008 *the species is listed as "Vulnerable"* on the IUCN Red List of Threatened Species. from the wiki article http://en.wikipedia.org/wiki/Grey-headed_flying_fox#cite_note-17

The grey-headed flying fox summer nursery colony has been on the Mitchell River Bank for 10 years. This species, despite what DSE and some zoologists say - has been present in Victoria continuously. The removal of colonies from Sale and elsewhere last century, accompanied by the removal of vegetation they require for a summer breeding colonies had seen these colonies lost to the south of the state. The creation of a rainforest in the Melbourne Botanical Gardens and later, around 2002-03 the growth of poplars with a dense weedy understory at Bairnsdale, has enabled them to establish two summer breeding colonies. The one from the Botanical Gardens was forcibly evicted and the grey headed flying foxes moved to red gums on the banks of the Yarra River where they suffer a significantly increased mortality rate.

The East Gippsland Shire, in response to resident's complaints, established a process to fell the poplars in stages and replace them with native vegetation - continuing 'revegetation program'. Unfortunately designing these plantings no consideration has been given to the basic physical requirements of the grey - headed flying foxes nursery area. From past experience vegetation will have to be least 2-30 years of age or even much older before it can provide the physical structure - especially shelter from sun - required.

The properties affected - 2-5 - have a legitimate grievance - but no steps have been taken to mitigate the impact of grey-headed flying foxes on these properties. The noise volumes experienced by residents and frequency has not been measured and proximity of the flying foxes to the properties has not been mapped. The proposal of the Shire here; http://www.eastgippsland.vic.gov.au/Your_Say/Draft_Grey-headed_Flying-

fox Roost Site Management and Action is actually illegal under the EBPC Act 1999. By running their consultative process at the same time as the one for the federal review there has been a large degree of confusion.

IF ANY TREES ARE CUT DOWN PLEASE RING s22 and s22 IMMEDIATELY. UNLESS FEDERAL APPROVAL IS GIVEN THE PENALTIES ARE FINES AND/OR JAIL SENTENCES.

I have attached an article that I wrote in last weeks (Bairnsdale) Advertiser and basic internet searches will reveal both that Grey-headed flying foxes are likely primates <http://www.batcon.org/index.php/media-and-info/bats-archives.html?task=viewArticle&magArticleID=259> and their threatened status, nationally and internationally.

I am doing what I can but I would really appreciate any help and assistance that any of you could generate. Submissions for the federal process (see below) close on the 15th of February. The council date for closure of submissions finishes on the same day - but Kate Nelson of the East Gippsland Shire indicated on local ABC Radio yesterday that the council will be clearing the poplars out over 18 months. This will lead to the death of grey-headed flying foxes, especially the young, and the loss of the breeding colony and apparently pre-empts the process established by the shire.

The alternative approach is outlined in the letter below and involves continuing the rainforest revegetation on all available public land, developing tourism potential and only removing the poplars in two or three decades time when the grey headed flying foxes move on.

Before the council takes any further action it must;

1. Abide by the Australian Federal Law
2. Actually evaluate the nuisance caused to a few residents by the fruit bats and undertake measures to reduce their impact
3. Pay for or jointly fund research to determine what the physical parameters are for this nursery colony,
 - a. the temperature range within the colony,
 - b. the current mortality rate of young and adult grey-headed flying foxes and the cause of that mortality
 - c. collate all the known counts of animals in this colony and undertake a monitoring the numbers of adults and young
4. Measure the noise nuisance caused to residents and undertake research to determine what mitigation measures are required and install those that do not impact grey-headed flying foxes such as sound barriers etc.

Regards

s47F

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From: eeg@eastgippsland.net.au
Sent: Tuesday, 12 February 2013 2:12:00 PM
To: Feedback Address For Web Page
Subject: comments - plans by EG shire to remove Flying-fox habitat.

Re: East Gippsland Shire Council/Natural resources management/Bairnsdale/VIC/Poplar Tree Removal Program - Grey Headed Flying Fox Zone

EEG objects to the plans of the East Gippsland Shire to force the colony of bats from the Mitchell River. These bats are listed by both State and Federal governments but neither has a protection plan for them. Despite there being acknowledgement of their precarious status and the identified threats to them (including destruction of their roosting sites), no work has been done to ensure these rare wildlife are properly managed at this site. These bats have been present for many years.

The fairly harsh plans suggested by the shire will likely cause stress to this colony and they may not find another suitable site with the right shade and temperature needed to maintain the colony's health in hot weather. Replanting with natives is a splendid sounding plan, but do you expect they will replace the poplars' size and shade within 18 months time? There are likely to be 3-5,000 bats in this colony. If there was a better summer camp for them, they'd have moved to it.

We hope that the biological and habitat details of these animals are well known by the Council staff who are making decisions on the bats' future and management, so we will not repeat them here. Such details are freely available on the net if the planners would like to consider the behaviour and habitat needs of these amazing nocturnal creatures.

We believe there are alternatives to destroying the roosting site completely and in a short time. The shire could, for less cost, provide noise abatement measures for the few houses that are affected. Signs to prevent people deliberately disturbing the Flying-foxes would also help reduce daytime noise (they are out feeding at night). The public walkway could be detoured around the colony to avoid complaints about the droppings.

The Action Plan for Australian Bats includes the objectives of stabilising the population at the 1999 level, develop non-destructive methods for management of camps in problem areas and identify and protect essential habitat. Plans by the shire to move these bats on by cutting down their roosting cover over a short period of time is contrary to these objectives.

Regards

s47F

Coordinator
 Environment East Gippsland Inc

Locked Bag 3
 ORBOST Vic 3888

(03) 5154 **s47F**
www.eastgippsland.net.au

EAST GIPPSLAND - our breathing space

RESPONSE 8

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From: EGRCMN Facilitator [facilitator@egrainforest.org.au]
Sent: Friday, 15 February 2013 1:42:40 PM
To: Feedback Address For Web Page
Subject: Grey-headed flying fox Draft Plan - Feedback

Good afternoon,

Please find attached feedback regarding the "Draft Strategic Management and Action Plan October 2012, Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site"

Regards,

s47F

Facilitator, East Gippsland Rainforest CMN
Conservation Officer, Trust for Nature

s47F

<http://www.egrainforest.org.au/>

<http://www.trustfornature.org.au/>

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East Gippsland Rainforest Conservation Management Network

PO Box 263, Lakes Entrance 3909
Inc. No: A0049651T
ABN: 33 749 272 178

Secretary: S47F
Tel: s47F
Email: secretary@egrainforest.org.au



15th February 2013

By email to: feedback@egipps.vic.gov.au

Review of the Draft Strategic Management and Action Plan October 2012,
Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site
East Gippsland Shire Council
PO Box 1618
Bairnsdale, VIC, 3875

Dear Sir / Madam,

Re: Grey-headed flying fox Draft Strategic Management and Action Plan October 2012 Feedback

The East Gippsland Rainforest Conservation Management Network (EGRCMN) appreciates the opportunity to provide feedback regarding the 'Draft Strategic Management and Action Plan October 2012, Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site'. The EGRCMN is an organisation whose aim is the conservation and permanent protection of rainforest and associated vegetation types in East Gippsland.

The EGRCMN supports the EGSC's actions in the preparation of this draft strategy to manage the impacts and associated management issues with this matter. It is appreciated that such management is necessarily detailed and complex.

As indicated in the Draft, Grey-headed flying foxes play a pivotal role as pollinators and dispersers of seed for many of our flora species. The population of grey-headed flying foxes is believed to be halving every 6 – 7 years. It is imperative, therefore that an appropriate management strategy is put in place.

In regard to the Draft Strategic Management and Action Plan, it is suggested that a further management option exists, which has additional advantages over the preferred option. An integrated progressive restoration of the whole site would have the following activities as key components;

- Weed control – a hierarchical approach based on the extent, impact and most effective control methods, across the whole site. (eg, focus on English Ivy and Broad leaf privet initially before tackling other species.
- Poplar removal – a staged removal based on their individual proximity to housing, public safety and utilisation as roosting habitat. It is noted that some of the poplars are being progressively killed by the flying foxes, however whilst they remain, they do provide habitat, and do contribute structural elements to the vegetation.
- Supplementary planting and support for natural regeneration of native species.

This option differs from the staged option in terms of the area covered, works undertaken and timing of those works. The benefits include;

- Least impact to colony as roosting habitat not so severely reduced
- Flying foxes contributing to revegetation as evidenced by the natural regeneration already occurring, (eg. pittosporum and lilly pilly's)
- Progressive restoration supports weed control and increases opportunities for natural regeneration.

It is acknowledged that this option does not remove the grey-headed flying foxes from the site.

It is further suggested that strong consideration be given to establishing an alternative roost site to encourage movement of the colony away from the residential area, and to provide alternative habitat during the site restoration. It is understood that a potential alternative site could be upstream of the Lind bridge on the Mitchell River. This location could be quickly established using suitable fast growing native species and would ensure that appropriate buffer distances from residences are maintained.

Finally, with all proposed revegetation, it is recommended that the vegetation type be rainforest. In addition to providing suitable habitat for the grey-headed flying fox, rainforests provide a range of other benefits to the environment and the community. Rainforest species already occur naturally within the area, and rainforest restoration is being undertaken at a number of sites upstream from the roost site. The EGRCMN would be happy to provide advice and assistance in regard to rainforest restoration.

Please don't hesitate to contact me if you require further information or clarification regarding these suggestions and recommendations.

Yours sincerely,

s47F

Secretary,

East Gippsland Rainforest Conservation Management Network

dwa1B

From: Charlie [ariestao@skymesh.com.au]
Sent: Saturday, 9 February 2013 3:12:47 PM
To: Feedback Address For Web Page
Subject: Grey headed flying fox feedback.....

Resending this as there seems to be a problem with the shire server.

Just in case have also sent it through the snail mail system.

Dear Mayor and Councillors,

Please find attached my thoughts on the removal of the poplar trees that have been adopted by the grey headed flying fox colony.

Thank you,
Charlie Schroeder

East Gippsland Wildlife Shelter Groups Inc..
<http://www.gwildlife.com.au/>

--

Registered Linux User:- 329524

If I knew for a certainty that a man was coming to my house with the conscious design of doing me good, I should run for my life.Henry David Thoreau

Debian GNU/Linux - just the best way to create magic

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the system manager.

This footnote also confirms that this email message has been swept by Clearswift for the presence of computer viruses.

www.clearswift.com



The Snug Wildlife Shelter

38 McPhies Road - Cassilis - via Omeo 3898- Victoria

email: arlestao@skymesh.com.au

Phone: 03 51594460

Grey-headed Flying-fox Feedback
PO Box 1618
Bairnsdale 3875
Victoria

Grey-Headed Flying-Fox Feedback

Friday 8 February 2013

Mayor and Councillors
Dear Madams and Sirs,

I think I read first about the grey headed flying fox roost in the Bairnsdale advertiser last year. Realising just how fortunate Bairnsdale residents were to have these animals, was going to write just that to the advertiser. Too many other things going on at the time and it was slowly over written on my list of things to do.

There are many elements in error with what the East Gippsland Shire has been doing along the Mitchell and other rivers. As can be seen by the recent floods and undermining of the Great Alpine Road.

♣ Removing species of trees to plant others

- The trees being removed from the river banks because they are not native was never a good idea. These are not exotics as most people will claim, no more than "born here" white Australians are exotics. These trees have come from seed from naturalised Australian poplars or whatever immigrated species. That they are being used by Australian native animals is enough to validate their benefit to the nation and Bairnsdale in particular.
- To call these trees "invasive" and "pests" as in the draft document produced by the East Gippsland Shire shows lack of examination of the species and no appreciation of nature's diversity. They can be the former, just like the wattle. But never the latter, and are great fodder for introduced species which accrue a considerable amount of export dollars into the national coffers.
- Further, the flying fox migration to this area will, if it's undisturbed, eventually bring the seeds of native species to the roost area. Why this indecent haste to have it happen immediately by creating devastation and then planting natives that will eventually volunteer at any rate?

♣ Removing an animal habitat

- We of East Gippsland and everywhere in Australia, though we are concerned in this instance about the former, are losing required numbers to maintain genetic strength and diversity of some species of native animals every day through road kill and other human generated conditions.
- Instead of trying to deter animals from coming into areas where they can at least survive, though hopefully thrive, we should be trying to encourage their occupation. Bairnsdale needs to get on board the native animal conservation thrust. Not just for tourism and the intrinsic

value of the native animals found in our region, but also to attract people who wish to study them to ensure their survival elsewhere.

- Removing this native animals habitat to plant native trees is a bit weird? Why disturb and put under stress any animal species to plant native flora that will take years to establish? Are the native plants earmarked to replace the poplars, Victorian natives even?
- A better option if there is a conflict with a section of walking track, is to close that section of the path. For a decade if need be, or make a path round it if possible rather than tear down the established trees. Thus, allowing them to slowly become part of, and enrich the soil in which they grow.

♠ Establishing new habitats

- Before any habitat is removed, new habitat should be established if the old is interfering with the overly delicate sensibilities of the residents near any occupation of native fauna. The East Gippsland Shire should be far sighted and create habitat for native animals long before they are perceived as being a nuisance.

♠ History

- Dare I go into the history of slaughter and dislocation of animals so white settlers who were introduced to this country could live in a comfort to which they were often unaccustomed in the country from which they emigrated? Nothing was sacred in this new land they took as their own by force and slowly turned into the old country they had left. But with more room and possibly more freedoms and maybe less rain.
- The aboriginal people were known to eat flying foxes in the past. How many colonies were in the area and not recorded because they were a nuisance and no one thought to do so. Dispossessing them by habitat removal or slaughtered, because they were in the way of the new settlers ambitions?

♠ The disease issue

- Disease is the crazy fear of some people in the community who have not been supplied all the information to dispel it. Some flying foxes are known to carry the Hendra virus. But - there is no proof that flying foxes transmit the disease to horses. People catch the virus from horses, not flying foxes. The documentation is there to be read. Some research has been done. Flying foxes can handle the virus and are not affected by it. Horses are.
- Lyssavirus is not a danger to anyone unless, someone is bitten by a flying fox that just happens to have the disease. So if people just leave the flying foxes alone, and are warned to call a wildlife carer who has had the precautionary vaccinations if a need for rescue arises, an incidence of contracting the disease would be almost as likely as being hit by a runaway space craft.

♠ How much disturbance?

- Have all the residents of Bairnsdale been canvassed to discover if they find the flying fox colony disturbing?
- Are the residents of Bairnsdale informed about all things pertaining to the grey headed flying fox?
- Has anyone researched how many people actually go to see the colony, take photographs and observe them because of interest?

Summary:

Human beings remove the shade and then suffer in the sun, we bulldoze flat the species that evolution has proven to be successful for what we erroneously think we need. Then build something inappropriate for the purpose, more to do with fashion than practical, which requires enormous energy use to deliver the same environment that was in place before the decision to slash and burn. We create climate change that further increases our energy use which further increases our discomfort in a never ending spiral.

Believing to be correct: our double standards removing or attempting to remove exotic species of which we are one. Trying to recreate the irreplaceable environment that was created by evolution with the plants we bulldozed down and burnt and continue to do so. Taking insufficient time to think and accurately evaluate the result.

In this instance East Gippsland Shire has the opportunity to be the first, a pioneer shire, to change this destructive mindset. Accept that exotics are desirable in the right place and use, many are fire retardants and increase the appeal of our environment. That they are especially desirable if they have been adopted and endorsed by species who were here long before the white settler.

The East Gippsland Shire could be the clever shire, the one that demands minimum disruption to areas where people want to build. Encourage maximum tree planting of fire retardant species and protects its wildlife where residents should share, rather than steal their land area. Going round "features" that others, less enlightened, may consider obstacles, making the Bairnsdale area interesting for both residents and visitors.

To step onto this pioneering path; reconsider the removal of the the poplar trees which are the grey headed flying fox roost on the Mitchell river. Rather, spend that money and a little bit more, to establish another suitable roost area which this native Australian may prefer when it has properly grown. In the interim; creating the infrastructure for those who need to walk, to go round, to graciously give ground, to be tolerant of another sentient being.

Can the East Gippsland Shire Council be that far sighted?

Sincerely,

A handwritten signature in black ink, appearing to be 'Charlie Schroeder', written in a cursive style.

Charlie Schroeder



**Australian
Wildlife
Protection
Council**
A voice for wildlife

February 13, 2013

Grey-headed Flying-fox Feedback
PO Box 1618, Bairnsdale, 3875

Reference Number: 2009/5017

East Gippsland Shire Council/Natural
resource management / Bairnsdale/ VIC/
Poplar Tree Removal Program - Grey Headed Flying Fox Zone.

3	8	15	T	F	G	P
Pest Plant office.						
Env - Strategy.						
Res - Res. Needs + Pest An.						
18 FEB 2013						
EGSC - Corporate Records Unit						

Email to: epbc.referrals@environment.gov.au Reference Number: 2009/5017

**FEEDBACK RE: DRAFT GREY HEADED FLYING FOX ROOST SITE STRATEGIC
MANAGEMENT ACTION PLAN**

Status of Grey-headed Flying Fox (GHFF) (*Pteropus poliocephalus*)

International IUCN - Vulnerable National - Vulnerable Victorian State - Endangered

Australian Wildlife Protection Council (AWPC) brings to the attention of the East Gippsland Shire Council (EGSC) our abject dissent with the proposed Management Action Plan regarding the removal of Poplar trees which at present constitute the summer nursery and roost for several thousand GHFF at this site on the banks of the Mitchell River.

Flying-foxes disperse the pollen and seeds of plants they visit during their foraging trips, and in this way they contribute to the reproductive and evolutionary processes of forest and woodland communities. Their mobility, size, territorial feeding activities, and colonising behaviour result in wide-ranging dissemination of pollen and seeds. Their ability to move freely among habitat types allows them to transport genetic material across fragmented, degraded and urban landscapes.

Camps are highly structured. The majority of roost trees are occupied by mixed groups of adults comprised of a single male, who scent-marks and defends a territory shared by one or more females and their dependent young. The roosting positions of individual males are highly consistent and animals return to the same branch of a tree over many weeks or months. Some grey-headed flying-foxes are known to occupy a single area within a camp for several years, while others may return to the same branch of a tree after having migrated over large distances.

Flying-foxes often have a strong connection to camp sites and can be extremely resistant to relocation efforts.

Our concerns for the welfare of the GHFF and the demise of their annual roost at this site are as follows:

* The EGSC states in the draft strategic management plan: "The roost site poplars form part of this program. The national listing of the GHFF means that the proposal to remove the existing roost trees is a controlled action and requires the development of a management plan that will ensure no or minimal impact to the conservation of this species".

The key wording here is "no or minimal impact to the conservation of the species"

The removal of the Poplar trees over a 3 year period without revegetation will lead to the GHFF colony being gradually displaced, this would mean for each of the 3 years GHFF's would be returning to this site looking for a place to roost. With the number of trees gradually diminishing there would be on each of these 3 years GHFF's attempting to squeeze into a smaller and smaller area. Each year this happens, thousands of these animals will fly around until they are totally exhausted and will die and amongst these deaths will be hundreds if not thousands of juveniles which the mothers will be carrying.

This is not "no or minimal impact" This is expulsion by stealth.

Australian Wildlife Protection Council Inc

KINDNESS HOUSE, 2nd Floor, 288 Brunswick Street, Fitzroy, Victoria

TEL: 03 5978 8570 FAX: 03 5978 8302 MOB: s47F

kangaroo@hotmail.net.au www.awpc.org.au www.rootou

Patrons: Professor Peter Singer and the Hon Richard Jones Registered

RESPONSE 11

* The draft strategic management plans states:

The existing vegetation is in a very poor and senescent condition and has a limited lifespan. The poplars are an undesirable invasive pest plant species. Due to the high public usage of the walking path and the condition of the trees they are becoming a public safety issue.

These trees didn't suddenly grow old and it is reasonable to assume that if the revegetation program has been ongoing since 2003 the condition of these trees would have been noted when the area was initially investigated.

The question we put to the EGSC are:

- a) Why wasn't the problem with the trees acknowledged in the early stages of the revegetation work?
- b) Why wasn't planting of native trees amongst the Poplar instigated in 2003 allowing substantial growth to occur before cutting down the Poplars?
- c) Was any consideration given to or research carried out with regard to the GHFF roost site and how it could be replaced with minimal disturbance?
- d) Why is this strategic management plan not incorporating the advice given in the report tendered by David Tarling – Hort IV. Arb (Melb Uni) Nowhere in his report does he say that these Poplar tree should be cut down within a 3 year period, to the contrary, he gives them a Useful Life Expectancy (ULE) of 5 – 10 years

* The draft strategic plan states:

The roost site is adjacent to a residential area. Residents have expressed concerns over the impacts from the colony including disease, noise, smell, and the potential for the devaluation of their homes.

We note that nowhere in the strategic management plan does it give an account of any research having been undertaken with regard to:

- a) The noise factor level.
- b) Trials to negate the noise and smell factors such as installation of high, solid fencing which would provide a buffer between the residents and the colony.
- c) Education of the residents with regard to the extremely low risk of disease, how to protect backyards and cars, protection of fruit trees and so on.

There is a huge amount of information about 'Living with Flying Foxes' which is easily accessible on many web sites such as:

http://www.bats.org.au/downloads/living_with_flying-foxes.pdf

<http://www.sydneymbats.org.au/flying-foxes/living-with-flying-foxes/>

It is incredibly remiss of EFSC not to have provided concerned residents with such information.

It is apathetic negligence not to have conducted an evaluation of the noise level and not to have trialed a buffer between the residents and the GHFF.

We conclude from reading the strategic management action plan that the primary interests of the EGSC are:

* Removal of the GHFF colony.

* Removal of the Poplar trees with no genuine concern for the GHFF which becomes very evident in this plan with the statement: **It is anticipated that the GHFF will relocate to find other suitable habitat.**

Australian Wildlife Protection Council Inc

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Patrons: Professor Peter Singer and the Hon Richard Jones Registered Charity: A0012224D

The outcomes and costs of relocating flying-fox camps.

http://www.griffith.edu.au/data/assets/pdf_file/0006/358440/Roberts-et-al.pdf

Relocation continues to be viewed as an attractive solution to problems arising from flying-fox camps in Urban areas. For example, between 2006 and 2009, proposals were made to state and/ or commonwealth Government to relocate eight flying-fox camps in NSW, Queensland and the Northern Territory. However, it is important to determine the magnitude of the perceived problem before exploring potential management options, including relocation. For example, if noise, smell and faeces from a camp affects only a small number of residents, then more local-scale mitigation options such as creating buffers between houses and roosting flying foxes or constructing sound barriers may be more effective solutions than attempted wholesale relocation of a camp (see Roberts 2006 for review of further management options and their estimated costs). In many cases, public education campaigns can reduce antipathy towards flying-foxes and reduce the social or political imperative to 'do something' about flying-fox camps. For example, managers of some urban camps (e.g., Bellingen, Coffs Harbour, Wingham Brush and Ku-ringgai (Gordon) in NSW, and Woodend in Ipswich, Queensland), have acted to alleviate the concerns of nearby residents through strategies such as community based camp revegetation programs, coupled with minor habitat modification around the camp's periphery, education days, and the promotion of tourism to campsites (Pallin 2000; Smith 2002; Coffs Harbour City Council 2007; Hall 2006). Similar approaches have been used to successfully manage residents' concerns around six flying-fox camps in suburban Brisbane, Queensland, that were considered potential sources of major conflict (Hall 2002, 2006). Many of the conflicts between humans and flying-fox camps may be attributed to poor planning and inappropriate development near established camp sites (West 2002; Smith 2002; Eby 2002). Creating public open space buffers around established camp sites, aligned with more sympathetic developments, could minimise future conflict, particularly in new residential areas. This is mainly an issue for local government, although there may also be a role for State and/ or Commonwealth planning policies to guide development of areas adjoining flying-fox habitat, given that some flying-foxes species are classified as 'vulnerable to extinction' under State and/or Commonwealth legislation.

Yours sincerely

s47F

President

Australian Wildlife Protection Council Inc

KINDNESS HOUSE, 2nd Floor, 288 Brunswick Street, Fitzroy, Victoria 3065 Australia

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kangaroo@hotmail.net.au www.awpc.org.au www.rootourism.com.au

Patrons: Professor Peter Singer and the Hon Richard Jones Registered Charity: A0012224D

From: J. s47F [redacted]@hotmail.com]
Sent: Friday, 22 February 2013 3:38:42 PM
To: Feedback Address For Web Page
Subject: s47F [redacted] response to GHFF project

To whom it may concern.

Thank you for the extension of time for public comment to the East Gippsland Shire Council Draft Strategic Management and Action Plan for the Grey-headed Flying Fox colony on the banks of the Mitchell River at Bairnsdale.

Please find attached my response to the Draft Plan.

I would be grateful for acknowledgement.

Regards

s47F [redacted]

Caulfield North
Victoria 3161

Phone s47F [redacted]

s47F response to East Gippsland Shire Council's Bairnsdale Grey-headed Flying Fox Roost Site Draft Strategic Management and Action Plan October 2012

Introduction

I made comment on the East Gippsland Shire Council referral on this project to the Federal department for environment in 2009. I am amazed and depressed that it has taken four years, untold labour and expense to come up with a draft management plan that is a/ political, b. ad hoc, and c. inadequate.

Australia is the world record holder for the extinction of mammal species over the last two centuries. A growing number of native mammal species in Australia are in radical decline. The reason for this is extremely poor land management, including introduction of exotic species.

The rapacity and utter carelessness with which Australia's natural resources have been exploited is, unfortunately, ongoing. The Grey-headed Flying Fox Roost Site Draft Strategic Management and Action Plan reflects these attitudes.

There is some scientific support for the view that flying foxes are primates, or more closely related to Primates than Chiroptera. *Homo sapiens* is also in the order Primates. Perhaps this is one reason why there is an overlap in preferred camping spots of the two species.

It is a fact that the numbers of GHFF has reduced dramatically since Europeans arrived in Australia in 1788, and the species is now listed as vulnerable on the IUCN Red List, due to its ongoing population decline. The species is listed as vulnerable under the Victorian *Flora and Fauna Guarantee Act 1988*.

The Draft Management Plan for the Grey-headed Flying Foxes (GHFF) could have been more strategic in its approach. An assessment needs to be made about how the Bairnsdale colony fits in with the social order of GHFF across their range.

Will potential reduction in size or elimination of GHFF at the Mitchell River roost site affect the viability of GHFF colonies elsewhere in their range?

As suitable habitat for GHFF continues to shrink will they be forced to cohabit more with the Black Flying Fox *Pteropus alecto* with which they are known to interbreed?

Will competition with other flying fox species within GHFF range cause further decline of one or another of the flying fox species?

Will continued constriction and elimination of roosting and breeding sites for GHFF increase mortality of flying foxes from disease as there will be less opportunity to disperse away from affected sites?

Are large colonies of GHFF important for the survival of the species?

What is the total number of GHFF necessary to ensure their continued survival?

Does the trend to increasing urban location of GHFF colonies threaten the survival of the species, or the plant species they pollinate?

Will chemical and other pollution in the urban areas where GHFF now choose to camp and forage cause higher mortalities, increase their vulnerability to disease or reduce their breeding success?

The Draft Management Plan

Three options for the management of the roost site have been identified in the Draft Management Plan (page 5):

- Do nothing option
- One off replacement of vegetation from non-native to native species (i.e. complete clear felling of site with corresponding complete site revegetation).
- Staged replacement of non-native vegetation (i.e. partial site clearing with corresponding revegetation).

My comments regarding these options are –

None of the options are costed.

- Do nothing option

This option is the easiest and cheapest. Whether the existing vegetation, dominated by exotic poplars, will continue to thrive in the long term is doubtful on the evidence presented i.e. senescing trees, rampant growth of ivy, damage from use as a flying fox roost, etc. There will be continued complaints from local human residents. When the site degrades sufficiently due to collapse and death of the exotic poplars the GHFF camp will move.

- One off replacement of vegetation

This will eliminate the flying fox colony from the site, and may or may not eliminate them from the nearby area. The problems associated with flying fox colonies are simply shifted elsewhere. No matter where the flying colonies are located some people will perceive them as a problem. The flying foxes will go to where the political pressure from humans is least, which will not necessarily be the best place for the flying foxes.

- Staged replacement of non-native vegetation

The current roost site is considered to be an inappropriate location to support a GHFF colony of the population size seen in recent years. Key reasons include disturbance of the colony from recreational walking path users, creation of conflict with local residents, proximity to high traffic areas and limited longevity of the current roost trees. (p11. Draft Management Plan)

There is no indication in the Draft Plan that there is much consideration of the welfare of the flying foxes, apart from mealy-mouthed humbug. The plan is clearly to get rid of the flying fox colony from its preferred roosting site by removing the associated vegetation over three years. The effects on the flying foxes might be more detrimental than one-off replacement of vegetation.

If the existing exotic vegetation was to be removed and replaced with natives over an extended time frame e.g. 20 plus years, in a well-planned way, there would be a good chance for a happy reconciliation, with the flying foxes remaining on the site, and the human neighbours complaints resolved.

If the plan is simply to get rid of the flying foxes why not clear all the exotic vegetation of the roost site while the flying foxes are not there? Simple and cheap. Not what I would want to see, but why pretend to have the welfare of GHFF at heart, when you don't?

If the plan is to restore the area to 'be representative of pre-European condition' (see Aims of revegetation page 67 of the Draft management plan) the flying foxes might well be attracted back to the area in future, and thus conflict once more with human preferences, particularly

as one purpose of the draft management plan is to 'provide a safe environment for increasing recreational activities.' I suppose recreating people might not like 'smelly' 'disease-carrying' flying foxes, any more than they like mosquitoes, march flies, bush flies, wasps, bees, spiders, goannas, snakes, ticks, bullants, etc. normally associated with native bush.

One likely desire of many human residents of Bairnsdale will be to walk their dogs along the riverside. If people can learn to put up with dog shit everywhere, why not bat shit? If people don't like noise, why do they live in cities? People are very adaptable it seems, when they want to be. The perceived problems can be reduced in any case with good planning and management. That putting plans into effect might take longer than some people would like is unfortunate but necessary if we are to maintain the GHFFs. As the Draft Management Plan states, the GHFF play a critical role in pollination and dispersal of native plant seeds. They are also a food item for other native species.

There is no need for the walking path to go through the GHFF colony. The path can easily be shifted. Tall vegetation near human resident's homes could be lopped or removed to prevent GHF roosting there.

It is stated in the Draft Management Plan the exotic poplars pose an ongoing threat to environment due to their invasiveness. Only one of many invasive species allowed to persist on both public and private land. One of many invasive plant species legally traded commercially throughout Victoria.

Another option might be to remove the houses built on the river side of Riverine Street. If people in those house are the primary objectors to the flying fox colony, that might solve part of the problem. Extra land would become available for GHFFs. The houses should never have been allowed to be built there in the first place. They are an ongoing environmental hazard, and take up what could be attractive public open space. How do these things happen I wonder?

Appendix 9 Response Plan

The harassment and dispossession of the GHFFs, a threatened species, does not seem consistent with caring for the species well-being. Furthermore, it is completely unnecessary. If the destruction of the camp vegetation is to be done, it can be done when the bats are not there.

This is reminiscent of the dispossession of Aborigines. It is uncaring, stupid, and ultimately extremely counterproductive.

Fed Minister's assessment

Environmental protection laws in Australia suffer from severe deficiencies. A major one is that the laws focus on preventing extinctions, although they don't even achieve that aim (witness the recent extinction of the Christmas Island Pipistrelle).

This focus on extinction means that the role of species within ecosystems can be lost before the law even recognizes a problem. Flying foxes prior to 1788 numbered in millions. Now much reduced in numbers and with disturbed distributions, flying foxes may cease to be effective in their former roles as pollinators and distributors of seeds, and the consequences not realized until long after the flying foxes are gone.

The Federal Minister in his assessment of a referral, can take into account social and economic factors. The Bairnsdale Shire Council's emphasis on social factors i.e. some

Bairnsdale residents don't like the GHFFs, leads to the conclusion that the council has no good reason to remove the bats. The complaints about smell, noise, excrement don't appear to have been quantified or substantiated.

Monitoring and enforcement

The Federal environmental jurisdiction has the task of monitoring and enforcing compliance with its decisions, yet has almost no staff to do the job, and not a great deal of interest in doing it. Guidance will probably be left to the Victorian Department of Sustainability and Environment.

Strategic Remedies to maintain GHFFs might include-

1. Adequate roosting reserves for flying foxes
2. Reducing or halting clearing of flying fox habitat and food sources
3. Reducing and removing logging from native forests – logging regimes take out the older trees which provide most blossom and nectar
4. Restricting or halting urban development in flying fox habitat
5. Finding ways to protect human food crops without destroying flying foxes
6. Education of people about flying foxes and the important roles they play in native ecosystems
7. Stronger protective legislation for flying foxes
8. Federal and interstate engagement & joint action to protect flying foxes, including planning on a national scale
9. More research into the biology of GHFF and other flying fox species
10. Long term integrated strategies to adjust for climate change, bushfires, etc
11. Planning fuel reduction burns to minimize impacts on flying fox habitat and food supply
12. Maintaining security of tenure for flying fox camps in urban sites and developing these areas as sanctuaries, education centres, tourist attractions.

Conclusion

The reasons GHFFs choose roosting sites is not understood by humans as the Draft Management Plan admits. It took a considerable effort to relocate the GHFF camp in the Royal Botanic Gardens in Melbourne to the banks of Yarra, and the site chosen by the GHFF was not the intended one. The mortality rates of GHFF at the Yarra site is much higher than at the Botanical Gardens site as the Yarra site is more exposed and the GHFF die in large numbers from heat stress. The dominant trees are Red Gums. Whether the present Yarra campsite can sustain the GHFF in the longer term is debatable.

It is precipitous then to be removing the Mitchell River campsite.

Appropriate replanting of the existing campsite over a time long enough to allow development of canopy trees would maintain the existing campsite, or creating suitable camp sites near the existing camp site should in the long term allow the GHFF to move to a more favourable location.

A long-term plan to establish habitats suitable for GHFF will create good habitat for species other than GHFF and favourable environments for *H. sapiens* as well.

Additionally, planning needs to be in place to protect the food supply of the GHFF colony.

The well-being of GHFF is our well-being.

Man talks of a battle with nature, forgetting that if he won the battle, he would find himself on the losing side. (*E. F. Schumacher, economist*)

References

Department of Environment, Climate Change and Water NSW. 2009. Draft National Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus*. Prepared by Dr Peggy Eby. Department of Environment, Climate Change and Water NSW, Sydney.

Mitchell River Revegetation Program. Bairnsdale Grey-headed Flying Fox Roost Site. Draft Strategic Management and Action Plan. East Gippsland Shire Council 2012.

Nomadic Range and movement. Sydney bats 2011 <http://www.sydneymbats.org.au/flying-foxes/grey-headed-flying-fox/grey-headed-flying-fox-nomadic-range/>

Proceedings of a workshop to assess the status of the Grey-headed Flying Fox in New South Wales¹. University of Sydney, 29th April 2000

Pteropus poliocephalus IUCN Red List <http://www.iucnredlist.org/details/18751/0> accessed 21 February 2013



Proposed Approval

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted	East Gippsland Shire Council
--	------------------------------

proponent's ABN	81 957 967 765
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proposed action	To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (<i>Pteropus poliocephalus</i>) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].
-----------------	--

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved.

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2022.

Decision-maker

name and position	James Tregurtha Assistant Secretary South-Eastern Australia Assessment Branch
-------------------	---

signature	NOT FOR SIGNATURE – DRAFT ONLY
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date of decision	
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Conditions attached to the approval

The following measures must be taken to ensure the protection of **listed threatened species and communities** (sections 18 & 18A), specifically the **Grey-headed Flying-fox (Grey-headed Flying-fox)**:

1. The person taking the action must not remove or adversely impact more than 0.5 hectares of **Grey-headed Flying-fox habitat** at the **Mitchell River Roost Site**.
2. The person taking the action must implement and comply with the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**.
3. The person taking the action must ensure that:
 - a) Prior to the **removal of habitat** at the **Mitchell River Roost Site** a **Hotline** with a dedicated contact phone number and email address is set up to respond to public enquiries;
 - b) Prior to the **removal of habitat** at the **Mitchell River Roost Site** neighbouring Councils are notified of the proposal and provided with contact details to respond to enquiries;
 - c) Undertake revegetation of long-term **Grey-headed Flying-fox habitat** within the Bairnsdale area, in accordance with expert advice on **Grey-headed Flying-fox** ecology, subject to negotiation with and approval by, the **Department**. If a long-term **Grey-headed Flying-fox** camp is not established within the Bairnsdale area then revegetation or improvement of **Grey-headed Flying-fox habitat** within the Bairnsdale region must be undertaken; and
 - d) At least \$5,000 is spent on community education resources relating to **Grey-headed Flying-fox**, including, but not limited to, educational signage at a site of **Grey-headed Flying-fox habitat**.
4. If, following the **removal of habitat** at the **Mitchell River Roost Site**, the person taking the action proposes to undertake a separate **dispersal** then a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
 - c) The presence of pregnant **Grey-headed Flying-fox**;
 - d) The presence of **dependant young**;
 - e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - f) Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
 - g) Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.

5. The person taking the action may undertake an **emergency dispersal**. Unless negotiated with the **Minister** and approved, an **emergency dispersal** must be undertaken in accordance with the following requirements:
 - a) A **suitably qualified ecologist** must be engaged to advise of best practice **dispersal** methodology;
 - b) During **emergency dispersal** a **suitably qualified ecologist** must be present to oversee best practice **dispersal** methodology, undertake **behavioural monitoring** and document the outcomes of the process;
 - c) During **emergency dispersal** the person taking the action must comply with all recommendations and guidance from a **suitably qualified ecologist**;
 - d) **Emergency dispersal** must not be undertaken between 1 August and 30 September;
 - e) For the period 1 October to 31 March in any given year, **emergency dispersal** activities must not be undertaken if **flightless dependant young** are present (as determined by a **suitably qualified ecologist**);
 - f) **Emergency dispersal** must be undertaken 1.5 hours pre-dawn and finish one hour post-dawn to ensure **Grey-headed Flying-fox** have time to settle elsewhere before the heat of the day;
 - g) **Emergency dispersal** must not be undertaken during a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - h) Once **Grey-headed Flying-fox** have not returned to the site of **emergency dispersal** for more than five consecutive days and while absent from the site of **emergency dispersal**, the person taking the action must implement **passive measures**; and
 - i) Within five days of the completion of **emergency dispersal**, the person taking the action must submit a report to the **Minister** detailing the **dispersal** methodology implemented and the outcome achieved.
6. Within one month from the completion of Stage One of the **removal of habitat** (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**) and on the same date every subsequent year in which **removal of habitat** or **emergency dispersal** occurs, the person taking the action must submit a report to the **Minister** that addresses the following:
 - a) Details of the activities undertaken that year relating to **removal of habitat** or **emergency dispersal**;
 - b) Details of the associated outcomes of these activities;
 - c) The data collected (in accordance with these conditions of approval and the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**);
 - d) The status of **Grey-headed Flying-fox** colonies in the Bairnsdale region;
 - e) Details of how information gained has been incorporated into the future management of **Grey-headed Flying-fox** (adaptive management), including, but not limited to, the future **removal of habitat** or **dispersal** activities associated with the action;
 - f) Details of any activities planned to occur in the following year;
 - g) Written and signed confirmation by a **suitably qualified ecologist** verifying the accuracy of the data, information, analysis and conclusions contained within the report; and
 - h) Raw data must be made available to the **Department** upon request.
7. Five days prior to the **commencement** of the action, the person taking the action must advise the **Department** verbally and in writing of the actual date of **commencement**.

8. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
9. Within three months of every 12 month anniversary of the **commencement** of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Non-compliance with any of the conditions of this approval must be reported to the **Department** within 48 hours of the non-compliance occurring.
10. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
11. If the person taking the action wishes to carry out any activity otherwise than in accordance with the management plans as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that management plan. The varied activity shall not commence until the **Minister** has approved the varied management plan in writing. The **Minister** will not approve a varied management plan unless the revised management plan would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised management plan, that management plan must be implemented in place of the management plan originally approved.
12. If the **Minister** believes that it is necessary or convenient for the better protection of **listed threatened species and communities** to do so, the **Minister** may request that the person taking the action make specified revisions to the management plans specified in the conditions and submit the revised management plans for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved management plan must be implemented. Unless the **Minister** has approved the revised management plan, then the person taking the action must continue to implement the management plan originally approved, as specified in the conditions.
13. If, at any time after five years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of the **Minister**.
14. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within one month of being approved.

Definitions

Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan means the document titled *Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site, DRAFT Strategic Management and Action Plan, East Gippsland Shire Council, November, 2013*.

Behavioural monitoring means the monitoring by a **suitably qualified ecologist** of **Grey-headed Flying-fox** behaviour to identify behaviour outside of normal patterns of behaviour and changes in those patterns. As a guide, behaviour outside of normal patterns may include **Grey-headed Flying-fox** exhibiting sickness, malnutrition, abnormal flight, disorientation, injury, aggression towards a person undertaking an activity evidence of abandoned young, evidence of aborted young or, at worst case, death.

Commencement means any preparatory works associated with the **removal of habitat** from the **Mitchell River Roost Site**, such as the tagging of trees, introduction of machinery or clearing of vegetation, excluding fences and signage.

Department means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dependant young means:

- Newborn – totally dependent and carried by mother;
- Flightless dependant young – dependent on mother, but no longer carried large distances, unable to move easily around the camp; and
- Flying dependant young – dependent on mother, but able to move around the camp, can fly short distances.

Dispersal means any action, including, but not limited to, active physical harassment, taken to remove **Grey-headed Flying-fox** from a site of habitation.

Emergency dispersal means a **dispersal** response to be undertaken if **Grey-headed Flying-fox** relocate to an area where:

- a) Public health is at immediate risk (this includes, but is not limited to, within 100 metres of a hospital or educational institution);
- b) There is potential for the spread of disease through vectors (this includes, but is not be limited to, within 100 metres of a racecourse or horse stud property); and
- c) Anything else, as agreed with the **Department**.

Grey-headed Flying-fox means the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Grey-headed Flying-fox habitat means any patch of land, including non-native vegetation, which may be used by the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*, to forage, breed, shelter or disperse, as determined by a **suitably qualified ecologist**.

Flightless dependant young means **Grey-headed Flying-fox** that are dependent on their mother, but no longer carried large distances and that are unable to move easily around the camp.

Heat Stress Event means a hot weather event lasting one day or more that is extremely stressful and harmful to animals, defined as when temperatures exceed 35°C before 31 December or 38°C over consecutive days from 1 January.

Hot Day means a day when the ambient temperature is predicted to reach 30°C before 10am AEST, or reach greater than 35°C over the day.

Hotline means a point of contact, where members of the public can contact the person taking the action to report any injured **Grey-headed Flying-fox**, the establishment of a new camp of **Grey-headed Flying-fox** and to discuss general concerns regarding **Grey-headed Flying-fox**.

Listed threatened species and communities means a matter listed under sections 18 and 18A of the *Environment Protection and Biodiversity Conservation Act 1999*, specifically the **Grey-headed Flying-fox**.

Mitchell River Roost Site means the 0.5 hectare area defined at Appendix A as **Grey-headed Flying-fox habitat** along the Mitchell River, Bairnsdale, within which **removal of habitat** is to occur.

Minister means the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Passive measure means actions that do not involve active physical harassment of **Grey-headed Flying-fox**, which allow for ongoing maintenance of a successful dispersal area and that act as a deterrent against the animals re-establishing at the site, including, but not limited to, the trimming of branches and removal of limbs. It does not include the permanent **removal of habitat** critical to the survival of **Grey-headed Flying-fox**.

Removal of habitat means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ring-barking, uprooting or burning of **Grey-headed Flying-fox habitat**.

Stop work triggers means site or animal conditions that indicate that the activity should cease.

Substantially commence means the **removal of habitat** at the **Mitchell River Roost Site**.

Suitably qualified ecologist means a practising ecologist with tertiary qualifications from a recognised institute and demonstrated expertise in scientific methodology, animal or conservation biology in relation to the **Grey-headed Flying-fox**.

Appendix A





EPBC Ref: 2009/5017

Ms Kate Nelson
Director Planning & Community
East Gippsland Shire Council
P.O. BOX 1618
BAIRNSDALE VIC 3875

Dear Ms Nelson

**Invitation to comment on proposed approval decision
East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox
(*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)**

I am writing to you in relation to your proposal to remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council's poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes in Bairnsdale, Victoria. The above proposal was referred and assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for its impacts on listed threatened species and ecological communities. I am proposing to approve this project. My proposed decision is attached.

In accordance with the EPBC Act, I invite you to provide comments on my proposed decision, including the conditions which I propose to attach, within 10 business days of the date of this letter. Please quote the title of the action and EPBC reference, as shown at the beginning of this letter, in any correspondence. You can send comments to:

by letter Victoria Section
South-Eastern Australia Environment Assessments Branch
Department of the Environment
GPO Box 787
CANBERRA ACT 2601

by email s22 @environment.gov.au

If you have any questions about this decision, please contact the project manager, s22 by email to s22 @environment.gov.au, or telephone 02 s22 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments Branch
10 March 2014

cc. s22 Roadside Pest Plant Officer, East Gippsland Shire Council



Australian Government
Department of the Environment

EPBC Ref: 2009/5017

The Hon Matthew Guy MLC
Minister for Planning
Level 20
1 Spring Street
MELBOURNE VIC 3001

Dear Minister

Proposed approval decision

**East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox
(*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)**

I am writing to you in relation to a proposal to remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council's poplar removal program, which provide a 'summer camp' roost site for Grey-headed Flying-foxes in Bairnsdale, Victoria.

The above proposal was referred and assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for its impacts on listed threatened species and communities.

I am proposing to approve this proposal. My proposed decision is attached for your information.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'James Tregurtha'.

James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments Branch

10 March 2014

UNCLASSIFIED

Dept. of the Environment, Water Heritage
and the Arts AWD

REFERRAL DECISION BRIEF – EAST GIPPSLAND SHIRE COUNCIL POPLAR
REMOVAL PROGRAM – GREY-HEADED FLYING-FOX (*PTEROPUS*
POLIOCEPHALUS) SUMMER CAMP, BAIRNSDALE, VICTORIA, (EPBC
2009/5017)

Brief No: N/A
Public Affairs Consulted: No
DEWHA File: 2009/16182

For:

Deadline and reason:

Michelle Wicks,
Acting Assistant Secretary, EAB

25th August 2009 statutory timeframe from database

Recommended Decision	NCA <input type="checkbox"/> NCA(pm) <input type="checkbox"/> CA <input checked="" type="checkbox"/> NO <input type="checkbox"/> CU <input type="checkbox"/>
Designated Proponent	East Gippsland Shire Council
Controlling Provisions	Threatened Species (s18 & s18A) See <u>Attachment B</u> for list
Public Comments	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Number: Ten, See <u>Attachment E</u>
Ministerial Comments	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Assessment Approach Decision	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> What: Preliminary Documentation. Bilateral Applies <input type="checkbox"/>
Related actions & indirect impacts	-The referred action is not considered by the Department to be a component of a larger action pursuant to section 74A of the Act. -There are no secondary or consequential impacts expected as a result of the proposed action. See <u>Attachment B</u> for details.
SPRAT	Has data been provided to SIS? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Recommendations:

We recommend that you:

- | | |
|--|-------------------------------------|
| 1. Consider your legal obligations for decision-making at <u>Attachment B</u> | 1. <u>Noted</u> / Please discuss |
| 2. Agree with the recommended decision | 2. <u>Agreed</u> /Not agreed |
| 3. Agree to the designated proponent | 3. <u>Agreed</u> /Not agreed |
| 4. Agree the action be assessed on Preliminary Documentation | 4. <u>Agreed</u> /Not agreed |
| 5. If you agree to 2 and 4, indicate that you accept the reasoning in the Departmental briefing package as the basis for your decision | 5. <u>Accepted</u> / Please discuss |
| 6. Sign the notice at <u>Attachment C</u> (which will be published if you make the recommended decision) | 6. <u>Signed</u> / Not signed |
| 7. Sign the letter(s) at <u>Attachment D</u> | 7. <u>Signed</u> / Not signed |

MW

Michelle Wicks
Acting Assistant Secretary EAB
25 August 2009

UNCLASSIFIED

Key Issues:

- The East Gippsland Shire Council (EGSC) proposes to remove approximately 0.5 hectares of poplar trees located adjacent to the northern side of the town of Bairnsdale (Victoria) on the Mitchell River (refer to Photographs in [Attachment A](#)). The EGSC has been undertaking a poplar removal program since 2003 along the Mitchell River to enhance the environment. The proposed action will involve the removal of poplar trees which are used by the Grey-headed Flying-fox (*Pteropus poliocephalus*) as 'summer camp' roost habitat. Removal is proposed to be undertaken at the end of March 2010 for a two week period.
- The poplars are targeted for removal as they are an environmental weed, in a state of senescence and pose a public safety threat in the near future due to dead branches and severe lean angles. The proposal indicates the trees will not be removed if bats are present at the time of the scheduled operations. Revegetation activities will commence following removal.
- The poplar removal program is supported by East Gippsland Shire Council, East Gippsland Catchment Management Authority and Bairnsdale Urban Landcare Group. The program has been nominated for State Landcare Awards in 2009.
- The referral fails to identify specific impacts of the tree removal program and ways in which they will be managed and mitigated. The referral states that suitable roosting habitat is available locally however there is no mention of a strategy for the relocation of the *P. poliocephalus* colony and no evidence of alternative camp roost sites has been identified. Whilst an alternative to the proposal involving staged removal was suggested in the referral, no detail has been provided. Further investigation needs to be undertaken to fully address potential impacts of the proposed action and how significant impacts can be reduced.
- The Department of Sustainability and Environment (DSE) have been involved in monitoring this colony since 1995. DSE were contacted in relation to background information see [Attachment B](#) (telephone conversation).

Summary of significant impacts

- The Bairnsdale *P. poliocephalus* colony averages approximately 3,000 individuals each year, with one season (2006) recording 34,000 individuals. This colony has been identified as an 'important population' as it is a key source population for breeding and dispersal (as outlined in EPBC Policy Statement 1.1).
- It is considered that the proposed action is likely to have a significant impact on the *vulnerable* Grey-headed Flying-fox (*P. poliocephalus*) due to:
 - The removal of an area containing poplar trees (0.5 hectares) known to provide a 'summer camp' for the *P. poliocephalus* which represents an area of occupancy of an important population.
 - Fragmentation of the existing important population into two or more populations. Partial or whole removal of camp habitat may lead the Bairnsdale *P. poliocephalus* colony to disperse thus there is the potential for the colony to split into smaller groups if suitable habitat is not available.
 - Disruption of the breeding cycle of an important population. The camp site has been identified as a maternity/nursery roost where young are reared by their mothers. The removal of roosting trees is likely to place stress on returning lactating females and young. Males have also been recorded at the roost site, therefore it is likely that courting activities occur late in the summer.
 - The removal of a 'summer camp' is likely to adversely affect habitat critical to the survival of this species.

Background:

- A referral was received on 28th July 2009 ([Attachment A](#)). The action was referred by the East Gippsland Shire Council who has stated their belief that the proposal is a controlled action for the purposes of the EPBC Act.
- The operational tree removal process will involve trees being completely removed on level ground or felled with stumps remaining in the ground on slopes. Tree poisoning is likely to occur three months prior to tree felling.

Submissions:

Public submissions

- The referral was published on the Department's website on 28th July 2009. The Department received ten public submissions (plus one ministerial) ([Attachment E](#)). All issues raised by the public were generally common across the submissions. Submissions were not directly opposed to the action, however considered the action a controlled action which is likely to have a significant impact on *P. poliocephalus* for the reasons outlined above. These submissions have been considered in the preparation of this advice.

Comments from State/Territory Ministers

- The Victorian Department of Planning and Community Development was also informed of the referral in a letter dated 29th August 2009, and invited to provide comment. No comments were received.

Discussion of likely significant impacts:

- A full discussion of the potential impacts on the matters of National Environmental Significance (NES) in particular the *vulnerable P. poliocephalus* is included at [Attachment B](#). One threatened ecological community, 14 listed threatened species and 13 listed migratory species were identified as potentially occurring within a five kilometre radius of the subject site using the EPBC Protected Matters Search Tool. It was determined using the significant impact guidelines that the proposed action is likely to have a significant impact on *P. poliocephalus*. It is unlikely that the proposed action will significantly impact on any other matters of NES.
- The proposed action site sits within the same catchment as the Gippsland Lakes Ramsar site. Formal advice received from the Wetlands Section indicates that a significant impact on the Gippsland Lakes Ramsar site is unlikely (refer to advice included in [Attachment B](#)).

Recommended Assessment Approach:

- Pursuant to s87(5) of the EPBC Act, you may decide on an assessment on preliminary documentation only if you are satisfied that the approach will enable an informed decision whether or not to approve the taking of the action. In this case, the number and complexity of relevant impacts is locally confined. Assessment on preliminary documentation is considered appropriate.

s22

Director
Victoria & Tasmania Section

Primary Contact

s22

Secondary Contact

s22

21 August 2009

Consultation: Wetlands Section

Attachments:

- | | |
|---|--|
| A | Referral |
| B | Information regarding impacts on matters of NES (includes Wetlands Section advice, correspondence with the Department of Sustainability and Environment) |
| C | Decision notice |
| D | Notification letters |
| E | Public Submissions |

Decision on controlled action and controlling provisions

The following is the Department's advice against each of the relevant matters of national environmental significance protected under the EPBC Act.

The Department has reviewed the information in the referral against the EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (May 2006) and other relevant material. While these guidelines are not binding or exhaustive, the factors identified are considered adequate for decision-making in the circumstances of this referral, and there are no reasons to depart from these guidelines or consider additional factors. Adequate information is available for decision making for this proposal.

Based on the information available, the Department considers that significant impacts on matters protected under the EPBC Act are likely. The main issues for consideration relate to listed threatened species (s18 & s18A), in particular the *vulnerable* Grey-headed Flying-fox (*Pteropus poliocephalus*).

Under s75 of the EPBC Act, you must decide whether the action that is the subject of a proposal referred is a controlled action and which provisions of Part 3 (if any) are controlling provisions for the action. In making your decision you must consider all adverse impacts the action has, will have, or is likely to have on the matter protected by each provision of Part 3, and you must not consider any beneficial impacts on the matter.

You must also consider any comments received from the public, responsible Commonwealth Ministers and appropriate State or Territory Ministers, to the extent that they are relevant. Ten public comments (including one ministerial) were received, these have been included in [Attachment E](#). None of the public submissions directly opposed to the action however they were all concerned that the proposed action would likely have significant impacts on the Bairnsdale *P. poliocephalus* colony. The majority of the comments asked that the proposal be declared a controlled action to address potential significant impacts of the action. No comments from state or Commonwealth Ministers were received.

Section 74 (A)

Section 74A of the EPBC Act states that, if the Minister receives a referral in relation to a proposal to take an action by a person, and the Minister is satisfied the action that is the subject of the referral is a component of a larger action the person proposes to take, the Minister may decide to not accept the referral. Having regard to the objectives of the EPBC Act and the nature of the proposed action, the Department believes it is not part of a larger action in context of the referral, and can be accepted as a distinct action.

Precautionary principle (s391)

In making your decision, you are required to take account of the precautionary principle (s391). The Department has taken this principle into account in providing its advice.

Based on the information available, the Department is of the view that the proposed action is a **controlled action**.

If you agree that the action is a controlled action, you must decide on the approach for the assessment, in accordance with s87 of the EPBC Act. In making your decision you must consider the matters summarised in the table below:

Matter to be considered	Comment
Information relating to the action provided in the referral – s87(3)(a)	Relevant information from the referral is considered in the brief and discussed below. A copy of the referral is at Attachment A to the decision brief.
Any other information about the impacts of the action considered relevant – s87(3)(b)	Relevant information is discussed in the Department's advice on relevant impacts as set out below. Documents supporting the referral are at Attachment A and other relevant information sources are identified below.
Any comments received from a State or Territory minister relevant to deciding the appropriate assessment approach – s87(3)(c)	No comments were received from the Victorian Minister in response to an invitation under s74(2) for this proposal.
The matters prescribed by regulations – s87(3)(d) and s87(4A)	There are no relevant criteria or regulation for assessment approaches allowable under the EPBC Act (apart from assessment on referral information, which is not relevant).
Level of public comment/submission	Nine public submissions (plus one ministerial) were made in regards to the proposed action, refer to Attachment E . None of the submissions opposed the action, most were concerned that there would be a significant impact and that comprehensive assessment (Controlled Action) needs to be undertaken.

Pursuant to s87(5) of the EPBC Act, you may decide on an assessment on preliminary documentation only if you are satisfied that the approach will enable an informed decision whether or not to approve the taking of the action. In this case, the number and complexity of relevant impacts is locally confined. Assessment on preliminary documentation is considered appropriate.

Description of proposed action

The East Gippsland Shire Council (EGSC) has been undertaking a poplar removal program since 2003 along the Mitchell River, between Lind Bridge and the Princess Highway Bridge in Bairnsdale, Victoria. The poplars are targeted for removal by the ongoing program as they are an environmental weed, in a state of senescence and pose a public safety threat in the near future due to dead branches and severe lean angles. The program has been successfully ongoing for a number of years and is in accordance with the East Gippsland Environmental Sustainability Strategy 2008-2013.

The poplar programs next scheduled stage of action is the removal of trees used by the Grey-headed Flying-fox (*Pteropus poliocephalus*) as 'summer camp' habitat. The proposed action site is located adjacent to the northern side of the town of Bairnsdale on the Mitchell River approximately one kilometre downstream from the Lind Bridge. An area of approximately 0.5 hectares will be cleared of poplar trees and dense vegetation (refer to Photographs in **Attachment A**). It is proposed that the trees will be removed at the end of March 2010 (over a two week period) and burnt nearby during April 2010. The operational tree removal process will involve trees being completely removed on level ground or felled with stumps remaining in the ground on slopes. Tree poisoning is likely to occur three months prior to tree felling. The trees will not be removed if bats are present at the time of the scheduled operations. Revegetation activities will commence following removal.

The Victorian Department of Sustainability and Environment (DSE) are aware of the proposed action (pers. comm. s22, DSE, Wildlife Officer). The DSE have been involved in monitoring the Bairnsdale *P. poliocephalus* colony since they arrived in 1995. The colony averages approximately 3,000 individuals each year, with one season (2006) recording 34,000 individuals (pers. comm. DSE). *P. poliocephalus* has also been recorded overwintering at the camp site in 2003, young pups were recorded in October of that same year. The DSE will be involved in investigating other potential 'summer camp' locations where the *P. poliocephalus* may relocate (pers. comm. DSE).

Alternate Approach

The EGSC has identified an alternative approach to the removal of poplars at the project site along the Mitchell River. They have identified that the distribution of poplars along the Mitchell River in the program activity zone will allow for continued removal of poplar species. Staged removal of the area of poplars used by *P. poliocephalus* is an option while allowing the poplar program to continue. It is considered that staged removal could occur over a three year period allowing *P. poliocephalus* opportunities to relocate and present enhanced opportunities to manage the relocation to other suitable habitat.

The poplar removal program represents a concerted community effort by EGSC, East Gippsland Catchment Management Authority (EGCMA) and the Bairnsdale Urban Landcare Group. The program is being funded by the EGSC, EGCMA and Landcare.

Potential Impacts on Protected Matters

One threatened ecological community, 14 listed threatened species and 13 listed migratory species were identified as potentially occurring within a five kilometre radius of the subject site using the EPBC Protected Matters Search Tool (PMST).

The proposed action is located within close proximity to the listed Ramsar site – Gippsland Lakes.

Ramsar Wetland

Gippsland Lakes

The proposed action is to be conducted adjacent to the Mitchell River which runs into Gippsland Lakes Ramsar Wetland site.

The proposed action is approximately one kilometre north of the Ramsar wetland. Direct impacts on the wetland are not anticipated. Indirect impacts may occur, however due to the removal of a relatively small area of poplar trees (approx. 0.5ha) and the aims of the poplar removal program along the Mitchell River to increase the health of the river system and the riparian area, indirect impacts aren't considered likely. Erosion control measures to minimise run off from ground disturbance caused by the proposed action will be undertaken and work will not be undertaken in period of high erosion incidence. The site will also be revegetated following the poplar removal. These measures will reduce potential impacts to the Mitchell River and the associated Gippsland Lake Ramsar site.

Formal advice received from the Wetlands Section indicates that a significant impact on the Gippsland Lakes Ramsar site is unlikely (refer to advice included at the back of this Attachment).

On the basis of information provided to the Department, it is not expected or considered likely that the proposed action will lead to a significant impact on the ecological character of the Gippsland Lakes Ramsar site.

Threatened Ecological Communities

One ecological community was identified as likely to occur within the development site. However, it is not expected that the ecological community *Gippsland Red Gum (Eucalyptus tereticornis subsp. mediana)* Grassy Woodland and Associated Native Grassland would be impacted on as the proposed action would not be within or adjacent to an area where this community is present.

Threatened Species

Nine threatened species addressed in the following paragraphs have been identified as potentially occurring (likely or known habitat present) within a five kilometre radius of the study site.

Grey-headed Flying-fox (*Pteropus poliocephalus*)

The Grey-headed Flying-fox is listed as *vulnerable* under the EPBC Act. This species has been identified within the project site. It is also known to utilise habitat nearby (within the town of Bairnsdale).

Population Information (including Bairnsdale colony)

P. poliocephalus is highly mobile and the national population is fluid, moving up and down the east coast in search of food. There are no separate or distinct populations of Grey-headed Flying-foxes, with constant genetic exchange and movement between camps throughout the entire geographic range of the species. This indicates that there is one single interbreeding population. In considering whether or not this is an 'important population', this population is likely to provide an important source for breeding and dispersal. This colony is used as a maternity roost and nursery for several weeks in summer (December to March). It is therefore considered that the Bairnsdale Grey-headed Flying-fox colony is an important population in line with the definition provided in the Significant Impact Guidelines (EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance, May 2006).



The DSE was contacted regarding additional colony number counts since 1995 as they have been involved in monitoring the colony. They provided the Department with the following data in the Table below.

Year	1 st count	Last count	Lowest	Highest	Average	Comment
1995	12/04/1995			1870		
2002-2004	17/11/2002	27/06/2004	114	3500	1079	Only year overwintering recorded and pups present 17/10/2003
2006	13/03/2006	2/06/2006	947	34110	11634	
2007	6/02/2007	19/03/2007	100	500	267	
2008	22/12/2007	26/05/2008	122	3340	2320	
2009	12/12/2008	16/04/2009	200	4510	1775	Heat stress event – 330 recorded (57% male)

Other important information regarding the Bairnsdale colony is listed below:

- They are generally present at the site between December to March each year (one exception was in 2003 when they overwintered at the site).
- The site is likely to be used as a maternity site as young will still be present and dependent on the mothers. Lactating females would be present.
- Both males and females have been recorded at the site therefore it's likely that courting activities occur at the camp.

Habitat

P. poliocephalus requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, *Melaleuca* swamps and *Banksia* woodlands. It also feeds in introduced tree species in urban areas and in commercial fruit crops. The primary food source is blossom from *Eucalyptus* and related genera but in some areas it also utilises a wide range of rainforest fruits.

P. poliocephalus roosts in aggregations of various sizes on exposed branches, commonly of emergent trees. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of *Melaleuca*, mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and suburban areas. The species can maintain fidelity to roost sites for extended periods, although new sites have been colonised in recent times.

Lifecycle

P. poliocephalus commence giving birth to young in late September / October and continue to late November or early December. A small number are born later in some years. Females have single young that begin to fly independently at approximately 12 weeks, and roost with their lactating mothers, to at least 16 weeks. There is a period from mid December to mid January when the normal birth phase is complete and all the season's young are roosting with their mothers. The 'summer camp' located at the project site is likely to be used as a maternity roost and used during the nursery phase of the life cycle (young pups have been recorded at the camp in 2003), therefore this site is of particular importance. Both males and females have been recorded at the camp site. During the nursery phase it appears the males rejoin the females. It is highly likely that the males attempt to court females with pair bonds being formed at this site.

Proposed Action and potential Impacts

The proposed action will involve the removal of a number of poplar trees (0.5 hectares) adjacent to the Mitchell River which have been identified as being utilised by *P. poliocephalus* as a 'summer camp'. The camp is currently used by approximately 3,000 - 5,000 individuals (on average) over summer. Generally flying fox camps are used as day refuges by animals that forage in surrounding areas over several weeks, and as short-term stopover sites during migration. For several weeks in late spring and summer they provide refuge for the flying foxes. This group of flying foxes is closely monitored by the DSE. The removal of the poplar trees is proposed to be undertaken in late March 2010. The bats should have moved away from the site by this time. If bats are present at the site, removal of poplar trees would cease. Removal will involve poisoning the trees three months prior to them being felled. Poisoning the trees will ensure that they do not regenerate and may cause the trees to shed leaves, however this is unlikely to disturb flying foxes if they are present.

The loss of roosting habitat has been identified as a threat to Grey-headed Flying-foxes (Draft National Recovery Plan July 2008). Little is known of the specific requirements Grey-headed Flying-foxes need for roosting habitat. The impact of the loss of long-term sites, or the degradation of small remnants to the point that they are no longer used, is also not known (SPRAT). The poplars which are to be removed are currently in a state of senescence and pose a public safety threat in the near future due to dead branches and severe lean angles. DSE have recognised that this stand of poplars are likely to be dead within five years time, hence the camp will be destroyed.

The EGSC has also suggested an alternative to the removal of the poplar trees. This would involve the staged removal of the area of poplars used by *P. poliocephalus* over a three year period allowing the flying foxes to relocate and present enhanced opportunities to manage the relocation to other suitable habitat. This may reduce the impacts on the bats however it still does not account for the destruction of a camp site for this species. It may in fact lead to the group of bats being divided and potentially made into two smaller populations (fragmentation). Knowledge of the movement patterns of Grey-headed Flying-foxes and the factors influencing the establishment and persistence of camps is currently limited.

In accordance with the *Significance Guidelines (EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance, May 2006)*, it is considered that the proposed action is likely to have a significant impact on *P. poliocephalus* due to:

- The removal of an area containing poplar trees (0.5 hectares) known to provide a 'summer camp' for the *P. poliocephalus* which represents an area of occupancy of an important population.
- Fragmentation of the existing important population into two or more populations. Partial or whole removal of camp habitat may lead to the Bairnsdale *P. poliocephalus* colony to disperse thus there is the potential for the colony to split into smaller groups if suitable habitat is not available.

- Disrupting the breeding cycle of an important population. The camp site has been identified as a maternity/nursery roost where young are reared by their mothers. The removal of roosting trees is likely to place stress on returning lactating females and young. Other factors such as lack of suitable roost habitat to deal with high risk weather events (high temperatures) may also result in young and adult fatalities.
- The removal of a 'summer camp' is likely to adversely affect habitat critical to the survival of this species. The Draft National Recovery Plan (July 2008) identifies roosting habitat critical to the survival of *P. poliocephalus* as the following:

On the basis of current knowledge, roosting habitat that meets at least one of the following criteria can be explicitly identified as habitat critical to survival, or essential habitat, for Grey-headed Flying-foxes. Roosting habitat that:

- 1. is used as a camp either continuously or seasonally in >50% of years*
- 2. has been used as a camp at least once in 10 years (beginning in 1995) and is known to have contained > 10,000 individuals, unless such habitat has been used only as a temporary refuge, and the use has been of limited duration (i.e. in the order of days rather than weeks or months)*
- 3. has been used as a camp at least once in 10 years (beginning in 1995) and is known to have contained > 2,500 individuals, including reproductive females during the final stages of pregnancy, during lactation, or during the period of conception (i.e. September to May).*

The 'summer camp' that will be impacted as a result of the proposal meets all three of the above listed criteria. Therefore it is identified as habitat critical to the survival of this species.

Limited measures to avoid and reduce impacts stated in the referral include:

- Poplar trees will not be removed if the bats are present at the time of intended operations. If present operation works would be postponed until the bats have departed. Works are proposed after the bats have left the roost (end of March 2010).
- Staged removal of trees may help encourage the bats to find suitable habitat at another location and reduce sudden change in conditions at the site.
- A three year staged removal program would present a practical option for the limited size of the site if this option was required to be exercised.

The EGSC states that suitable roosting habitat is available locally for this species to disperse to, however no alternative roosting sites have been identified in the referral. To reduce potential impacts on this species further study and investigation needs to be undertaken to determine if and where suitable roosting habitat occurs locally. Management measures also need to be formulated to address how the *P. poliocephalus* will be encouraged to relocate to a new site and what measures would be in place to reduce potential disturbances to humans.

The referral fails to identify specific impacts of the tree removal program and ways in which they will be managed and mitigated. Further investigation needs to be undertaken to fully address potential impacts of the proposed action and how impacts can be reduced and appropriately managed.

Public Comments

Nine public comments were received in regards to this proposed action and the implications it might have on the *P. poliocephalus* colony in Bairnsdale. Public comments are provided in Attachment E. All issues raised by the public were generally common across the submissions. Submissions were not directly opposed to the action however considered it a controlled action which is likely to have a significant impact on *P. poliocephalus*. Below provides a summary of the main issues that were identified in the public submissions:

- Action is likely to have significant adverse impacts on *P. poliocephalus*.
- The referral should be assessed as a controlled action.
- Colony meets criteria to be considered critically important.
- Referral fails to identify alternative roosting habitat for the displaced flying foxes.
- Referral lacks details as to how flying foxes will be 'encouraged' to find alternative roost sites. Also sites that are of low human contention.
- Important site for rearing young.

- Site may be used by bats migrating east or west.
- A detailed assessment of potential impacts and further mitigations would be required to prevent a significant impact.
- Likely impacts to the flying foxes identified :
 - Disturbance to breeding cycle of the affected animals.
 - Fragmentation of existing colony.
 - Impacts on life-cycle (stress young and lactating mothers).
 - Risk of exposure to further dispersal action.
 - Dispersal of the camp (removing trees in stages is effectively a dispersal).
 - Deaths as a result of a heat event if the new site/s are poorly situated with regards to microclimate.

These issues were considered during the preparation of this advice.

The Department considers that the proposed action is likely to have a **significant impact** on the Grey-headed Flying-fox.

Swift Parrot (*Lathamus discolor*)

The Swift Parrot is listed as *endangered* under the EPBC Act.

L. discolor migrates from its Tasmanian breeding grounds to overwinter in the box-ironbark forests and woodlands of Victoria, New South Wales and southern Queensland. The proposed action is unlikely to impact on any known Swift Parrot habitat as no suitable habitat is present within the impact zone.

It is **not likely** that the proposed action will have a significant impact on *L. discolor*.

Giant Burrowing Frog (*Heleioporus australiacus*); Green and Golden Bell Frog (*Litoria aurea*); Growling Grass Frog (*Litoria raniformis*)

These three frog species are listed as *vulnerable* under the EPBC Act.

H. australiacus has been reported to occur in a wide range of forest communities including montane sclerophyll woodland, montane riparian woodland, as well as wet and dry sclerophyll forest. Mating occurs in ephemeral pools, slow or standing water such as small soaks formed in eroded sandstone drainage lines, and is rarely associated with permanent ponds or streams. The Mitchell River located adjacent to the project site provides potential breeding habitat for this frog. The poplar trees to be removed provide marginal habitat during colder months.

L. aurea in Victoria is predominantly found on the coastal plains and low foothills of the hinterland where it has been recorded in a range of lentic (still water) and terrestrial habitats. Breeding has been documented from dams in both forested and cleared areas, swamps in farmland, gravel pits, billabongs, marshes, coastal lagoon wetlands, wet swale herblands and isolated stream-side pools. The Mitchell River located adjacent to the project site may provide marginal breeding habitat for this frog.

L. raniformis mainly inhabits emergent vegetation in slow moving water bodies and is dependent on lagoons for breeding. Terrestrial vegetation and rocks are also used as basking habitat. *L. raniformis* has been recorded locally in Mitchell River. Marginal overwintering habitat is located within the project site (eg. logs, dense vegetation).

Whilst marginal habitat is located within or adjacent to the project site for these species of frog, erosion control measures to minimise run off from ground disturbance caused by the proposed action will be undertaken and work will not be undertaken in period of high erosion incidence. These measures will reduce any potential impact to the Mitchell River and associated populations of *H. australiacus*, *L. aurea* and *L. raniformis* should they be present. Marginal overwintering habitat is located within the project site however the proposed action is likely to be undertaken in March 2010 and is therefore unlikely to disturb any overwintering frogs.

It is anticipated that the long term removal of poplar trees and revegetation of the Mitchell River corridor will improve riparian habitat, hence enhance habitat for these listed species.

It is **not likely** that the proposed action will have a significant impact on *H. australiacus*, *L. aurea* and *L. raniformis*.

Eastern Dwarf Galaxias (*Galaxiella pusilla*); Australian Grayling (*Prototroctes maraena*)

The Eastern Dwarf Galaxias and Australian Grayling are listed as *vulnerable* under the EPBC Act.

G. pusilla is typically found in still waters such as swamps, drains, and backwaters of creeks and streams. It usually occurs in shallow waters (often less than 30 cm deep) with abundant aquatic vegetation. The Mitchell River adjacent to the proposed action site provides marginal habitat for *G. pusilla*. One local record is held for this species in the Macleod Morasses (Gippsland Lakes Ramsar site), which is approximately four kilometres from the action site. Other galaxias species have been recorded within the Mitchell River Basin.

P. maraena spends only part of its lifecycle in freshwater, where running ripe (ready to spawn) specimens have been captured. The newly hatched fry are presumably swept downstream to brackish water in an estuary or to the ocean where they remain for around six months. The Mitchell River adjacent to the proposed action site supports a known population of *P. maraena*.

Erosion control measures to minimise run off from ground disturbance caused by the proposed action will be undertaken and work will not be undertaken in a period of high erosion incidence. These measures will reduce any potential impact to the Mitchell River and associated populations of *P. maraena* and *G. pusilla* should they be present.

It is **not likely** that the proposed action will have a significant impact on *G. pusilla* or *P. maraena*.

Maroon Leek-orchid (*Prasophyllum frenchii*); Dwarf Kerrawang (*Rulingia prostrate*)

The Maroon Leek-orchid and Dwarf Kerrawang are listed as *endangered* under the EPBC Act.

P. frenchii grows mainly in open sedge swampland or in wet grassland and wet heathland generally bordering swampy regions. It occurs generally on low-altitude, flat, moist sites. The species occurs in Central Gippsland Plains Grassland and South Gippsland Plains Grassland, both these vegetation communities are not present at the project site.

In Victoria, *R. prostrate* grows on swampy land and lake margins. No suitable habitat is present within the project site.

The proposed action is not likely to result in a significant impact on any of these species which prefer wetter habitat that is not present in the impact zone.

Migratory Species

There are three listed migratory species identified as known or likely to occur within a five kilometre radius of the proposed action.

Satin Flycatcher (*Myiagra cyanoleuca*); White-bellied Sea-Eagle (*Haliaeetus leucogaster*); Sharp-tailed Sandpiper (*Calidris acuminata*)

Suitable habitat for the above mentioned species is not present within the project area. None of these species are expected to rely on habitat within the project area. Accordingly, it is considered that significant impacts on the above listed migratory species are not likely.

World Heritage

The proposed action is not being undertaken in a world heritage area and impacts on any world heritage area are not considered likely.

National Heritage

The proposed action is not being undertaken in a national heritage area and impacts on any national heritage area are not considered likely.

Commonwealth marine

The proposed action is not being undertaken in a Commonwealth marine area and impacts on any Commonwealth marine area are not considered likely.

Nuclear actions

The proposed action is not a nuclear action as defined under the EPBC Act.

Commonwealth action

This proposed action is not being undertaken by a Commonwealth entity.

Commonwealth land

The proposed action is not on or near Commonwealth land and is not being taken by the Commonwealth. A significant impact on the environment on Commonwealth land or on the environment from an action taken on Commonwealth land is not expected or considered likely.

References:

Australian Wetlands Database and Water Reform Division (Wetlands Advice)

Referral documentation (including Photographs)

SPRAT (Species Profile and Threats Database)

Draft National Recovery Plan for the Grey-headed Flying-fox (*Pteropus poliocephalus*) (July 2008)

DEWHA internal resources (EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance, May 2006).

Personal Communication –

s22 [REDACTED]. The Department of Sustainability and Environment. Wildlife Officer (Bairnsdale). August 4th 2009. Telephone conversation (see back of this Attachment).



**Notification of
REFERRAL DECISION AND DESIGNATED PROPONENT – controlled
action
DECISION ON ASSESSMENT APPROACH**

**East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox
(*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)**

This decision is made under section and section 87 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

proposed action	To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (<i>Pteropus poliocephalus</i>) in Bairnsdale, Victoria [see EPBC Act referral no. 2009/5017].
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decision on proposed action	The proposed action is a controlled action. The project will require assessment and approval under the EPBC Act before it can proceed.
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relevant controlling provisions	Listed threatened species and communities (sections 18 & 18A)
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designated proponent	East Gippsland Shire Council
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assessment approach	The project will be assessed by preliminary documentation.
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Decision-maker

Name and position	Michelle Wicks A/g Assistant Secretary Environment Assessment Branch
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Signature

date of decision	25 August 2009
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s22

Environment Officer
East Gippsland Shire Council
P.O. BOX 1618
BAIRNSDALE VIC 3875

Date: 25 August 2009
EPBC Ref: 2009/5017
EPBC contact: s22
Ph. 02 6475 s22
s22 @environment.gov.au

Dear Mr s22

Decision on referral

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)

This proposed action, to remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council's poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes in Bairnsdale, Victoria, has now been considered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

We have decided that the proposed action is a controlled action and, as such, requires assessment and approval by the Minister for the Environment, Heritage and the Arts before it can proceed.

It appears that the proposed action is likely to have a significant impact on the following matters protected by the EPBC Act:

- Listed threatened species and communities (sections 18 & 18A) – vulnerable Grey-headed Flying-fox (*Pteropus poliocephalus*)

For example, based on the information available in the referral, the proposed action is likely to have a significant impact because:

- it will involve the removal of an area containing poplar trees (0.5 hectares) known to provide a 'summer camp' for the *P. poliocephalus* which represents an area of occupancy of an important population.
- it is likely to cause fragmentation of the existing important population into two or more populations. Partial or whole removal of camp habitat may lead the Bairnsdale *P. poliocephalus* colony to disperse thus there is the potential for the colony to split into smaller groups if suitable habitat is not available.
- it is likely to disrupt the breeding cycle of an important population. The camp site has been identified as a maternity/nursery roost where young are reared by their mothers. The removal of roosting trees is likely to place stress on returning lactating females and young.
- the removal of a 'summer camp' is likely to adversely affect habitat critical to the survival of this species.

Please note that this decision only relates to the potential for significant impact on the specific matters protected by the Australian Government under Chapter 4 of the EPBC Act.

We have also decided that the project will need to be assessed through preliminary documentation.

Each assessment approach requires different levels of information and involves different steps. All levels of assessment will include a public consultation phase, *in which any third parties can comment on the proposed action.*

A copy of the document recording these decisions is enclosed.

While we have determined that your project will be assessed by preliminary documentation, we require some further information to be able to assess the relevant impacts of the action. Information required is outlined below.

A management strategy for the Bairnsdale *P. poliocephalus* colony needs to be developed. Within this document the following issues need to be included and addressed:

1. Detailed description of the proposed action with potential feasible alternatives (including do nothing scenario).
2. Details of the Bairnsdale *P. poliocephalus* colony. (eg. summer camp footprint, the role the camp plays in the lifecycle of the flying-fox, frequency and length of occupation and history of the camp's use, and native food resources available within 50kms).
3. Relevant potential impacts associated with the proposed action to the *P. poliocephalus* colony for example:
 - Potential direct, indirect and consequential impacts.
 - Nature and extent of long term and short term impacts to health and breeding cycle.
 - Potential fragmentation and dispersal of colony.
 - Statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible.
 - Analysis of significance of the relevant impacts. For example, risk assessment undertaken in consultation with relevant stakeholders, including the Victorian Department of Sustainability and Environment (DSE).
4. Any technical data and other information used or needed to make a detailed assessment of the relevant impacts.
5. Detailed analysis / survey of potential and suitable nearby roost sites to accept relocating *P. poliocephalus*, including discussion of the issues associated with relocation such as the risk to relocating flying foxes, overcrowding, defoliation, proximity to residential/urban areas, whether Grey-headed Flying-foxes have used these sites before, and the security of the sites in the long term. Long-term security and community acceptance of alternative sites is vital.
6. Proposed safeguards and mitigation measures. Information must be provided on mitigation measures. Measures must be undertaken to prevent, minimise or compensate for the relevant impacts of the action. This should include:
 - Investigation into alternative suitable sites for relocation (including historical camp sites) within the local area. New sites should contain native vegetation suitable for roosting (eg. riparian vegetation), have at least as large an area as the existing camp to support equivalent number of animals and have foraging resources that are at least equivalent to those accessible within 50 kms of the current site.
 - Methods utilised to encourage *P. poliocephalus* to take up residency at appropriate sites.
 - Contingencies for events such as *P. poliocephalus* relocating to areas that had not been identified as preferred relocation sites, the presence of pregnant or lactating *P. poliocephalus* or with young.
 - Details of on-going monitoring to ensure that relocation has been successful and impacts to the colony are recorded. Details of who would be involved in on-going monitoring and implementation of the management strategy. Ensure that the best possible outcome for flying-foxes and the community is planned for. Details on how the monitoring information will be utilised.
 - Animal Welfare - assess and plan for animal welfare.
7. Information on consultation and communication activities undertaken with government agencies, the local community and qualified ecologists or bat experts. As DSE has been involved in the ongoing monitoring of this species it is important that they are consulted throughout the development of a management strategy.

Once we have received the above information, you will be provided with clear instructions on the public consultation requirements to progress assessment of this project. Details on the assessment process for the project and the responsibilities of the proponent are set out in the enclosed fact sheet. Further information is available from the Department's website at <http://www.environment.gov.au/epbc>.

The assessment officer will contact you shortly to discuss the assessment process.

I have also written to the Victorian Department of Planning and Community Development (Planning Policy and Reform).

If you have any questions about the referral process or this decision, please contact the EPBC project manager and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely



Michelle Wicks
A/g Assistant Secretary
Environment Assessment Branch



Mr Jeff Gilmore
Executive Director
Planning Policy and Reform
Department of Planning and Community
Development
GPO Box 2392
MELBOURNE VIC 3001

Date: 25 August
EPBC Ref: 2009/5017
EPBC contact:

s22

environment.gov.au

Dear Mr Gilmore

Decision on referral

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)

This proposed action, to remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council's poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes in Bairnsdale, Victoria, has now been considered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

We have decided that the proposed action is a controlled action and, as such, requires assessment and approval by the Minister for the Environment, Heritage and the Arts before it can proceed.

It appears that the proposed action is likely to have a significant impact on the following matters protected by the EPBC Act:

- Listed threatened species and communities (sections 18 & 18A) – *vulnerable* Grey-headed Flying-fox (*Pteropus poliocephalus*)

For example, based on the information available in the referral, the proposed action is likely to have a significant impact because:

- it will involve the removal of an area containing poplar trees (0.5 hectares) known to provide a 'summer camp' for the *P. poliocephalus* which represents an area of occupancy of an important population.
- it is likely to cause fragmentation of the existing important population into two or more populations.
- it is likely to disrupt the breeding cycle of an important population.
- the removal of a 'summer camp' is likely to adversely affect habitat critical to the survival of this species.

Please note that this decision only relates to the potential for significant impact on the specific matters protected by the Australian Government under Chapter 4 of the EPBC Act.

We have also decided that the project will need to be assessed through preliminary documentation.

A copy of the document recording these decisions is enclosed.

I have also written to the proponent, East Gippsland Shire Council, to advise them of this decision.

If you have any questions about the referral process or this decision, please contact the EPBC project manager and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely



Michelle Wicks
A/g Assistant Secretary
Environment Assessment Branch

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The following information is provided for your information. It is not a legal document. It is for information only. It is not to be used for any other purpose. It is not to be used for any other purpose. It is not to be used for any other purpose.

s47F

Maleny Qld 4552

9th August 2009

Minister Peter Garrett,
Referral Business Entry Point
Environment Assessment Branch
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
CANBERRA ACT 2601

Re: Referral under the EPBC Act 2009/5017

Dear Minister Peter Garrett,

If the East Gippsland Shire Council are allowed to cut the poplar trees down, without making proper arrangements for the flying-foxes that use the site each summer, it will have a similar effect for the flying-foxes as disturbance.

Disturbances are associated with the risk of significant harm to the grey-headed flying-fox, a species listed under s.18 of the EPBC.

It is important that this action is a controlled action so that you can satisfy yourself that East Gippsland Shire Council are doing everything that needs to be done to eliminate the risk to the flying-foxes proposed by this action.

Please take care in your decision and protect these necessary creatures.

Sincerely,

s47F

6 August 2009

Minister Peter Garrett
Referral Business Entry Point
Environment Assessment Branch
Department of the Environment, Water, Heritage and Arts
GPO Box 787
CANBERRA ACT 2601



Dear Mr Garrett,

RE: Referral under the EPBC Act 2009/5017

I write with some concerns about the ^①grey headed flying fox ^②(GHFF) camp in ^③Riverine Street, Bairnsdale and the referral of this matter from the Environment Protection and Biodiversity Conservation (EPBC) Act. As you may know the trees the flying foxes use for roosting are all poplars and these trees are dying. I understand that getting rid of them will help complete the poplar eradication program and make the area safer as the dying trees are more likely to fall. I'm also aware there are trees that have been planted on the other side of the river, as part of the poplar eradication program. The Department of Sustainable Environment (DSE) has advised that those trees are not yet mature enough for the bats to roost in.

This is an extremely important camp for flying foxes as it has been used each year since at least 2002 (except in 2005) as a place for the bats to raise their pups. Animals have most commonly been present from December to April in large numbers, the last count being 4,600 at the end of January 2009.

Removal of the trees, either at one time, or staged over three years, without providing other roost trees in the same site, will effectively mean a dispersal of the bats.

The East Gippsland Shire Council (EGSC) acknowledges that the proposed action should be controlled because of the potential impact on the flying foxes and I agree with them. However, removing the trees in stages without taking any further action is inadequate as it does not provide any more roosting habitat at the site to replace the poplars being removed.

There are other camp sites within the local district that flying foxes have used; however, no usage of these sites has been recorded in the last decade. It is possible that the flying foxes may go to one of those sites but as the bats have not used them in the recent past, this is far from certain.

Although the trees are proposed to be removed while the bats are not there (i.e. in winter), it seems that the likely result is that the animals, upon their return, will find the nearest stand of trees to the Riverine Street colony site to roost in.

The bats most commonly return to Bairnsdale in early-mid December. At this time the young are still wholly dependent upon their mothers and returning to a camp site that is

partly or wholly removed is likely to be stressful for the flying foxes. Stressed lactating flying foxes may stop lactating or have reduced output which may put the young at risk.

The EPBC referral appears to have given no thought as to where the bats may relocate to, other than suggesting that 'where possible the bats will be encouraged to adopt habitat of low human contention.' (p 5, EPBC referral). There is no information about what would be used to 'encourage' the animals, how it would be applied or what circumstances it would be used in.

The risks to this very important colony of flying foxes are wide-ranging and include:

- fragmentation of the camp into smaller groups if the close stands of trees cannot manage the number the old stand could
- disturbance of breeding, including an impact upon the success of the raising of young – further disturbance if the new site/s are more inconvenient to people
- deaths in the result of a heat event if the new site/s are more poorly situated with regards to microclimate (NB there were 330 deaths at Bairnsdale in 2009, notwithstanding that it is on a river).

I would strongly request that you review this matter with some urgency. I understand that planning of the action is at a very early stage so there is a good opportunity still available for consultation and reduction of the risks to the flying fox colony. The desired outcome would be a controlled action over a longer period of time to give the flying foxes a chance to colonise their new camp with as little stress as possible. As the camp is not very contentious in the local community and has only a few direct neighbours with other houses across the street, this would appear to be the best way to approach the problem.

I look forward to your early response.

Yours faithfully

s47F

Moruya Heads NSW 2537

Email: **s47F** com.au

Received
Date: 11/8/09
By: CR
✓

s47F

EMAIL

Minister Peter Garrett

epbc.referrals@environment.gov.au

Referral Business Entry Point
Environment Assessment Branch
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
CANBERRA ACT 2601

RE: Referral under the EPBC Act 2009/5017

Dear Minister Garrett

I wish to draw to your attention the proposed action at Bairnsdale for the removal of trees by The East Gippsland Shire Council in Riverine St, Bairnsdale.

I would like to request that you ensure that this action is a controlled action so that you can satisfy yourself that East Gippsland Shire Council do everything necessary to eliminate risk to the flying-foxes who inhabit this area.

A number of Grey Headed Flying Foxes are known to use this area each summer. As I am sure you are aware – Grey Headed Flying Foxes are a listed species under s.18 of the EPBC.

If the East Gippsland Shire Council are allowed to cut the poplar trees down, without making proper arrangements for the flying-foxes that use the site each summer, it will have a similar effect for the flying-foxes as disturbance. Disturbances are associated with the risk of significant harm to the grey-headed flying-fox.

I thank you for your time and in anticipation that you will make the correct decision in this matter.

Yours faithfully

s47F

epbc.referrals@environment.gov.au

s47F sub to referral No 2009-5017 Clearing of Vegetation used as a camping site by Pteropus poliocephalus Grey Headed Flying Fox

My main concerns are as follows –

1/ The action proposed is to clear all the trees from a site currently used as a summer camp site by the Grey Headed Flying Fox (GHFF), where the numbers have reached as high as 25,000 individuals. Is the proposed action the only option? Could the site be fenced off until suitable habitat could be reconstructed there e.g. part clearing and replanting?

2/ The current site seems to be central to feeding sites for the bats i.e. to the south along the coast where the bats feed on banksias, etc. and to the north where the bats feed on eucalypts etc. Is there an alternative site that will be used by the GHFF as a roosting site and will that site give adequate protection? (Large numbers of bats are killed by summer heat waves – more than 2,300 in one day in Yarra Bend Park last summer).

3/ The camp at Bairnsdale may well be a site used by bats migrating east or west along the coast to preferred feeding areas. There is a large population of bats at Yarra Bend Park in Melbourne, which fluctuates in numbers, characteristically being much reduced in winter. It is likely bats from Melbourne migrate east then north along the coast, passing through the Bairnsdale area and back again. What will be the impact on the GHFF population if the camp at Bairnsdale is removed and not replaced?

Note: there does not seem to be a GHFF camp at Lakes Entrance at present, although there has apparently been some in the past.

4/ Why are GHFF camps (apparently) increasingly in urban areas? If we don't understand this we will have ongoing problems. Some reasons for this trend might be -

- a/ land clearing
- b/ logging of native forest removes the older trees which flower more profusely large areas of Victoria's native forest are on increasingly short rotation
- c/ persecution by farmers
- d/ food trees planted in urban environments
- e/ security in urban sites from natural predators and farmers
- f/ bushfires – repeated severe fires takes out blossom production for a while
- g/ increasing incursion on GHFF habitat in coastal areas



Ku-ring-gai Bat Conservation Society Inc.

Post Office Box 607, Gordon NSW 2072 Australia

10 August 2009

Minister Peter Garrett
Referral Business Entry Point
Environment Assessment Branch
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
CANBERRA ACT 2601

Dear Minister,

**RE: East Gippsland Shire Council/Natural resources
management/Bairnsdale/VIC/Poplar Tree Removal Program - Grey Headed Flying Fox
Zone - Reference Number: 2009/5017**

Thank you for providing an opportunity to comment on the proposed poplar tree removal program by East Gippsland Shire Council. The Ku-ring-gai Bat Conservation Society Inc. (KBCS) considers that this tree removal program may have significant impacts on the Grey-headed Flying-fox and a more in-depth assessment and further mitigation actions would be required to prevent this from happening.

The Bairnsdale flying-fox camp is a 'summer camp', and as such, is important for the rearing of young. Flying-foxes return to the camp in early to mid December when young are entirely dependent on their mothers. Removing the roost trees, partially or entirely, from the camp site is likely to be very stressful for returning animals and is likely to result in the reduction or cessation of lactation in mothers, thereby putting the young at risk. The suggestion of staged removal of the trees will not mitigate this stress in the absence of alternative suitable roosting habitat at the site.

The time lag between the removal of the poplar trees currently used by flying-foxes for roosting and the availability of alternative roosting trees at the camp site will inevitably lead to dispersal of the camp. East Gippsland Shire Council do not consider the possible implications of the tree removal program on the flying-fox colony, particularly that it will result in the dispersal of the flying-foxes which could fragment the camp into smaller groups, disturb breeding by impacting on young, flying-foxes may settle in areas of high human contention leading to further disturbance, and may increase vulnerability to death from extreme heat events.

The principle that needs to be adopted and implemented in every case where there is a call to remove flying-fox camp habitat, is that first alternative habitat is grown. For example, a grove of fast growing Acacias inter-planted with tall growing eucalyptus and understorey species on nearby land could provide suitable habitat. The site needs to be away from human habitation but close to the site originally chosen by the flying-foxes. As camps are located close to food sources, removal of trees from a camp site could prevent flying-foxes from

using the nearby food sources and may cause the flying-foxes to move to another area to find food which will impact on other flying-fox colonies. Alternative habitat needs to be provided as close to the original site as possible so as to avoid this. Although, there is still a lot to learn about why flying-foxes chose their camp sites, there are common elements of most camps such as the tallest trees in the area, near water and in many cases the site is protected by the topography from adverse winds or human disturbance.

We ask that the potential impacts of this tree removal program be considered in greater depth and the proposal be declared a controlled action to avoid potential significant impacts to the Grey-headed Flying-fox.

Sincerely

A stylized signature consisting of the letters 'S47F' in a bold, black, sans-serif font, set against a light gray rectangular background.

Honorary Secretary

s22

From: s22
Sent: Monday, 10 August 2009 9:57 AM
To: s22
Cc: s22
Subject: FW: Referral under the EPBC Act - Reference Number: 2009/5017
[SEC=UNCLASSIFIED]

Categories: UNCLASSIFIED

Good morning,
Please find below a submission for 2009/5017.

Regards

s22

From: s47F
Sent: Monday, 10 August 2009 9:43 AM
To: EPBC Referrals
Subject: Referral under the EPBC Act - Reference Number: 2009/5017

To: Minister Peter Garrett

After examination of the material provided in the referral application 2009/5017, the referral is incomplete at this stage with insufficient planning to ensure that there are appropriate alternative sites for any affected animals.

Should these trees be removed (gradually or all at once), animals would be returning to the area with young and will likely take up residence nearby. There will be many potential risks caused by this stressing event for the animals, including a high risk of fragmentation, possible worse exposure to heat stress events and more inconvenience to people depending on the location of the chosen new site(s).

Suggesting that "[w]here possible the bats will be encouraged to adopt habitat of low human contention" (page 5, EPBC referral) is inappropriate as there no information about how the animals would be "encouraged", and what controls/processes would be applied.

I request that this matter is considered a controlled action and dealt with accordingly as there are many potential risks for the grey headed flying foxes.

Yours sincerely

s47F

s22

From: s22
Sent: Thursday, 6 August 2009 10:03 AM
To: s22
Cc: s22
Subject: FW: Referral under the EPBC Act 2009/5017" [SEC=UNCLASSIFIED]

Categories: UNCLASSIFIED

Hi s22

Public submission below in relation to 2009/5017

Regards

s22

Business Entry Point - Referrals
Environment Assessment Branch
Department of the Environment, Water, Heritage and the Arts
T: (02) 6275 s22

-----Original Message-----

From: s47F cyberspace.net.au]
Sent: Wednesday, 5 August 2009 4:19 PM
To: EPBC Referrals
Subject: Referral under the EPBC Act 2009/5017"

Dear Mr Garrett:

I write concerning the proposal by East Gippsland Council to remove the poplar trees in Riverine St, Bairnsdale. I have been told this is a roost colony for grey-headed flying foxes. Studying the information I have received regarding this proposal, I find a few worrying problems.

- * The trees they have planted for the bats to relocate to at the same site, are not mature enough for the bats to use immediately.
- * Though the trees are weed trees and are dying, the flying foxes are calling them home at present.
- * The flying foxes are using these trees as a maternity colony to raise their dependent young. To summarily reduce the amount of colony trees for them to return to for baby rearing will be to stress the animals at an already stressful time.
- * Removing the trees, even in stages over a few years, is effectively a dispersal. You cannot guarantee that the flying foxes will go to other stands where previously they have roosted but at which they haven't been seen in the last decade. After all - if they deserted the other colonies, there must have been a reason.
- * The proposal intends to encourage the bats to relocate to sites of low human contention. No mention of how this is to be achieved has been specified.

Thank you for reading this letter.

s47F
WIRES bat carer.

9th August 2009

The Hon Peter Garrett
Minister for Environment, Heritage and Arts
Referral Business Entry Point
Environment Assessment Branch
Department of the Environment, Water, Heritage and the Arts
GPO Box 787
CANBERRA ACT 2601

Re: Referral under the EPBC Act 2009/5017

I write on behalf of the Friends of Bats Victoria regarding the proposal by the East Gippsland Shire Council to remove all poplar trees on the camp site in Riverine St, Bairnsdale. The replacement of these senescent trees with other species is supported, however, we are concerned that the sudden removal of roost trees will effectively be a dispersal of a colony of *Pteropus poliocephalus* (Grey headed flying fox) that roost in these trees seasonally. This species that is listed as vulnerable to extinction and during the severe weather in February 2009 the species experienced a very high death rate (between 20% and 25%) in Victoria.

To manage the risks to this species, we support the proposal that the removal of roost trees at Bairnsdale be made a controlled action

Yours sincerely,

s47F
Spokesperson
Friends of Bats Victoria

s47F
Carlton North Vic 3054

The Hon Peter Garrett AM MP
Minister for the Environment, Water, Heritage and the Arts
c/o Referrals Section (EPBC Act), Approvals and Wildlife Division
Department of the Environment and Water Resources
GPO Box 787
Canberra, ACT 2601
epbc.referrals@environment.gov.au

Your reference 2008/5017

10th August 2009

Dear Minister,

This letter and attached submission are comments by Bat Advocacy NSW on referral 2008/4646 (East Gippsland Shire Council/Natural resources management/Bairnsdale/VIC/Poplar Tree Removal Program - Grey Headed Flying Fox Zone) under the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999.

We argue, in our submission, that the actions described in this referral, if carried out, are likely to have significant adverse impacts on the grey-headed flying-fox (*Pteropus poliocephalus*), a federally listed vulnerable species, and it should be rejected or, at very least, assessed as a controlled action.

We believe that the key factors are:

- That the colony meets all criteria to be considered critically important to the survival of the species
- The failure to provide or identify alternate roosting habitat for the displaced flying-foxes
- The likely impacts on the breeding cycle of affected animals
- The absence of any detail as to how flying-foxes will be "encouraged" to find alternative roosting habitat

We hope our submission assists in your consideration and look forward to your response. Please feel free to contact s47F on s47F or bansw@fastmail.com.au should you have any questions about our submission.

Sincerely

s47F

Bat Advocacy

Bat Advocacy

Referral:	2009/5017
Referral Title:	East Gippsland Shire Council/Natural resources management/Bairnsdale/VIC/Poplar Tree Removal Program - Grey Headed Flying Fox Zone
Proponents:	East Gippsland Shire Council
Document Purpose	Assessment of referral document and associated documentation

The East Gippsland Shire Council (EGSC) proposes to remove a stand of poplar trees in Riverine St Bairnsdale as part of a long term poplar eradication programme. The affected trees, which are nearing the end of their life span and are likely to create a hazard to the public, are currently used as a camp site by a colony of grey-headed flying-foxes (*Pteropus poliocephalus*).

The Victorian Department of Sustainability and the Environment (DSE) provided the following information about the flying-fox colony at Bairnsdale (personal correspondence, s22, 3rd August 2009):

1. The camp has been used in eight of the fifteen years since 1995
2. In 2006, a count indicated the presence of 34,100 animals
3. The camp has been used by more than 2,500 animals in the following years - 2002, 2003, 2004, 2006, 2008 & 2009 and that,
 - Pups were born in the camp in 2003
 - Lactation occurred in the camp in 2002, 2003, 2004, 2007, 2008 and 2009
 - Conception occurred in the camp in 2003, 2004, 2006, 2008 and 2009

Based on this information, the camp at Bairnsdale meets all three of the criteria used to define that a roosting site is "critically important to the survival of the [grey-headed flying-fox]" as described by the draft National Recovery Plan (Eby, P. 2006).

Effect of the action

The suggestion by EGSC that it stage the tree removal over a period of three years provides no mitigation for the loss of roosting habitat. The flying-foxes will still be required to find an alternate camp site and EGSC have made no suitable provision for this within its proposal.

Removal of the trees, regardless of the time frame for the removal, without providing alternative roost trees at the same location constitutes a dispersal of the colony.

Possible Outcomes and Risks to the Flying-foxes

Generally dispersals carry a range of risks for flying-foxes.

These risks can include:

- Fragmentation of the camp into smaller groups. This will depend on how the flying-foxes react to the absence of their previous roost site and the capacity of local alternate habitat to accommodate all of the displaced animals
- Disturbance of breeding through late term abortions
- Impacts that may affect the successful raising of young
- The need for ongoing follow-up disturbance if the dispersed flying-foxes select an alternate roost that brings them into conflict with humans

Although the proposal is for the trees to be removed during the winter months when there are no flying-foxes roosting at the site, this simply delays the problem until the bats return to roost at the

camp in spring. At that time, the bats will be forced to find an alternative roost site and it seems that the likely result will be that the animals will simply camp in a stand of trees close to the previous camp site.

Both DSE and the EGSC have indicated that there are trees on the opposite side of the river that have been planted as part of the poplar removal/bush regeneration project that could provide alternate habitat however DSE have informed us (personal communication, s22 [REDACTED], 29th July 2009) that, in its view, these trees are neither substantial nor numerous enough to accommodate the flying-foxes.

The majority of pregnant grey-headed flying-foxes will give birth over a three week period that commences between late September and early November (Hall, L. & Richards, G. 2000). Typically, the flying-foxes that use the Bairnsdale camp return there to the site between November and December. At this time it is most likely that the newborn young will still be wholly dependant upon their mothers. Returning to a camp site that is partly or wholly removed is likely to create stress conditions for the flying-foxes. Stressed females may stop lactating or have reduced milk output, which may put the young at risk. Stress may also affect those females that have not yet given birth and may create conditions under which the number of late-term stress related abortions would increase (McIlwee, A.P. & Martin, L. 2002).

The EGSC appear to have given no thought as to where the dispersed flying-foxes might be likely to relocate to or to have identified any sites it would consider suitable as alternative roosts. There is anecdotal information of other flying-fox camp sites within the local district however; no record exists of these sites being used in the last decade. Additionally, there are no records of the actual locations of these sites so it is possible that the previous roosts sites are no longer suitable habitat. Should these sites still be suitable habitat, it is possible that the flying-foxes may go to one of them. The lack of recent occupancy suggests that such an outcome is far from certain.

The EGSC state that "[w]here possible the bats will be encouraged to adopt habitat of low human contention" (page 5, EPBC referral). This gives a broad statement of intent but is not supported by any specific commitments or actions to suggest that they understand what will actually be required to encourage the bats to adopt suitable habitat.

The referral lacks any detail on

- What methods will be used to "encourage" the animals to adopt suitable habitats
- How the methods will be applied and under what circumstances they would be used
- How stress factors that impact the flying-foxes will be monitored
- What actions will be taken in response to any adverse impacts on the animals
- What measures will be taken for the welfare of animals that may come into care as a consequence of the action
- How the public will be informed about the action, its timing and possible outcomes

These must be addressed before EGSC proceeds with its planned poplar removal programme. The Coffs Harbour Camp re-sculpting project (EPBC referral number 2007/3771) provides a good model for how this project could be approached in a manner that minimises the likely impact on the grey-headed flying-foxes. A project of this type should enable the flying-foxes to be managed in their present location while still allowing the removal of the poplars. The EGSC should be encouraged to review projects of this nature and to determine how best they could be adapted to the local conditions at Bairnsdale.

Conclusion

Planning for this action appears to be at a very early stage with very little consideration having yet been given to the impacts of it on a federally listed vulnerable species. DEWHA needs to be assured

that the EGSC are able to plan and implement the project appropriately plan in a manner that mitigate against the risk to the listed species.

In its current form, the referral creates a number of risks to the grey-headed flying-foxes currently using the Bairnsdale camp site.

These risks include

- Fragmentation of an existing colony
- Impacts on the life-cycle of the flying-foxes in this population
- The risk of exposure to further dispersal action

The East Gippsland Shire Council (EGSC) acknowledges that the proposed action should be a controlled action because of the potential impact on the grey-headed flying-fox.

We agree with the assessment by EGSC. Given the status of the colony as “critically important to the survival [of the species]” and the likelihood of colony fragmentation and life-cycle impacts, it is clear that the proposal is likely to have a significant impact on the grey-headed flying-foxes that currently utilise the site and consequently, the referral should be determined to be a controlled action.

References:

Eby, P. 2006 Draft National Recovery Plan for the Grey-headed Flying-fox, *Pteropus poliocephalus*. NSW Department of Environment and Conservation, Sydney

Hall, Leslie, & Richards, Greg, 2000, **Flying-foxes Fruit and Blossom Bats**, UNSW Press

McIlwee, A.P. & Martin, L. (2002) On the intrinsic capacity for increase of Australian flying-foxes (*Pteropus* spp. Megachiroptera). *Aust Zool.* **32**, 76-100



VICTORIAN ADVOCATES *for* ANIMALS Inc.

"An end to harming..."

Vafa

PO Box 377

Carlton North, Vic. 3054.

Telephone: **s47F**

Email: **s47F@vtown.com.au**

www.vafa.org.au



10.8.09

Referral under EPBC Act 2009 / 5017

The Hon. Peter Garrett
Minister for Environment

Referral Business Entry Point
Environment Assessment Branch
Dept of Environment Water Heritage and the Arts
GPO Box 777
Canberra ACT 2601

Min No: C	Link:
Division: AWD	Date: 17/8/09
DLO: ce	
RECEIVED 14 AUG 2009	
EHA MINISTER	
<input type="checkbox"/> Covering Brief	<input type="checkbox"/> Departmental Reply
<input type="checkbox"/> VIP Reply	<input type="checkbox"/> Appropriate Action
<input checked="" type="checkbox"/> Minister Reply	<input type="checkbox"/> For Information (NFA)
<input type="checkbox"/> CoS/Adviser Reply	<input type="checkbox"/> Campaign
<input type="checkbox"/> Refer to:	

Dear Sir

I am writing in regard to the proposal cited above by the East Gippsland Shire Council to remove the roost trees (poplars) occupied by a colony of Grey-headed flying foxes (*pteropus poliocephalus*) without sufficient consideration for the relocation or welfare of the same.

Because of the importance of this camp for Victoria's Grey-headed flying foxes we believe any actions involving them should be a controlled action under EPBC.

The bats have used the current camp site at Bairnsdale almost exclusively for over a decade and it remains an uncontroversial one with the local community. It is an important stopover camp for the bats as they transit along the coast and is also used as a maternity site each year during the December period. Significant stress and loss of young may occasion a camp disturbance at this time.

While the removal of poplars from the environment may, in general, have merit. The EPBC referral appears perfunctory in its failure to acknowledge the importance of this particular stand of poplars for the bats - a federally listed and declining species.

Moreover, serious consideration needs to be given to the February 2009 heat event that according to ARCUE (Australian Research Centre for Urban Environment) killed some twenty five percent of Victoria's population of Grey-headed flying foxes. With forecasts predicting a similar Summer this year losses may well be catastrophic for this species in Victoria.

Removal of poplars, if necessary at all, should only be undertaken when mature alternative roost trees have been established at the current site and following a thorough evaluation of the impact management planning process. Something that appears lacking in the application in its current form.

Thank you.

Regards

s47F

President VAFA

Co9/14121

FOI 180819
Document 26

The Hon. Peter Garrett AM MP
Minister for the Environment, Heritage and the Arts
Parliament House
Canberra ACT 2006

11 August, 2009

Dear Minister,

RE: Referral under the EPBC Act 2009/5017

Min No: C	Link:
Division: AWD	Date: 11/8/09
DLO: CE	
RECEIVED 11 AUG 2009 EHA MINISTER	
<input type="checkbox"/> Covering Brief	<input checked="" type="checkbox"/> Departmental Reply
<input type="checkbox"/> MP Reply	<input type="checkbox"/> Appropriate Action
<input type="checkbox"/> Minister Reply	<input type="checkbox"/> For Information (NFA)
<input type="checkbox"/> CoS/Adviser Reply	<input type="checkbox"/> Campaign
<input type="checkbox"/> Refer to:	

I am asking you as Federal Minister for the Environment to consider the proposed tree removal in the Bairnsdale Flying Fox colony as a controlled action.

The East Gippsland Shire Council should not be permitted to remove trees from the Bairnsdale Flying Fox colony without due consideration to effects this could have on the summer roosting habitat of the Grey-headed Flying Fox listed as vulnerable under the Threatened Species Act.

The species are listed under s.18 of the EPBC. It is vital that the action be fully considered in order to eliminate the potential impacts and risks to the flying fox colony and species.

I look forward to your response.

Yours sincerely,

s47F

KURRAJONG NSW 2758



Contact:
Telephone No:
Email:

s22

vic.gov.au

25 March 2014

Corporate Centre

273 Main Street (PO Box 1618)
Bairnsdale Victoria 3875

Telephone: (03) 5153 9500

National Relay Service: 133 677

Residents' Information Line: 1300 555 886

Facsimile: (03) 5153 9576

Email: feedback@egipps.vic.gov.au

ABN: 81 957 967 765

s22

Senior Assessment Officer
South-Eastern Australia Environment Assessment Branch
Department of the Environment
PO Box 787
CANBERRA ACT 2601

Dear s22

Re: Draft Conditions – Referral 2009/5017, East Gippsland Shire Council

Thankyou for the opportunity to comment on the Draft conditions relating to this referral. I have enclosed 2 copies of the draft conditions with East Gippsland Shire Council's comments included in red text, and have advised the same via email. Please do not hesitate to get in touch at any time and I will respond as early as I possibly can.

Yours sincerely

s22

Roadside Pest Plant Officer



Proposed Approval

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted East Gippsland Shire Council

proponent's ABN 81 957 967 765

proposed action To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (*Pteropus poliocephalus*) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved.

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2022.

Decision-maker

name and position James Tregurtha
Assistant Secretary
South-Eastern Australia Assessment Branch

signature **NOT FOR SIGNATURE – DRAFT ONLY**

date of decision

Conditions attached to the approval

The following measures must be taken to ensure the protection of **listed threatened species and communities** (sections 18 & 18A), specifically the **Grey-headed Flying-fox (Grey-headed Flying-fox)**:

1. The person taking the action must not remove or adversely impact more than 0.5 hectares of **Grey-headed Flying-fox habitat** at the **Mitchell River Roost Site**.
2. The person taking the action must implement and comply with the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**.
 - *If possible, can a condition be added into that will allow EGSC to complete the necessary changes to the Management Action Plan after the decision date, for approval at a later date.*
3. The person taking the action must ensure that:
 - a) Prior to the **removal of habitat** at the **Mitchell River Roost Site** a **Hotline** with a dedicated contact phone number and email address is set up to respond to public enquiries;
 - *Council already has in place a 24hr contact service as part of its regular operations. Is a separate line a requirement or will advertising the main Shire numbers suffice given that a 24 hr service already is in operation?*
 - b) Prior to the **removal of habitat** at the **Mitchell River Roost Site** neighbouring Councils are notified of the proposal and provided with contact details to respond to enquiries;
 - *This involves notifying five Councils, 4 of which are located a great distance from the Roost Site – Council needs to understand the rationale for such notifications.*
 - c) Undertake revegetation of long-term **Grey-headed Flying-fox habitat** within the Bairnsdale area, in accordance with expert advice on **Grey-headed Flying-fox** ecology, subject to negotiation with and approval by, the **Department**. If a long-term **Grey-headed Flying-fox** camp is not established within the Bairnsdale area then revegetation or improvement of **Grey-headed Flying-fox habitat** within the Bairnsdale region must be undertaken; and
 - *Can we please define Bairnsdale 'area' and Bairnsdale 'region'.*
 - *Can some clarification be requested in the condition about where revegetation will occur (ie: Council's own land or any tenure). Who will determine which site is suitable for revegetation and improvement, DEPI and/or DE? What is the role of DE in negotiation and approval?*
 - d) At least \$5,000 is spent on community education resources relating to **Grey-headed Flying-fox**, including, but not limited to, educational signage at a site of **Grey-headed Flying-fox habitat**.
 - *Is this expenditure required over the period of the action – or some other timeframe?*
4. If, following the **removal of habitat** at the **Mitchell River Roost Site**, the person taking the action proposes to undertake a separate **dispersal** then a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
 - c) The presence of pregnant **Grey-headed Flying-fox**;
 - d) The presence of **dependant young**;

- e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
- f) Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
- g) Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.

- *What are the parameters and requirements around the decision for undertaking a dispersal? Will this information be required to be incorporated into the Management Plan, given the absence of this information with the removal of the Response Plan from the Management Plan? Are the conditions within the Response Plan sufficient to make this decision?*
 - *Time constraints on approval? Can a pro-forma management plan be developed in the time prior to any dispersal occurring (ie. prior to September) for approval by the **Department** as to the information and data required to report sufficiently for a faster turn-around of approval once compiled?*
5. The person taking the action may undertake an **emergency dispersal**. Unless *otherwise* negotiated with the **Minister** and approved, an **emergency dispersal** must be undertaken in accordance with the following requirements:
- A **suitably qualified ecologist** must be engaged to advise of best practice **dispersal** methodology;
 - During **emergency dispersal** a **suitably qualified ecologist** must be present to oversee best practice **dispersal** methodology, undertake **behavioural monitoring** and document the outcomes of the process;
 - During **emergency dispersal** the person taking the action must comply with all recommendations and guidance from a **suitably qualified ecologist**;
 - **Emergency dispersal** must not be undertaken between 1 August and 30 September;
 - For the period 1 October to 31 March in any given year, **emergency dispersal** activities must not be undertaken if **flightless dependant young** are present (as determined by a **suitably qualified ecologist**);
 - **Emergency dispersal** must be undertaken 1.5 hours pre-dawn and finish one hour post-dawn to ensure **Grey-headed Flying-fox** have time to settle elsewhere before the heat of the day;
 - **Emergency dispersal** must not be undertaken during a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - Once **Grey-headed Flying-fox** have not returned to the site of **emergency dispersal** for more than five consecutive days and while absent from the site of **emergency dispersal**, the person taking the action must implement **passive measures**; and
 - Within five days of the completion of **emergency dispersal**, the person taking the action must submit a report to the **Minister** detailing the **dispersal** methodology implemented and the outcome achieved.
 - *An emergency dispersal situation may arise during the period of August to September, and is likely between October and March. The restriction on undertaking dispersal during these periods limits the ability of EGSC to respond to an emergency event. Given dispersals are to be supervised by a suitably qualified ecologist, their expertise will be able to determine the method for the least impact to GHFF.*
6. Within one month from the completion of Stage One of the **removal of habitat** (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**) and on the same date every subsequent year in which **removal of habitat** or

emergency dispersal occurs, the person taking the action must submit a report to the **Minister** that addresses the following:

- *This was not clearly interpreted; I have attempted to re-write to make the condition clearer.*

*“A report must be submitted to the Minister one month after the completion of Stage One of the **removal of habitat** (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**). A report will need to be submitted on the same date of each subsequent year where **removal of habitat** or **emergency dispersal** occurs. The report must address the following points.”*

- a) Details of the activities undertaken that year relating to **removal of habitat** or **emergency dispersal**;
 - b) Details of the associated outcomes of these activities;
 - c) The data collected (in accordance with these conditions of approval and the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**);
 - d) The status of **Grey-headed Flying-fox** colonies in the Bairnsdale region;
- *Please define what information is required regarding ‘status’*
 - e) Details of how information gained has been incorporated into the future management of **Grey-headed Flying-fox** (adaptive management), including, but not limited to, the future **removal of habitat** or **dispersal** activities associated with the action;
 - *Is this specifically for the Mitchell River site as relates to the project or how ESGC will manage other GHFF sites on their managed land, or is it broader?*
 - f) Details of any activities planned to occur in the following year;
 - g) Written and signed confirmation by a **suitably qualified ecologist** verifying the accuracy of the data, information, analysis and conclusions contained within the report; and
 - h) Raw data must be made available to the **Department** upon request.
- *It is anticipated that the works for Stage One (and each other Stage) will be completed prior to the GHFF arriving on site, but dispersals may be required after the completion of these works given uncertainty of the reaction of GHFF to the action? We would consider that the definition of removal of habitat is purely removal of Poplars, which would only occur when GHFF are absent from the area, resulting in no information pertaining to GHFF to put into the report for Stage One. Perhaps the completion of Stage One report can be considered to be at a later date. If this was as GHFF depart the area, works will be commencing again which leaves little time to inform future management actions for Stages 2 and 3. This needs to be considered.*
 - *The period of stop work between 1st August to 30th September severely restricts the capacity of the revegetation component to be completed before the GHFF arrive back on site (ie. they are typically absent during this period). The revegetation method proposed contains no machinery, and is purely persons onsite. Would there be capacity to potentially undertake works during this period with limitations (ie no machinery)? Given that we have Stop Work Triggers in place already to identify presence of GHFF at all times whilst workers are onsite, the risk of impact to GHFF is very limited. If we require more time to undertake the revegetation, could this be up to the discretion of D of E to approve on an as needs basis?*
 - *Is there potential to determine the exact content of the required report to be pre-approved by D of E, to ensure that the expectations of both D of E and EGSC are met prior to reporting requirements to ensure appropriate data collection.*
7. Five days prior to the **commencement** of the action, the person taking the action must advise the **Department** verbally and in writing of the actual date of **commencement**.

8. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
9. Within three months of every 12 month anniversary of the **commencement** of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Non-compliance with any of the conditions of this approval must be reported to the **Department** within 48 hours of the non-compliance occurring.
10. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
11. If the person taking the action wishes to carry out any activity otherwise than in accordance with the management plans as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that management plan. The varied activity shall not commence until the **Minister** has approved the varied management plan in writing. The **Minister** will not approve a varied management plan unless the revised management plan would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised management plan, that management plan must be implemented in place of the management plan originally approved.
12. If the **Minister** believes that it is necessary or convenient for the better protection of **listed threatened species and communities** to do so, the **Minister** may request that the person taking the action make specified revisions to the management plans specified in the conditions and submit the revised management plans for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved management plan must be implemented. Unless the **Minister** has approved the revised management plan, then the person taking the action must continue to implement the management plan originally approved, as specified in the conditions.
13. If, at any time after five years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of the **Minister**.
14. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within one month of being approved.

Definitions

Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan means the document titled *Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site, DRAFT Strategic Management and Action Plan, East Gippsland Shire Council, November, 2013*.

Behavioural monitoring means the monitoring by a **suitably qualified ecologist** of **Grey-headed Flying-fox** behaviour to identify behaviour outside of normal patterns of behaviour and changes in those patterns. As a guide, behaviour outside of normal patterns may include **Grey-headed Flying-fox** exhibiting sickness, malnutrition, abnormal flight, disorientation, injury, aggression towards a person undertaking an activity evidence of abandoned young, evidence of aborted young or, at worst case, death.

Commencement means any preparatory works associated with the **removal of habitat** from the **Mitchell River Roost Site**, such as the tagging of trees, introduction of machinery or clearing of vegetation, excluding fences and signage.

Department means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dependant young means:

- Newborn – totally dependent and carried by mother;
- Flightless dependant young – dependent on mother, but no longer carried large distances, unable to move easily around the camp; and
- Flying dependant young – dependent on mother, but able to move around the camp, can fly short distances.

Dispersal means any action, including, but not limited to, active physical harassment, taken to remove **Grey-headed Flying-fox** from a site of habitation.

Emergency dispersal means a **dispersal** response to be undertaken if **Grey-headed Flying-fox** relocate to an area where:

- a) Public health is at immediate risk (this includes, but is not limited to, within 100 metres of a hospital or educational institution);
- b) There is potential for the spread of disease through vectors (this includes, but is not be limited to, within 100 metres of a racecourse or horse stud property); and
- c) Anything else, as agreed with the **Department**.

Grey-headed Flying-fox means the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Grey-headed Flying-fox habitat means any patch of land, including non-native vegetation, which may be used by the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*, to forage, breed, shelter or disperse, as determined by a **suitably qualified ecologist**.

Flightless dependant young means **Grey-headed Flying-fox** that are dependent on their mother, but no longer carried large distances and that are unable to move easily around the camp.

Heat Stress Event means a hot weather event lasting one day or more that is extremely stressful and harmful to animals, defined as when temperatures exceed 35°C before 31 December or 38°C over consecutive days from 1 January.

Hot Day means a day when the ambient temperature is predicted to reach 30°C before 10am AEST, or reach greater than 35°C over the day.

Hotline means a point of contact, where members of the public can contact the person taking the action to report any injured **Grey-headed Flying-fox**, the establishment of a new camp of **Grey-headed Flying-fox** and to discuss general concerns regarding **Grey-headed Flying-fox**.

Listed threatened species and communities means a matter listed under sections 18 and 18A of the *Environment Protection and Biodiversity Conservation Act 1999*, specifically the **Grey-headed Flying-fox**.

Mitchell River Roost Site means the 0.5 hectare area defined at Appendix A as **Grey-headed Flying-fox habitat** along the Mitchell River, Bairnsdale, within which **removal of habitat** is to occur.

Minister means the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Passive measure means actions that do not involve active physical harassment of **Grey-headed Flying-fox**, which allow for ongoing maintenance of a successful dispersal area and that act as a deterrent against the animals re-establishing at the site, including, but not limited to, the trimming of branches and removal of limbs. It does not include the permanent **removal of habitat** critical to the survival of **Grey-headed Flying-fox**.

Removal of habitat means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ring-barking, uprooting or burning of **Grey-headed Flying-fox habitat**.

Stop work triggers means site or animal conditions that indicate that the activity should cease.

Substantially commence means the **removal of habitat** at the **Mitchell River Roost Site**.

Suitably qualified ecologist means a practising ecologist with tertiary qualifications from a recognised institute and demonstrated expertise in scientific methodology, animal or conservation biology in relation to the **Grey-headed Flying-fox**.

Appendix A





Proposed Approval

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted East Gippsland Shire Council

proponent's ABN 81 957 967 765

proposed action To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (*Pteropus poliocephalus*) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved.

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2022.

Decision-maker

name and position James Tregurtha
Assistant Secretary
South-Eastern Australia Assessment Branch

signature **NOT FOR SIGNATURE – DRAFT ONLY**

date of decision

Conditions attached to the approval

The following measures must be taken to ensure the protection of **listed threatened species and communities** (sections 18 & 18A), specifically the **Grey-headed Flying-fox (Grey-headed Flying-fox)**:

1. The person taking the action must not remove or adversely impact more than 0.5 hectares of **Grey-headed Flying-fox habitat** at the **Mitchell River Roost Site**.
2. Prior to the **removal of habitat** the person taking the action must submit the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan** to the **Department** for approval. The person taking the action must implement and comply with the approved **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**.

- *If possible, can a condition be added into that will allow EGSC to complete the necessary changes to the Management Action Plan after the decision date, for approval at a later date.*
- *Response – Yes, amended as above.*

3. The person taking the action must ensure that:

- a) Prior to the **removal of habitat** at the **Mitchell River Roost Site** a **Hotline** with a dedicated contact phone number and email address is set up to respond to public enquiries;
 - *Council already has in place a 24hr contact service as part of its regular operations. Is a separate line a requirement or will advertising the main Shire numbers suffice given that a 24 hr service already is in operation?*
 - *Response – Yes, the existing line will suffice as long as this is clearly advertised and an email address is also provided for contact.*
- b) Prior to the **removal of habitat** at the **Mitchell River Roost Site** neighbouring Councils are notified of the proposal and provided with contact details to respond to enquiries;
 - *This involves notifying five Councils, 4 of which are located a great distance from the Roost Site – Council needs to understand the rationale for such notifications.*
 - *Response – the rationale was to alert neighbouring Councils as to the increased risk of GHFF moving into their areas following the removal of habitat. A letter to notify the Councils will suffice with contact details to allow queries to be answered. If EGSC would like to suggest the most relevant Councils to notify and why we may be able to amend this condition.*

EGSC would like to suggest that Wellington Shire is the only local council adjacent to this Shire that would be impacted by our action. We have an existing MOU with Wellington Shire which enables a co-operative relationship between neighbouring Shires. The distance between other Shires (Toowong and Alpine) and EGSC in the State of Victoria are significant and their location not likely to be suitable for GHFF populations. Other shires are interstate with some likely to already have GHFF present, and are also subject to different State legislation.

- c) Undertake revegetation of long-term **Grey-headed Flying-fox habitat** within the **Bairnsdale region**, in accordance with expert advice on **Grey-headed Flying-fox** ecology, subject to negotiation with and approval by, the **Department**. If a long-term **Grey-headed Flying-fox** camp is not established within the **Bairnsdale region** then revegetation or improvement of **Grey-headed Flying-fox habitat** within the **Bairnsdale region** must be undertaken; and

- *Can we please define Bairnsdale 'area' and Bairnsdale 'region'.*
- *Response – Yes. This has been amended for consistency and defined below. If you have a suggested definition please provide.*
- *Can some clarification be requested in the condition about where revegetation will occur (ie: Council's own land or any tenure). Who will determine which site is suitable for revegetation and improvement, DEPI and/or DE? What is the role of DE in negotiation and approval?*
- *Response – The condition has been worded so that, depending on where the GHFF relocate to, revegetation works will be chosen at the site most likely to benefit the colony; however, if the GHFF leave the region altogether revegetation or improvement works can benefit the GHFF in the long-term. Whether this land is Council's or any tenure is a matter for the EGSC. It is expected that expert advice will be sought to ensure that the site of revegetation will be of benefit to the GHFF. Who provides that advice is a matter for the EGSC but will need to be justified to the Department prior to approval. The Department's role is primarily in determining that the revegetation proposed is appropriate and will be of benefit to GHFF in the long-term.*

d) At least \$5,000 is spent on community education resources relating to **Grey-headed Flying-fox**, including, but not limited to, educational signage at a site of **Grey-headed Flying-fox habitat**.

- *Is this expenditure required over the period of the action – or some other timeframe?*
- *Response – Yes, this expenditure is required over the period of staged vegetation removal to increase community awareness of the GHFF.*

4. If, following the **removal of habitat** at the **Mitchell River Roost Site**, the person taking the action proposes to undertake a separate **dispersal** then a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:

- Proposed methodology for **dispersal**;
- Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
- The presence of pregnant **Grey-headed Flying-fox**;
- The presence of **dependant young**;
- A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
- Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
- Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.

- *What are the parameters and requirements around the decision for undertaking a dispersal? Will this information be required to be incorporated into the Management Plan, given the absence of this information with the removal of the Response Plan from the Management Plan? Are the conditions within the Response Plan sufficient to make this decision?*
- *Response – The EGSC can make a decision regarding dispersal according to their own requirements; however, the Department will need to consider the individual circumstances of the proposed dispersal and the potential impacts to the GHFF in considering the dispersal plan.*
- *The dispersal plan will not need to be incorporated into the Management Plan, which will be a stand alone document. The Response Plan will form the basis of the dispersal plan but will need to be adapted to the individual circumstances and*

address the above criteria. The EGSC may choose to use the information in the Response Plan in making a decision as to whether or not a dispersal is desired.

- Time constraints on approval? Can a pro-forma management plan be developed in the time prior to any dispersal occurring (ie. prior to September) for approval by the Department as to the information and data required to report sufficiently for a faster turn-around of approval once compiled?*
- Response – The Response Plan is a good basis for a dispersal plan but will need to address some outstanding matters that have not been addressed, such as the methodology for the dispersal. The key requirements of the dispersal plan are captured above in condition 4 and should form the basis of information provided in the dispersal plan.*

5. The person taking the action may undertake an **emergency dispersal**. Unless *otherwise* negotiated with the **Minister** and approved, an **emergency dispersal** must be undertaken in accordance with the following requirements:

- A **suitably qualified ecologist** must be engaged to advise of best practice **dispersal** methodology;
 - During **emergency dispersal** a **suitably qualified ecologist** must be present to oversee best practice **dispersal** methodology, undertake **behavioural monitoring** and document the outcomes of the process;
 - During **emergency dispersal** the person taking the action must comply with all recommendations and guidance from a **suitably qualified ecologist**;
 - **Emergency dispersal** must not be undertaken between 1 August and 30 September;
 - For the period 1 October to 31 March in any given year, **emergency dispersal** activities must not be undertaken if **flightless dependant young** are present (as determined by a **suitably qualified ecologist**);
 - **Emergency dispersal** must be undertaken 1.5 hours pre-dawn and finish one hour post-dawn to ensure **Grey-headed Flying-fox** have time to settle elsewhere before the heat of the day;
 - **Emergency dispersal** must not be undertaken during a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - Once **Grey-headed Flying-fox** have not returned to the site of **emergency dispersal** for more than five consecutive days and while absent from the site of **emergency dispersal**, the person taking the action must implement **passive measures**; and
 - Within five days of the completion of **emergency dispersal**, the person taking the action must submit a report to the **Minister** detailing the **dispersal** methodology implemented and the outcome achieved.
-
- An emergency dispersal situation may arise during the period of August to September, and is likely between October and March. The restriction on undertaking dispersal during these periods limits the ability of EGSC to respond to an emergency event. Given dispersals are to be supervised by a suitably qualified ecologist, their expertise will be able to determine the method for the least impact to GHFF.*
 - Response – As these times correlate to a particularly vulnerable time of the GHFF's breeding cycle the Department considers that these measures are necessary to reduce potential impacts to the GHFF during the critical breeding season and to reduce the likelihood of significant stress, aborted foetuses, dropped young and the desertion of young. It is understood that an emergency response may need to be undertaken quickly in order for the GHFF not to settle and thus negotiation and approval by the Minister has been included to ensure that human health is considered alongside the management of potential impacts to GHFF.*

6. **One month prior to the commencement of Stage Two** of the **removal of habitat** (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**) and on the same date every subsequent year in which **removal of habitat** or **emergency dispersal** occurs, the person taking the action must submit a report to the **Minister** that addresses the following:

- *This was not clearly interpreted; I have attempted to re-write to make the condition clearer.*

*"A report must be submitted to the Minister one month after the completion of Stage One of the **removal of habitat** (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**). A report will need to be submitted on the same date of each subsequent year where **removal of habitat** or **emergency dispersal** occurs. The report must address the following points."*

- a) Details of the activities undertaken that year relating to **removal of habitat** or **emergency dispersal**;
 - b) Details of the associated outcomes of these activities;
 - c) The data collected (in accordance with these conditions of approval and the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**);
 - d) **Information about the health and condition** of **Grey-headed Flying-fox** colonies in the **Bairnsdale region**;
- *Please define what information is required regarding 'status'*
 - *Response – Amended. The condition is intended to encapsulate an overview of the species in the region to indicate changes.*
- e) Details of how information gained has been incorporated into the future management of **Grey-headed Flying-fox** (adaptive management), including, but not limited to, the future **removal of habitat** or **dispersal** activities associated with the action;
- *Is this specifically for the Mitchell River site as relates to the project or how ESGC will manage other GHFF sites on their managed land, or is it broader?*
 - *Response – This is intended to relate to actions at the Mitchell River Site and future dispersals that are associated with the removal of habitat but may also include other actions that are a consequence of the removal of habitat that are not specifically mentioned, such as ongoing management of roost sites.*
- f) Details of any activities planned to occur in the following year;
 - g) Written and signed confirmation by a **suitably qualified ecologist** verifying the accuracy of the data, information, analysis and conclusions contained within the report; and
 - h) Raw data must be made available to the **Department** upon request.
- *It is anticipated that the works for Stage One (and each other Stage) will be completed prior to the GHFF arriving on site, but dispersals may be required after the completion of these works given uncertainty of the reaction of GHFF to the action? We would consider that the definition of removal of habitat is purely removal of Poplars, which would only occur when GHFF are absent from the area, resulting in no information pertaining to GHFF to put into the report for Stage One. Perhaps the completion of Stage One report can be considered to be at a later date. If this was as GHFF depart the area, works will be commencing again which leaves little time to inform future management actions for Stages 2 and 3. This needs to be considered.*
 - *Response – The completion of Stage One of the removal of habitat includes all the management actions following that first stage of removal, such as revegetation, determining the GHFF response, improving site amenity and increasing community knowledge (as described in the Management Plan, p. 41). Information will not be able to be finalised until these activities are concluded. If you would like to suggest a date other than one month following Stage One we would be happy to consider (e.g. one month prior to the commencement of Stage Two?).*

- *If this relates to condition 6(c) the data collected and 6(h) the raw data it is expected that this information would be available at the end of Stage One.*
 - *The period of stop work between 1st August to 30th September severely restricts the capacity of the revegetation component to be completed before the GHFF arrive back on site (ie. they are typically absent during this period). The revegetation method proposed contains no machinery, and is purely persons onsite. Would there be capacity to potentially undertake works during this period with limitations (ie no machinery)? Given that we have Stop Work Triggers in place already to identify presence of GHFF at all times whilst workers are onsite, the risk of impact to GHFF is very limited. If we require more time to undertake the revegetation, could this be up to the discretion of D or E to approve on an as needs basis?*
 - *Response – This relates to the timing of works at 10.3.2 of Management Plan and will be considered when approving the Management Plan. Given the stop work condition and the absence of machinery the Department would consider allowing works during this period on a needs basis.*
7. Five days prior to the **commencement** of the action, the person taking the action must advise the **Department** verbally and in writing of the actual date of **commencement**.
 8. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
 9. Within three months of every 12 month anniversary of the **commencement** of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Non-compliance with any of the conditions of this approval must be reported to the **Department** within 48 hours of the non-compliance occurring.
 10. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
 11. If the person taking the action wishes to carry out any activity otherwise than in accordance with the management plans as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that management plan. The varied activity shall not commence until the **Minister** has approved the varied management plan in writing. The **Minister** will not approve a varied management plan unless the revised management plan would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised management plan, that management plan must be implemented in place of the management plan originally approved.
 12. If the **Minister** believes that it is necessary or convenient for the better protection of **listed threatened species and communities** to do so, the **Minister** may request that the person taking the action make specified revisions to the management plans specified in the conditions and submit the revised management plans for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved management plan must be implemented. Unless the **Minister** has approved the revised

management plan, then the person taking the action must continue to implement the management plan originally approved, as specified in the conditions.

13. If, at any time after five years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of the **Minister**.
14. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within one month of being approved.

Definitions

Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan means the document titled *Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site, Strategic Management and Action Plan, East Gippsland Shire Council, 2013*.

Bairnsdale Region means the administrative district of the city of Bairnsdale.

Behavioural monitoring means the monitoring by a **suitably qualified ecologist** of **Grey-headed Flying-fox** behaviour to identify behaviour outside of normal patterns of behaviour and changes in those patterns. As a guide, behaviour outside of normal patterns may include **Grey-headed Flying-fox** exhibiting sickness, malnutrition, abnormal flight, disorientation, injury, aggression towards a person undertaking an activity evidence of abandoned young, evidence of aborted young or, at worst case, death.

Commencement means any preparatory works associated with the **removal of habitat** from the **Mitchell River Roost Site**, such as the tagging of trees, introduction of machinery or clearing of vegetation, excluding fences and signage.

Department means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dependant young means:

- Newborn – totally dependent and carried by mother;
- Flightless dependant young – dependent on mother, but no longer carried large distances, unable to move easily around the camp; and
- Flying dependant young – dependent on mother, but able to move around the camp, can fly short distances.

Dispersal means any action, including, but not limited to, active physical harassment, taken to remove **Grey-headed Flying-fox** from a site of habitation.

Emergency dispersal means a **dispersal** response to be undertaken if **Grey-headed Flying-fox** relocate to an area where:

- a) Public health is at immediate risk (this includes, but is not limited to, within 100 metres of a hospital or educational institution);
- b) There is potential for the spread of disease through vectors (this includes, but is not be limited to, within 100 metres of a racecourse or horse stud property); and
- c) Anything else, as agreed with the **Department**.

Grey-headed Flying-fox means the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Grey-headed Flying-fox habitat means any patch of land, including non-native vegetation, which may be used by the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*, to forage, breed, shelter or disperse, as determined by a **suitably qualified ecologist**.

Flightless dependant young means **Grey-headed Flying-fox** that are dependent on their mother, but no longer carried large distances and that are unable to move easily around the camp.

Heat Stress Event means a hot weather event lasting one day or more that is extremely stressful and harmful to animals, defined as when temperatures exceed 35°C before 31 December or 38°C over consecutive days from 1 January.

Hot Day means a day when the ambient temperature is predicted to reach 30°C before 10am AEST, or reach greater than 35°C over the day.

Hotline means a point of contact, where members of the public can contact the person taking the action to report any injured **Grey-headed Flying-fox**, the establishment of a new camp of **Grey-headed Flying-fox** and to discuss general concerns regarding **Grey-headed Flying-fox**.

Listed threatened species and communities means a matter listed under sections 18 and 18A of the *Environment Protection and Biodiversity Conservation Act 1999*, specifically the **Grey-headed Flying-fox**.

Mitchell River Roost Site means the 0.5 hectare area defined at [Appendix A](#) as **Grey-headed Flying-fox habitat** along the Mitchell River, Bairnsdale, within which **removal of habitat** is to occur.

Minister means the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Passive measure means actions that do not involve active physical harassment of **Grey-headed Flying-fox**, which allow for ongoing maintenance of a successful dispersal area and that act as a deterrent against the animals re-establishing at the site, including, but not limited to, the trimming of branches and removal of limbs. It does not include the permanent **removal of habitat** critical to the survival of **Grey-headed Flying-fox**.

Removal of habitat means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ring-barking, uprooting or burning of **Grey-headed Flying-fox habitat**.

Stop work triggers means site or animal conditions that indicate that the activity should cease.

Substantially commence means the **removal of habitat** at the **Mitchell River Roost Site**.

Suitably qualified ecologist means a practising ecologist with tertiary qualifications from a recognised institute and demonstrated expertise in scientific methodology, animal or conservation biology in relation to the **Grey-headed Flying-fox**.

Appendix A





Australian Government
Department of the Environment

Proposed Approval

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted East Gippsland Shire Council

proponent's ABN 81 957 967 765

proposed action To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (*Pteropus poliocephalus*) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved.

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2022.

Decision-maker

name and position James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments Branch

signature ~~NOT FOR SIGNATURE – DRAFT ONLY~~

date of decision

Conditions attached to the approval

The following measures must be taken to ensure the protection of **listed threatened species and communities** (sections 18 & 18A), specifically the **Grey-headed Flying-fox (Grey-headed Flying-fox)**:

1. The person taking the action must not remove or adversely impact more than 0.5 hectares of **Grey-headed Flying-fox habitat** at the **Mitchell River Roost Site**.
2. Prior to the removal of habitat the person taking the action must submit the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan** to the Department for approval. The person taking the action must implement and comply with the approved **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**.

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3. The person taking the action must ensure that:
 - a) Prior to the **removal of habitat** at the **Mitchell River Roost Site** a **Hotline** with a dedicated contact phone number and email address is set up to respond to public enquiries;
 - b) Prior to the **removal of habitat** at the **Mitchell River Roost Site** the **Wellington Shire** neighbouring Councils ~~is are~~ notified of the proposal and provided with contact details to respond to enquiries;

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 - c) Undertake revegetation of long-term **Grey-headed Flying-fox habitat** within the **Bairnsdale region** ~~area~~, in accordance with expert advice on **Grey-headed Flying-fox** ecology, subject to negotiation with and approval by, the **Department**. If a long-term **Grey-headed Flying-fox** camp is not established within the **Bairnsdale region** ~~area~~ then revegetation or improvement of **Grey-headed Flying-fox habitat** within the **Bairnsdale region** must be undertaken; and

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 - d) At least \$5,000 is spent on community education resources relating to **Grey-headed Flying-fox**, including, but not limited to, educational signage at a site of **Grey-headed Flying-fox habitat**; within twelve months of the completion of Stage Three (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**).
4. If, following the **removal of habitat** at the **Mitchell River Roost Site**, the person taking the action proposes to undertake a separate **dispersal** then a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
 - c) The presence of pregnant **Grey-headed Flying-fox**;
 - d) The presence of **dependant young**;
 - e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - f) Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
 - g) Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.

5. The person taking the action may undertake an **emergency dispersal**. Unless **otherwise** negotiated with the **Minister** and approved, an **emergency dispersal** must be undertaken in accordance with the following requirements:

- A **suitably qualified ecologist** must be engaged to advise of best practice **dispersal** methodology;
- During **emergency dispersal** a **suitably qualified ecologist** must be present to oversee best practice **dispersal** methodology, undertake **behavioural monitoring** and document the outcomes of the process;
- During **emergency dispersal** the person taking the action must comply with all recommendations and guidance from a **suitably qualified ecologist**;
- **Emergency dispersal** must not be undertaken between 1 August and 30 September;
- For the period 1 October to 31 March in any given year, **emergency dispersal** activities must not be undertaken if **flightless dependant young** are present (as determined by a **suitably qualified ecologist**);
- **Emergency dispersal** must be undertaken 1.5 hours pre-dawn and finish one hour post-dawn to ensure **Grey-headed Flying-fox** have time to settle elsewhere before the heat of the day;
- **Emergency dispersal** must not be undertaken during a **Hot Day** or on or within two days of a **Heat Stress Event**;
- Once **Grey-headed Flying-fox** have not returned to the site of **emergency dispersal** for more than five consecutive days and while absent from the site of **emergency dispersal**, the person taking the action must implement **passive measures**; and
- Within five days of the completion of **emergency dispersal**, the person taking the action must submit a report to the **Minister** detailing the **dispersal** methodology implemented and the outcome achieved.

6. **One month prior to the commencement of Stage Two** ~~Within one month from the completion of Stage One of the removal of habitat~~ (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**) and on the same date every subsequent year in which **removal of habitat** or **emergency dispersal** occurs, the person taking the action must submit a report to the **Minister** that addresses the following:

- a) Details of the activities undertaken that year relating to **removal of habitat** or **emergency dispersal**;
- b) Details of the associated outcomes of these activities;
- c) The data collected (in accordance with these conditions of approval and the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**);
- d) ~~The status~~ **Information about the health, and condition and location** of **Grey-headed Flying-fox** colonies in the **Bairnsdale region**;
- e) Details of how information gained has been incorporated into the future management of **Grey-headed Flying-fox** (adaptive management), including, but not limited to, the future **removal of habitat** or **dispersal** activities associated with the action;
- f) Details of any activities planned to occur in the following year;
- g) Written and signed confirmation by a **suitably qualified ecologist** verifying the accuracy of the data, information, analysis and conclusions contained within the report; and
- h) Raw data must be made available to the **Department** upon request.

7. Five days prior to the **commencement** of the action, the person taking the action must advise the **Department** verbally and in writing of the actual date of **commencement**.

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8. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
9. Within three months of every 12 month anniversary of the **commencement** of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Non-compliance with any of the conditions of this approval must be reported to the **Department** within 48 hours of the non-compliance occurring.
10. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
11. If the person taking the action wishes to carry out any activity otherwise than in accordance with the management plans as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that management plan. The varied activity shall not commence until the **Minister** has approved the varied management plan in writing. The **Minister** will not approve a varied management plan unless the revised management plan would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised management plan, that management plan must be implemented in place of the management plan originally approved.
12. If the **Minister** believes that it is necessary or convenient for the better protection of **listed threatened species and communities** to do so, the **Minister** may request that the person taking the action make specified revisions to the management plans specified in the conditions and submit the revised management plans for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved management plan must be implemented. Unless the **Minister** has approved the revised management plan, then the person taking the action must continue to implement the management plan originally approved, as specified in the conditions.
13. If, at any time after five years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of the **Minister**.
14. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within one month of being approved.

Definitions

Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan means the document titled *Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site, DRAFT Strategic Management and Action Plan, East Gippsland Shire Council, November, 2013/2014*.

Bairnsdale Region means the an administrative area, division, or district of the city of Bairnsdale. A rural area with its own elected council;

Behavioural monitoring means the monitoring by a **suitably qualified ecologist** of **Grey-headed Flying-fox** behaviour to identify behaviour outside of normal patterns of behaviour and changes in those patterns. As a guide, behaviour outside of normal patterns may include **Grey-headed Flying-fox** exhibiting sickness, malnutrition, abnormal flight, disorientation, injury, aggression towards a person undertaking an activity evidence of abandoned young, evidence of aborted young or, at worst case, death.

Commencement means any preparatory works associated with the **removal of habitat** from the **Mitchell River Roost Site**, such as the tagging of trees, introduction of machinery or clearing of vegetation, excluding fences and signage.

Department means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dependant young means:

- Newborn – totally dependent and carried by mother;
- Flightless dependant young – dependent on mother, but no longer carried large distances, unable to move easily around the camp; and
- Flying dependant young – dependent on mother, but able to move around the camp, can fly short distances.

Dispersal means any action, including, but not limited to, active physical harassment, taken to remove **Grey-headed Flying-fox** from a site of habitation.

Emergency dispersal means a **dispersal** response to be undertaken if **Grey-headed Flying-fox** relocate to an area where:

- a) Public health is at immediate risk (this includes, but is not limited to, within 100 metres of a hospital or educational institution);
- b) There is potential for the spread of disease through vectors (this includes, but is not be limited to, within 100 metres of a racecourse or horse stud property); and
- c) Anything else, as agreed with the **Department**.

Grey-headed Flying-fox means the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Grey-headed Flying-fox habitat means any patch of land, including non-native vegetation, which may be used by the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*, to forage, breed, shelter or disperse, as determined by a **suitably qualified ecologist**.

Flightless dependant young means **Grey-headed Flying-fox** that are dependent on their mother, but no longer carried large distances and that are unable to move easily around the camp.

Heat Stress Event means a hot weather event lasting one day or more that is extremely stressful and harmful to animals, defined as when temperatures exceed 35°C before 31 December or 38°C over consecutive days from 1 January.

Hot Day means a day when the ambient temperature is predicted to reach 30°C before 10am AEST, or reach greater than 35°C over the day.

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Hotline means a point of contact, where members of the public can contact the person taking the action to report any injured **Grey-headed Flying-fox**, the establishment of a new camp of **Grey-headed Flying-fox** and to discuss general concerns regarding **Grey-headed Flying-fox**.

Listed threatened species and communities means a matter listed under sections 18 and 18A of the *Environment Protection and Biodiversity Conservation Act 1999*, specifically the **Grey-headed Flying-fox**.

Mitchell River Roost Site means the 0.5 hectare area defined at [Appendix A](#) as **Grey-headed Flying-fox habitat** along the Mitchell River, Bairnsdale, within which **removal of habitat** is to occur.

Minister means the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Passive measure means actions that do not involve active physical harassment of **Grey-headed Flying-fox**, which allow for ongoing maintenance of a successful dispersal area and that act as a deterrent against the animals re-establishing at the site, including, but not limited to, the trimming of branches and removal of limbs. It does not include the permanent **removal of habitat** critical to the survival of **Grey-headed Flying-fox**.

Removal of habitat means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ring-barking, uprooting or burning of **Grey-headed Flying-fox habitat**.

Stop work triggers means site or animal conditions that indicate that the activity should cease.

Substantially commence means the **removal of habitat** at the **Mitchell River Roost Site**.

Suitably qualified ecologist means a practising ecologist with tertiary qualifications from a recognised institute and demonstrated expertise in scientific methodology, animal or conservation biology in relation to the **Grey-headed Flying-fox**.

Appendix A



**Approval**

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed action

person to whom the approval is granted East Gippsland Shire Council

proponent's ABN 81 957 967 765

proposed action To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (*Pteropus poliocephalus*) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved.

conditions of approval

This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 1 July 2022.

Decision-maker

name and position James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments Branch

signature

date of decision 11 APRIL 2014

Conditions attached to the approval

The following measures must be taken to ensure the protection of **listed threatened species and communities** (sections 18 & 18A), specifically the **Grey-headed Flying-fox (Grey-headed Flying-fox)**:

1. The person taking the action must not remove or adversely impact more than 0.5 hectares of **Grey-headed Flying-fox habitat** at the **Mitchell River Roost Site**.
2. Prior to the **removal of habitat** the person taking the action must submit the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan** to the **Department** for approval. The person taking the action must implement and comply with the approved **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**.
3. The person taking the action must ensure that:
 - a) Prior to the **removal of habitat** at the **Mitchell River Roost Site** a **Hotline** with a dedicated contact phone number and email address is set up to respond to public enquiries;
 - b) Prior to the **removal of habitat** at the **Mitchell River Roost Site** the Wellington Shire Council is notified of the proposal and provided with contact details to respond to enquiries;
 - c) Undertake revegetation of long-term **Grey-headed Flying-fox habitat** within the **Bairnsdale region**, in accordance with expert advice on **Grey-headed Flying-fox** ecology, subject to negotiation with and approval by, the **Department**. If a long-term **Grey-headed Flying-fox** camp is not established within the **Bairnsdale region** then revegetation or improvement of **Grey-headed Flying-fox habitat** within the **Bairnsdale region** must be undertaken; and
 - d) At least \$5,000 is spent on community education resources relating to **Grey-headed Flying-fox**, including, but not limited to, educational signage at a site of **Grey-headed Flying-fox habitat** within twelve months of the completion of Stage Three (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**).
4. If, following the **removal of habitat** at the **Mitchell River Roost Site**, the person taking the action proposes to undertake a separate **dispersal** then a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
 - c) The presence of pregnant **Grey-headed Flying-fox**;
 - d) The presence of **dependant young**;
 - e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - f) Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
 - g) Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.

5. The person taking the action may undertake an **emergency dispersal**. Unless otherwise negotiated with the **Minister** and approved, an **emergency dispersal** must be undertaken in accordance with the following requirements:
 - A **suitably qualified ecologist** must be engaged to advise of best practice **dispersal** methodology;
 - During **emergency dispersal** a **suitably qualified ecologist** must be present to oversee best practice **dispersal** methodology, undertake **behavioural monitoring** and document the outcomes of the process;
 - During **emergency dispersal** the person taking the action must comply with all recommendations and guidance from a **suitably qualified ecologist**;
 - **Emergency dispersal** must not be undertaken between 1 August and 30 September;
 - For the period 1 October to 31 March in any given year, **emergency dispersal** activities must not be undertaken if **flightless dependant young** are present (as determined by a **suitably qualified ecologist**);
 - **Emergency dispersal** must be undertaken 1.5 hours pre-dawn and finish one hour post-dawn to ensure **Grey-headed Flying-fox** have time to settle elsewhere before the heat of the day;
 - **Emergency dispersal** must not be undertaken during a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - Once **Grey-headed Flying-fox** have not returned to the site of **emergency dispersal** for more than five consecutive days and while absent from the site of **emergency dispersal**, the person taking the action must implement **passive measures**; and
 - Within five days of the completion of **emergency dispersal**, the person taking the action must submit a report to the **Minister** detailing the **dispersal** methodology implemented and the outcome achieved.
6. One month prior to the commencement of Stage Two (as detailed in the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**) and on the same date every subsequent year in which **removal of habitat** or **emergency dispersal** occurs, the person taking the action must submit a report to the **Minister** that addresses the following:
 - a) Details of the activities undertaken that year relating to **removal of habitat** or **emergency dispersal**;
 - b) Details of the associated outcomes of these activities;
 - c) The data collected (in accordance with these conditions of approval and the **Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan**);
 - d) Information about the health, condition and location of **Grey-headed Flying-fox** colonies in the **Bairnsdale region**;
 - e) Details of how information gained has been incorporated into the future management of **Grey-headed Flying-fox** (adaptive management), including, but not limited to, the future **removal of habitat** or **dispersal** activities associated with the action;
 - f) Details of any activities planned to occur in the following year;
 - g) Written and signed confirmation by a **suitably qualified ecologist** verifying the accuracy of the data, information, analysis and conclusions contained within the report; and
 - h) Raw data must be made available to the **Department** upon request.
7. Five days prior to the **commencement** of the action, the person taking the action must advise the **Department** verbally and in writing of the actual date of **commencement**.

8. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
9. Within three months of every 12 month anniversary of the **commencement** of the action, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published. Non-compliance with any of the conditions of this approval must be reported to the **Department** within 48 hours of the non-compliance occurring.
10. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
11. If the person taking the action wishes to carry out any activity otherwise than in accordance with the management plans as specified in the conditions, the person taking the action must submit to the **Department** for the **Minister's** written approval a revised version of that management plan. The varied activity shall not commence until the **Minister** has approved the varied management plan in writing. The **Minister** will not approve a varied management plan unless the revised management plan would result in an equivalent or improved environmental outcome over time. If the **Minister** approves the revised management plan, that management plan must be implemented in place of the management plan originally approved.
12. If the **Minister** believes that it is necessary or convenient for the better protection of **listed threatened species and communities** to do so, the **Minister** may request that the person taking the action make specified revisions to the management plans specified in the conditions and submit the revised management plans for the **Minister's** written approval. The person taking the action must comply with any such request. The revised approved management plan must be implemented. Unless the **Minister** has approved the revised management plan, then the person taking the action must continue to implement the management plan originally approved, as specified in the conditions.
13. If, at any time after five years from the date of this approval, the person taking the action has not **substantially commenced** the action, then the person taking the action must not **substantially commence** the action without the written agreement of the **Minister**.
14. Unless otherwise agreed to in writing by the **Minister**, the person taking the action must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within one month of being approved.

Definitions

Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan means the document titled *Mitchell River Revegetation Program, Bairnsdale Grey-headed Flying Fox Roost Site, Strategic Management and Action Plan, East Gippsland Shire Council, 2014*.

Bairnsdale Region means the administrative district of the city of Bairnsdale.

Behavioural monitoring means the monitoring by a **suitably qualified ecologist** of **Grey-headed Flying-fox** behaviour to identify behaviour outside of normal patterns of behaviour and changes in those patterns. As a guide, behaviour outside of normal patterns may include **Grey-headed Flying-fox** exhibiting sickness, malnutrition, abnormal flight, disorientation, injury, aggression towards a person undertaking an activity evidence of abandoned young, evidence of aborted young or, at worst case, death.

Commencement means any preparatory works associated with the **removal of habitat** from the **Mitchell River Roost Site**, such as the tagging of trees, introduction of machinery or clearing of vegetation, excluding fences and signage.

Department means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

Dependant young means:

- Newborn – totally dependent and carried by mother;
- Flightless dependant young – dependent on mother, but no longer carried large distances, unable to move easily around the camp; and
- Flying dependant young – dependent on mother, but able to move around the camp, can fly short distances.

Dispersal means any action, including, but not limited to, active physical harassment, taken to remove **Grey-headed Flying-fox** from a site of habitation.

Emergency dispersal means a **dispersal** response to be undertaken if **Grey-headed Flying-fox** relocate to an area where:

- a) Public health is at immediate risk (this includes, but is not limited to, within 100 metres of a hospital or educational institution);
- b) There is potential for the spread of disease through vectors (this includes, but is not be limited to, within 100 metres of a racecourse or horse stud property); and
- c) Anything else, as agreed with the **Department**.

Grey-headed Flying-fox means the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*.

Grey-headed Flying-fox habitat means any patch of land, including non-native vegetation, which may be used by the native flying-fox species *Pteropus poliocephalus* listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999*, to forage, breed, shelter or disperse, as determined by a **suitably qualified ecologist**.

Flightless dependant young means **Grey-headed Flying-fox** that are dependent on their mother, but no longer carried large distances and that are unable to move easily around the camp.

Heat Stress Event means a hot weather event lasting one day or more that is extremely stressful and harmful to animals, defined as when temperatures exceed 35°C before 31 December or 38°C over consecutive days from 1 January.

Hot Day means a day when the ambient temperature is predicted to reach 30°C before 10am AEST, or reach greater than 35°C over the day.

Hotline means a point of contact, where members of the public can contact the person taking the action to report any injured **Grey-headed Flying-fox**, the establishment of a new camp of **Grey-headed Flying-fox** and to discuss general concerns regarding **Grey-headed Flying-fox**.

Listed threatened species and communities means a matter listed under sections 18 and 18A of the *Environment Protection and Biodiversity Conservation Act 1999*, specifically the **Grey-headed Flying-fox**.

Mitchell River Roost Site means the 0.5 hectare area defined at Appendix A as **Grey-headed Flying-fox habitat** along the Mitchell River, Bairnsdale, within which **removal of habitat** is to occur.

Minister means the Minister administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes a delegate of the Minister.

Passive measure means actions that do not involve active physical harassment of **Grey-headed Flying-fox**, which allow for ongoing maintenance of a successful dispersal area and that act as a deterrent against the animals re-establishing at the site, including, but not limited to, the trimming of branches and removal of limbs. It does not include the permanent **removal of habitat** critical to the survival of **Grey-headed Flying-fox**.

Removal of habitat means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ring-barking, uprooting or burning of **Grey-headed Flying-fox habitat**.

Stop work triggers means site or animal conditions that indicate that the activity should cease.

Substantially commence means the **removal of habitat** at the **Mitchell River Roost Site**.

Suitably qualified ecologist means a practising ecologist with tertiary qualifications from a recognised institute and demonstrated expertise in scientific methodology, animal or conservation biology in relation to the **Grey-headed Flying-fox**.

Appendix A





Australian Government
Department of the Environment

EPBC Ref: 2009/5017

Ms Kate Nelson
Director Planning & Community
East Gippsland Shire Council
P.O. BOX 1618
BAIRNSDALE VIC 3875

Dear Ms Nelson

Decision on approval
East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox
(*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)

I am writing to you in relation to a proposal to remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council's poplar removal program, which provide a 'summer camp' roost site for Grey-headed Flying-foxes in Bairnsdale, Victoria.

I have considered the proposal in accordance with Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and have decided to grant an approval to the East Gippsland Shire Council. The details of my decision are attached. The proposal must be undertaken in accordance with the conditions specified in the approval.

I would appreciate your assistance by informing me when you start the action and also who will be the contact person responsible for the administration of the approval decision.

Please note any plans required as conditions of approval will be regarded as public documents unless you provide sufficient justification to warrant commercial-in-confidence status.

You should also note that this EPBC Act approval does not affect obligations to comply with any other laws of the Commonwealth, state or territory that are applicable to the action. Neither does this approval confer any right, title or interest that may be required to access land or waters to take the action.

The Department has an active audit program for proposals that have been referred or approved under the EPBC Act. The audit program aims to ensure that proposals are implemented as planned and that there is a high degree of compliance with any associated conditions. Please note that your project may be selected for audit by the Department at any time and all related records and documents may be subject to scrutiny. Information about the Department's compliance monitoring and auditing program is enclosed.

The Department has recently published an *Environmental Impact Assessment Client Service Charter* (the Charter) which outlines the department's commitments when undertaking environmental impact assessments under the EPBC Act. A copy of the Charter can be found at: <http://www.environment.gov.au/epbc/publications/index.html>. Should you have any feedback on the environmental impact assessment process, please send them through to ElAclientfeedback@environment.gov.au.

If you have any questions about this decision, please contact the project manager,
s22 [redacted] by email to s22 [redacted]@environment.gov.au, or telephone 02 6274
s22 [redacted] and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely



James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments Branch
// April 2014

cc. s22 [redacted] Roadside Pest Plant Officer, East Gippsland Shire Council



EPBC Ref: 2009/5017

The Hon Matthew Guy MLC
Minister for Planning
Level 20
1 Spring Street
MELBOURNE VIC 3001

Dear Minister

**Decision on approval
East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox
(*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)**

I am writing to you in relation to a proposal by the East Gippsland Shire Council to remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council's poplar removal program, which provide a 'summer camp' roost site for Grey-headed Flying-foxes in Bairnsdale, Victoria.

I have considered the proposal in accordance with Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* and have decided to grant an approval to the East Gippsland Shire Council. A notice of my decision is attached for your information.

If you have any questions about this decision, please contact the project manager, s22 by email to s22 @environment.gov.au, or telephone 02 6274 s22 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

James Tregurtha
Assistant Secretary
South-Eastern Australia Environment Assessments Branch
11 April 2014

To: Assistant Secretary Shane Gaddes (for decision)

Variation to condition 4 of approval: East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

Timing: 13 April 2015 as the Council is anxious to progress this matter.

Recommendations:

1. That you agree to the request by the East Gippsland Shire Council to vary condition 4 of EPBC Approval 2009/5017 to enable the Council to undertake minor, non-emergency dispersal of Grey-headed Flying-fox from portions of the existing camp to remove dangerous trees and to commence the proposed action despite uninterrupted occupation of the GHFF camp.

Agreed / Not agreed

2. If you agree to 1., that you sign the variation instrument at **Attachment A** to vary condition 4 attached to EPBC Approval 2009/5017.

Signed / Not signed

3. That you sign the letter provided at **Attachment B** advising the East Gippsland Shire Council of your decision.

Signed / Not signed

Assistant Secretary Shane Gaddes: *S. Gaddes*

Date: *10/4/15*

Comments:

Key Points:

1. The Delegate approved, on 11 April 2014, the East Gippsland Shire Council to remove 0.5 ha of poplar trees which support a small part of the Grey-headed Flying-fox ('GHFF', *Pteropus poliocephalus*) 'Summer Camp', at Bairnsdale, Victoria (EPBC 2009/5017) (**Attachment C**).
2. The approval assumed that the poplars could be cleared during a period when GHFF had seasonally vacated the camp. Condition 4 restricts planned dispersal of GHFF to only occur AFTER the action has commenced. However, GHFF have not vacated the camp since 2013. In 2014 over 80,000 GHFF occupied the 'Sumer Camp' and vegetation adjacent to it and on the river bank opposite. This was well above previous recorded levels of occupation.
3. The roost is based in a stand of poplars which are entangled by invasive weeds. While this creates a moist microclimate preferred by the GHFF, the combination of defoliation by GHFF and Council's inability to manage the weeds without disturbing the GHFF has resulted in poplars dying and becoming dangerous, particularly to people who use the riverside walking trail which passes adjacent to the camp.

4. The East Gippsland Shire Council has experienced considerable public concern about the impact of the colony on public paths and neighbouring residents while being unable to undertake the approved tree removal unless all the GHFF happen to vacate the camp at the time of year when works are approved to occur. Council officers have told Departmental officers that some residents have left their homes and have been unable to sell them as a result of the smell, noise and concern about health risks from GHFF which have occupied their gardens and the exterior of their houses.
5. The East Gippsland Shire Council initiated discussions with the Department and the Victorian Department of Environment, Land, Water and Planning in September 2014 to develop options to enable them to proceed with the approved action. Officers from both Departments met with the Council and inspected the site on 23 October 2014.
6. Officers from the Department also inspected the substantial native revegetation which has been successfully established over many years on the opposite bank of the river which is well away from any residences. Officers of East Gippsland Shire Council and the Victorian Department of Environment, Land, Water and Planning confirmed that during periods of peak GHFF colony occupation, this native vegetation supports large numbers of GHFF, suggesting that the GHFF have a suitable place to relocate if dispersed and following vegetation removal in accordance with the approved action.
7. The Department has indicated to the East Gippsland Shire Council that, if it can provide evidence that specific poplar trees pose an immediate risk to the safety of people, the Council may remove such trees without the Department taking compliance action, so long as removal is managed in accordance with a management plan that protects the GHFF. The Department has asked that such emergency tree removal be detailed in a revised version of the Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan.
8. The Department proposed to the Council in January 2015 that condition 4 be varied to enable non-emergency dispersal of GHFF prior to vegetation removal so that hazardous tree removal and/or the approved action can be undertaken without GHFF in the vicinity of the tree felling work. Currently condition 4 only enables dispersal of GHFF **after** vegetation removal. The only current condition allowing GHFF dispersal prior to vegetation removal is condition 5 which is designed to address the circumstance of the GHFF colony relocating to a public facility such as a school.
9. On 25 March 2015 East Gippsland Shire Council confirmed in writing (**Attachment D**) its request to have condition 4 varied as discussed. The Department has advised the East Gippsland Shire Council that they will need to submit a revised Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan containing details of how it proposes to undertake non-emergency dispersal and hazardous tree removal. The Council has indicated that it is currently revising the approved plan and, if the proposed variation is approved, it will submit this plan to address the requirements of the varied condition.
10. The East Gippsland Shire Council is aware that it will also need to obtain authorisation under the *Victorian Wildlife Act 1975* to carry out works in the presence of GHFF and to disturb GHFF (**Attachment E**).
11. The Department recommends that you vary condition 4 attached to EPBC Approval 2009/5017 as shown in the attached proposed decision notice instrument (**Attachment A**).
12. Victoria and Tasmania Assessment Section has been consulted in the preparation of this brief. This advice emphasised the importance of ensuring that a management plan is in place that will ensure the GHFF are protected should their habitat be removed.
13. The Department has prepared the attached reply to the East Gippsland Shire Council for your signature (**Attachment B**).

14. The Minister has delegated you as decision maker for this matter pursuant to section 515(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

s22

A/Director
Post Approvals Section
Ph: 6275 **s22**
9 April 2015

Contact Officer: **s22**
Post Approvals Section
Ph: 02 6274 **s22**

Attachments

- A: Variation instrument for condition 4 attached to EPBC Approval 2009/5017 (**for signature**)
- B: Proposed letter to East Gippsland Shire Council advising East Gippsland Shire Council of your decision (**for signature**)
- C: Approval: East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017)
- D: Email to the Department from East Gippsland Shire Council dated 25 March 2015 requesting that you vary condition 4 for the Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria project (EPBC 2009/5017)
- E: Email to the East Gippsland Shire Council from the Victorian Department of Environment, Land, Water and Planning advising East Gippsland Shire Council of its requirement to obtain authorisation under the Victorian Wildlife Act 1975



VARIATION TO CONDITIONS ATTACHED TO APPROVAL

East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox (*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017).

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Approved action

Person to whom the approval is granted	East Gippsland Shire Council ABN: 81 957 967 765
--	---

Approved action	To remove 0.5 hectares of poplar trees as part of the East Gippsland Shire Council poplar removal program which provide a 'summer camp' roost site for Grey-headed Flying-foxes (<i>Pteropus poliocephalus</i>) in Bairnsdale, Victoria [see EPBC Act referral 2009/5017].
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Variation

Variation of conditions of approval	The variation is: Delete condition 4 attached to the approval dated 11 April 2014 and substitute the condition specified below.
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Date of effect	This variation has effect on the date the instrument is signed
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Person authorised to make decision

Name and position	Shane Gaddes Assistant Secretary Compliance and Enforcement Branch
-------------------	--

Signature

Date of decision	10 April 2015
------------------	---------------

Condition attached to the approval

see over.

Condition attached to the approval

4. If the person taking the action proposes to undertake a **dispersal** then a management plan must be submitted for the **Minister's** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
 - c) The presence of pregnant **Grey-headed Flying-fox**;
 - d) The presence of **dependant young**;
 - e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - f) Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
 - g) Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.



Australian Government
Department of the Environment

Ms Kate Nelson
Director Planning and Community
East Gippsland Shire Council
PO Box 1618
Bairnsdale VIC 3875

Dear Ms Nelson

**East Gippsland Shire Council Poplar Removal Program – Grey-headed Flying-fox
(*Pteropus poliocephalus*) Summer Camp, Bairnsdale, Victoria (EPBC 2009/5017) -
Variation to condition 4 of approval**

I refer to your email of 25 March 2015 to the Department, requesting a variation to condition 4 of the Approval dated 11 April 2014.

As delegate of the Minister for the Environment I have decided to approve your request to vary condition 4 of the approval in accordance with the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Condition 4 must now be undertaken in accordance with the attached variation notification. This will require the East Gippsland Shire Council to submit for approval a revised Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan. The East Gippsland Shire Council must not commence dispersal of Grey-headed Flying-fox in accordance with condition 4 until the revised Bairnsdale Grey-headed Flying-fox Roost Site Strategic Management Action Plan has been approved.

The variation of conditions of approval does not relieve the person to whom it has been granted from an obligation to comply with any other law of the Commonwealth, state or territory that is applicable to do the action and to have any right, title or interest that is required to access land or waters and to do the action. I understand that the Victorian Department of Environment, Land, Water and Planning has advised you of requirements under state law that must also be satisfied in order to implement condition 4 as now varied.

Please ensure that East Gippsland Shire Council maintains accurate records of all activities associated with, or relevant to the conditions of approval, so that they can be made available to the Department on request. Such documents may be subject to audit and used to verify compliance. Summaries of results of audits may be published by the Department. Information about the monitoring and audit program can be found on the Department's website at www.environment.gov.au/epbc/compliance/auditing.html.

You should note that any transfer of this approval to another person must have the consent of the Minister for the Environment under section 145B of the EPBC Act.

Should you require any further information please contact Mr s22 Assistant
Director, Post Approvals Section, on 02 6274 s22 or by email:
s22 @environment.gov.au.

Yours sincerely



Shane Gaddes
Assistant Secretary
Compliance and Enforcement Branch
10 April 2015

Att.

s22

From: Kate Nelson s22 >
Sent: Wednesday, 25 March 2015 4:07 PM
To: s22
Cc: s22 Ryan.Incoll@delwp.vic.gov.au;
s22 @depi.vic.gov.au
Subject: RE: Bairnsdale flying fox - progress with Commonwealth advice [SEC=UNCLASSIFIED]
Follow Up Flag: Follow up
Flag Status: Flagged
Categories: to file

Hi s22

Thanks for the opportunity to discuss your proposed amendments as set out below and for your subsequent clarification of my questions.

I would like to confirm that East Gippsland Shire would like to pursue amendment of the current conditions as you have proposed.

Please let me know if you require anything further to commence this process.

Thanks, Kate

■ **Kate Nelson** ■ *Director Planning and Community*

 Please consider the environment before printing this e-mail.

From: s22 @environment.gov.au]
Sent: Wednesday, 4 February 2015 12:57 PM
To: Kate Nelson
Cc: s22
Subject: FW: Bairnsdale flying fox - progress with Commonwealth advice [SEC=UNCLASSIFIED]

Hi Kate

Just checking if my proposal below is helpful or if there are any alternatives you seek, and if you would like me to organise a phone meeting.

Cheers

s22
Post Approvals Section

Phone: 02 6274 s22

From: s22
Sent: Friday, 23 January 2015 3:59 PM
To: 'Kate Nelson'
Cc: s22 'Ryan.Incoll@delwp.vic.gov.au'
Subject: RE: Bairnsdale flying fox - progress with Commonwealth advice [SEC=UNCLASSIFIED]

Hi Kate, Ryan and s22

Further to our meeting last year and subsequent communications, the variation I propose to EPBC 2009/5017 is as follows:

In condition 4 remove the phrase “following the **removal of habitat** at the **Mitchell River Roost Site**,” and the later word “**separate**”.

This would then allow a dispersal to take place which is not an ‘emergency’ dispersal, to facilitate vegetation removal. A management plan (largely based on the current approved one) would be required, which could, for example, detail a strategy for combined minor dispersal and gradual vegetation removal starting from the vicinity of the houses, so that, ideally, just the GHFF closest to the houses move, and they just cross the river. The revised plan could include proposed adaptive management responses so that action could be altered on the spot to deal with how the GHFF respond.

The revised condition would read:

4. If the person taking the action proposes to undertake a **dispersal** then a management plan must be submitted for the **Minister’s** approval. The management plan must be approved by the **Minister** prior to the commencement of **dispersal** activities. At a minimum, the plan must address:
 - a) Proposed methodology for **dispersal**;
 - b) Potential direct, indirect, cumulative and facilitative impacts to **Grey-headed Flying-fox** from the proposed **dispersal** activity;
 - c) The presence of pregnant **Grey-headed Flying-fox**;
 - d) The presence of **dependant young**;
 - e) A commitment that the **dispersal** will not be undertaken on a **Hot Day** or on or within two days of a **Heat Stress Event**;
 - f) Proposed avoidance and mitigation measures addressing potential impacts to **Grey-headed Flying-fox**, which must at a minimum include, **stop work triggers**; and
 - g) Monitoring and reporting protocols.

Condition 4 does not apply to an **emergency dispersal**.

Cheers

s22

Post Approvals Section

Phone: 02 6274 s22

From: s22

Sent: Thursday, 22 January 2015 11:32 AM

To: 'Ryan.Incoll@delwp.vic.gov.au'; 'Kate Nelson'

Cc: s22

Subject: RE: Bairnsdale flying fox - progress with Commonwealth advice [SEC=UNCLASSIFIED]

Hi s22 and Kate

I had hoped to have briefed the delegate by now, but other pressing cases keep pushing it back.

If nothing new blindsides me, I can come to you with a proposed variation tomorrow afternoon and get a brief to the delegate next Tuesday.

Cheers

s22

Post Approvals Section

Phone: 02 6274 s22

From: Ryan.Incoll@delwp.vic.gov.au [<mailto:Ryan.Incoll@delwp.vic.gov.au>]
Sent: Thursday, 22 January 2015 11:27 AM
To: 'Kate Nelson'; s22
Cc: s22
Subject: Bairnsdale flying fox - progress with Commonwealth advice

Hi s22 and Kate

Has there been any progress with advice from Commonwealth on variations to the current EPBC approval for works at the Bairnsdale Grey-headed Flying Fox camp?

We are keenly aware that if there is to be on-ground actions taken in April/May based on a variation to the approval, the planning for these actions would need to begin immediately. There may also need to be associated Victorian Government approvals.

regards

Ryan Incoll | Regional Manager Environment & Natural Resources | Gippsland

Regional Services | Department of Environment, Land, Water & Planning

71 Hotham St, Traralgon, Victoria 3844

T: 03 5172 2509 | M: s22 | F: 03 5172 2100 | E: ryan.incoll@delwp.vic.gov.au

www.delwp.vic.gov.au



From: s22 <s22@environment.gov.au>
To: 'Kate Nelson' s22 <s22@environment.gov.au>,
Cc: "Ryan.Incoll@delwp.vic.gov.au" <Ryan.Incoll@delwp.vic.gov.au>, s22
s22
Date: 05/12/2014 07:29 PM
Subject: RE: Draft news release - flying fox update [SEC=UNCLASSIFIED]

Thanks, Kate.
I'll aim for very early January.

Cheers

s22
Post Approvals Section

Phone: 02 6274 s22

From: Kate Nelson [<mailto:s22@environment.gov.au>]

Sent: Friday, 5 December 2014 4:38 PM

To: s22

Cc: Ryan.Incoll@delwp.vic.gov.au; s22

Subject: RE: Draft news release - flying fox update [SEC=UNCLASSIFIED]

Thanks s22

If you are able to do something before Xmas that would be excellent, but probably not essential as I am unlikely to be in a position to do anything with it until early January in any case!

Thanks for the update. I will let s22 know what is going on.

Regards, Kate

■ **Kate Nelson** ■ *Acting Chief Executive Officer*

 Please consider the environment before printing this e-mail.

From: s22 @environment.gov.au]
Sent: Thursday, 4 December 2014 10:18 AM
To: Kate Nelson
Cc: Ryan.Incoll@depi.vic.gov.au; s22
Subject: RE: Draft news release - flying fox update [SEC=UNCLASSIFIED]

Hi Kate

I have a variation that should help in mind, but have been snowed for that last weeks with a lot of other urgent work including a massive FOI (unrelated).

I am hopeful of getting back to you with a proposed approach before Christmas but can't promise because I keep being blindsided by new urgent things.

We finally have some new staff joining the section, although they need a bit of induction before they can fully speed things up.

I read the new NSW policy and agree with your earlier email that it looks good (and very different from the news coverage surrounding it!). I haven't heard any more about release of the Commonwealth Camp Management document.

Cheers

s22
Post Approvals Section

Phone: 02 6274 s22

From: s22 @bigpond.net.au]
Sent: Wednesday, 3 December 2014 9:00 PM
To: 'Kate Nelson'
Cc: Ryan.Incoll@depi.vic.gov.au; s22 @depi.vic.gov.au
Subject: RE: Draft news release - flying fox update

Hi Kate

How are you, Ryan, and s22 going with the process of applying for a dispersal for next April in the case the GHFF don't leave for the winter?

s22
M: s22

-----Original Message-----

From: s22 @bigpond.net.au]
Sent: Friday, 7 November 2014 10:35 AM
To: 'Kate Nelson'; 'Ryan.Incoll@depi.vic.gov.au'; s22 @depi.vic.gov.au'
Subject: RE: Draft news release - flying fox update

Thanks Kate

I'm about to go out for the rest of the day.

I haven't change your document, but believe my quote should read something like this –

"We have been working with the agencies involved to explore legal options to allow work to proceed, but whilst there are no immediately accessible options to allow any relief at this time, we have requested the agencies work together to apply for an approved dispersal action to take place around next April" s22 said.

s22

s22

-----Original Message-----

From: Kate Nelson [<mailto:s22>]

Sent: Friday, 7 November 2014 10:22 AM

To: Ryan.Incoll@depi.vic.gov.au; s22 @depi.vic.gov.au

Subject: Draft news release - flying fox update

Hi Everyone

Here is the draft press release for your consideration and editing – if you would like to make changes can you do this a Mark Ups so that I can see what you are after?

If you can have a look for me asap, that would be appreciated.

We also have the photo and will put this with the release once finalised.

Regards, Kate Nelson

s22

From: s22 @delwp.vic.gov.au
Sent: Wednesday, 1 April 2015 4:31 PM
To: s22
Cc: s22 @egipps.vic.gov.au; Kate Nelson;
Ryan.Incoll@delwp.vic.gov.au; s22 @delwp.vic.gov.au;
s22 @delwp.vic.gov.au
Subject: Authorisation under Vic Wildlife Act for GHFF disturbance
Categories: to file

Hi s22 ,

As you are aware the EGSC would also require a authorisation under the Victorian Wildlife Act 1975 to carry out the vegetation removal at the flying-fox camp site when bats are present at the site.

The authorisation would be required to disturb the bats in preparation for the clearing works. The requirement to have a authorisation is about the flying-foxes not the vegetation or tree removal.

Following relevant section for your information.

Section 28A (1A) The Secretary may give written authorisation to a person to disturb wildlife or cause wildlife to be disturbed if the Secretary is satisfied that the authorisation is necessary—

(a) because the wildlife is damaging any building, vineyard, orchard, crop, tree, pasture, habitat or other property, owned, occupied or administered by the person to whom the authorisation is to be issued or property adjacent to or in proximity to such property; or

(b) to support a recognised wildlife management plan.

For purposes of 28A (1A) (b) we would consider a recognised wildlife management plan to be matters covering the flying-foxes in the Shires vegetation plan.

For an authorisation to be issued we would require an application covering (and not restricted to);

- Reason for the disturbance
- Triggers and decision making to commence the disturbance
- When will the disturbance be done
- Who is going to carry out the disturbance
- How will be the disturbance be done and what methods will be used
- What equipment will be used
- What area is the disturbance aimed at
- What will be the radius/distance from the planned works and disturbance site for bats to be excluded before works commence
- Information that welfare of the bats has been considered, covering possible injuries, heat stress or young bats
- Monitoring of the bats during works
- Information about media and community engagement and awareness
- Stop work triggers

Conditions of the authorisation will include and take into account the information provided. Some of the information has already been covered in the vegetation plan submitted to the Commonwealth.

It would be appropriate to highlight in your application that the application for disturbance is aimed at 'nudging' the bats further down or across the river rather than a dispersal aimed at driving the bats away altogether.

It may be appropriate to arrange a meeting to explain and clarify what we are after.

To help with planning and your decision making, static counts conducted late March estimate the population in Bairnsdale at just under 7000 and Maffra just over 1000. This indicates the population in both camps to be dropping. It is anyone guess if the bats leave this year or a number stay over winter like last year. This is why the triggers and deciding when the disturbance and works goes ahead is important.

We will continue to conduct monthly fly out counts and do static counts each fortnight.

Regards

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