



SYDNEY COASTAL COUNCILS GROUP INC.

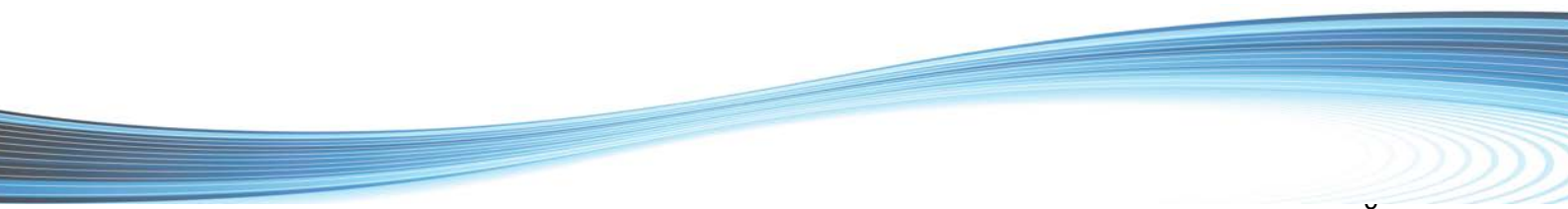
councils caring for the coastal environment

## SUBMISSION

# Australian Government Inquiry into Flying-fox Management in the Eastern States

18 November 2016

Ref: 100-16  
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## Introduction

Established in 1989, the Sydney Coastal Councils Group (SCCG) is a co-operative organisation with over twenty-five years of experience in leading sustainable coastal management. The SCCG currently comprises eleven Member Councils who represent almost 1.5 million Sydney residents.

The Sydney Coastal Councils Group Strategic Plan 2015 – 2019 sets out three guiding principles which encapsulate the core ambitions of the SCCG:

1. Restore, protect and enhance the coastal environment, its associated ecosystems, ecological and physical processes and biodiversity.
2. Facilitate the sustainable use of coastal resources, now and in the future.
3. Promote adaptive, integrated and participatory management of the coast.

We commend the Australian Government for advancing this important issue, and welcome the opportunity to contribute to the Inquiry into Flying-fox Management in the Eastern States.

The Sydney Coastal Councils Group has been engaged on the issue of flying-fox management since 2015. At the July Meeting of the SCCG Technical Committee, delegates raised the issue of flying-fox camps and the sanctioned dispersal methods under the 2015 Flying-fox Camp Management Policy developed by the NSW Office of Environment and Heritage (OEH).

Following a resolution by the Technical Committee and subsequent correspondence with OEH, the SCCG committed to convening a Sydney Regional Flying-fox Forum to share information and experiences, and to discuss the science, policy, management, consultation and community engagement aspects of flying-fox management.

Our submission focuses on the discussions and outcomes from the Sydney Regional Flying-fox Forum and other meetings with our Member Councils, and has been arranged under the Terms of Reference for the Inquiry.

## General Comments

Flying-foxes are enormously important ecosystem engineers, and vital to the sustained health and productivity of native forests across Eastern Australia. The enormous distances that flying-foxes cover enable them to deliver pollination and seed-dispersal services at a geographic scale that no other species is capable of providing.

The National Monitoring Program coordinated by the CSIRO indicates that the grey-headed flying-fox (*Pteropus poliocephalus*) population is at best stable, but more likely is in decline. The threats that originally led to the listing of the species remain and new threats such as extreme weather events are emerging (Westcott *et al.*, 2015). The species status of 'vulnerable' therefore remains valid.

In recent years, flying-foxes (of all species) have been establishing new roost sites and gathering in large numbers in urban and peri-urban areas. There is growing evidence that these changes are not due to increased populations, but they are consistent with behavioural responses to acute food shortages (Eby et al., 2012).

The impacts of extensive habitat destruction and a changing climate are leading to changes in range and habitat use by these mobile species. Flying-foxes are becoming increasingly concentrated in urban areas, leading to conflict with surrounding residents who regularly raise noise, smell and health concerns. Similar issues are faced by local councils across large parts of Queensland, New South Wales and Victoria.

Local councils are under increasing pressure to respond to community complaints, and subsequently are bearing the enormous financial and human costs of camp dispersal and other actions, with no guarantee that the actions will be successful and an increasing likelihood that the difficulties experienced by residents will be shared over a wider area, affecting even more people.

## Comments on the Terms of Reference for the Inquiry

### 1. The circumstances and process by which flying-foxes are listed and delisted as threatened species at both the state and Commonwealth levels

This topic has not been discussed extensively by the SCCG and our Member Councils. However, we strongly support the continuation of robust, evidence-driven processes for assessing species for listing as threatened at both the state and Commonwealth level. In broad terms, the criteria that should be considered when assessing species for listing, or changes to listing, should be scientific information about the ecology, population status, distribution and threats to the species. The scientific listing process or changes to the status of a species must not be influenced by political, economic or social matters.

#### Recommendations:

- 1.1 The scientific listing process or changes to the status of a species must not be influenced by political, economic or social matters. The SCCG strongly supports the implementation of robust, scientific evidence-driven processes for listing or changing the status of species and communities at both the state and Commonwealth level.
- 1.2 The National Flying-fox Monitoring Programme coordinated by the CSIRO and the Australian Government Department of the Environment is an extremely useful initiative and the SCCG recommends extending the funding and support for this programme.

### 2. The interaction between the state and Commonwealth regulatory frameworks

The SCCG are extremely concerned about the package of proposed reforms to the NSW legislation on the management of threatened species, biodiversity and native

vegetation. It is very likely that the proposed reforms will result in a significant impact to at least one Matter of National Environmental Significance (MNES), the grey-headed flying-fox, and potentially many more. The SCCG recommends that the Commonwealth exercise its powers to ensure that the NSW Government meets its national and international requirements to protect MNES such as nationally-listed threatened species.

The NSW reforms constitute a severe weakening of environmental protections in this state. The SCCG have expressed serious reservations about the proposed legislative changes in our [submission](#) to the reforms' public consultation process (SCCG, 2016), and in subsequent letters to NSW Government representatives.

In particular, the SCCG recommended to the NSW Government that the *Native Vegetation Act 2003* (NV Act) be retained. The NV Act has achieved, among other things, the following outcomes:

- Nearly a thousand Property Vegetation Plans protecting and/or improving management over 4.2 million hectares of native vegetation on farmland,
- A reduction in clearing for agriculture from an average of 17,575 hectares per year to an average of 10,540 hectares per year, following the commencement of the Act, and
- Preventing the death of approximately 116,000 native mammals per year as a result of land clearing (WWF-Australia, 2015).

The repeal of the NSW NV Act and replacement with the extremely lax provisions for land clearing under the proposed *Local Land Services Amendment Bill 2016* will lead to a significant increase in vegetation clearing and put many species on a faster trajectory to extinction, including flying-foxes.

The SCCG is also concerned that increased land clearing in rural areas will further exacerbate the existing conflict between humans and flying-foxes in urban areas. The clearing of roosting habitat across Eastern Australia "*has forced the Grey-headed Flying-fox to set up daytime roosts in suburban areas*" (Australian Government Department of the Environment, 2016). In recent years, flying-foxes (of all species) have been establishing new roost sites and gathering in increased numbers in urban and peri-urban areas. There is growing evidence that these behavioural changes are consistent with behavioural responses to acute food shortages (Eby, et al., 2012). If foraging and roosting habitat for flying-foxes is not protected in rural areas, it is likely to result in even greater reliance by these species on habitat in urban areas where the potential for conflict with human residents is substantially greater.

## **Recommendations:**

- 2.1 The SCCG recommends that the Commonwealth exercise its powers to ensure that the NSW Government meets its national and international requirements to protect MNES such as nationally-listed threatened species.

### 3. Strategic approaches to managing species at a regional scale

The SCCG is strongly supportive of taking a regional approach to managing flying-foxes. We have promoted this approach to the NSW Office of Environment and Heritage in correspondence, meetings and other discussions.

On 7 June 2016, with the assistance of OEH, the SCCG hosted a Sydney Regional Flying-fox Forum with expert speakers on the science, policy, management, consultation and community engagement aspects of flying-fox management. As well as providing updates on NSW policy, management and funding options, scientific research and community engagement techniques and tools, the forum also aimed to consider any gaps in current management, knowledge, funding and other resource needs.

At this event, attendees recommended that a regional approach to flying-fox management should include:

- Regional mapping of existing camps, potential roost habitat, foraging habitat and habitat improvement sites to inform management plans and plan approvals;
- Consideration of the potential impacts of a management action in one Local Government Area on neighbouring LGAs and land managers; and
- A more uniform, coordinated and pro-active (less reactive) approach to flying-fox management across the region.

We are aware that the Hunter Central Coast Regional Operations Branch of OEH are working closely with the Hunter Councils Group (Environment Division) to prepare a Hunter Central Coast Regional Flying-fox Management Strategy. We commend this approach and have recommended to the OEH Greater Sydney Regional Office that a similar approach be taken for the Sydney region.

This inquiry is a welcome opportunity for the Australian Government to facilitate and encourage a similar regional model across all Australian states and territories that are home to flying-foxes, and to support the roll out of a regional model with dedicated financial and other resources via existing delivery mechanisms such as the Local Land Services branches.

#### **Recommendations**

3.1 The conservation of flying-foxes and management of human / flying-fox conflict should be undertaken at the regional scale, and should include as a minimum:

- Regional mapping of existing camps, potential roost habitat, foraging habitat and habitat improvement sites to inform management plans and plan approvals;

- Consideration of the potential impacts of a management action in one Local Government Area on neighbouring LGAs and land managers; and
  - A more uniform, coordinated and pro-active (less reactive) approach to flying-fox management across the region.
- 3.2 The Australian Government to facilitate and encourage a regional approach to flying-fox camp management across all Australian states and territories that are home to flying-foxes, and to support the roll out of a regional model with dedicated financial and other resources via existing delivery mechanisms such as the Local Land Services branches.

#### 4. Opportunities to streamline the regulation of flying-fox management

It is desirable that Commonwealth and state regulations regarding flying-fox conservation and management and local Flying-fox Camp Management Plans are aligned. It is also important to learn from the experiences and lessons of others and not continue to make the same mistakes at each newly formed roost site.

In 2015, the SCCG queried OEH on the strategy and evidence behind the change in position from the 2007 Flying-fox Camp Management Policy to the 2015 Flying-fox Camp Management Policy. The primary objective of the 2007 Policy was to provide a management framework that would *"ensure the maintenance of a network of flying-fox camps throughout their range, and the conservation of the flying-fox population"* (NSW Department of Environment and Climate Change, 2007). By contrast, the 2015 Policy states that *"the overriding purpose of this policy is to minimise health and amenity impacts of flying-fox camps on people while avoiding unnecessary harm to flying-foxes"* (NSW Office of Environment & Heritage, 2015). The 2015 policy differs from the former policy in its focus on minimising the impacts of flying-fox camps on people and its acceptance of camp dispersal as one of the range of management options available to camp managers.

The sanctioning of numerous dispersal activities by both the NSW and Queensland governments has created community expectations and precedents that local governments should control the movements of protected native fauna so as to minimise public nuisance. Given the fragmentation of natural habitats in urban areas and ongoing encroachment of human settlement into natural areas, this is a serious precedent. We are also concerned for the welfare of this protected species, should dispersal activities increase in frequency.

For these reasons, and recognising the high level of public interest in this issue, the SCCG believes that increased guidance and direction from the state and Commonwealth governments is needed on this issue.

#### Recommendations

- 4.1 The Commonwealth and state governments should provide a focus on ensuring that fox-flying habitat is retained in non-nuisance areas and re-established wherever practical.



- 4.2 The Commonwealth and state governments should extend the current National Flying-fox Monitoring Program to also record actions taken, their costs, short- and long-term outcomes and degree of success against their stated objectives.
- 4.3 Proposals to disperse camps currently hosting nationally-listed threatened species such as the grey-headed flying-fox (*Pteropus poliocephalus*) and spectacled flying-fox (*Pteropus conspicillatus*), as well as seeking state government approval, should be required to be referred to the Australian Government for assessment under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) as actions likely to have a significant effect on a Matter of National Environmental Significance. Flying-foxes are highly mobile species, regularly crossing state borders. Assessment of the likely impacts of proposed camp dispersals should therefore be undertaken at the national level for better consideration and monitoring of cumulative impacts and compilation of data on distribution and abundance.
- 4.4 Given the financial burdens already borne by councils in the management of flying-fox camps, it is recommended that the fee mechanism for local council referrals under the EPBC Act be reduced or waived as appropriate.

## 5. The success or otherwise of management actions, such as dispersal of problematic flying-fox camps

The active management of flying-fox camps, particularly dispersal actions, takes a substantial toll on a council's staff and financial resources. The responsibility of reducing the conflict between urban and peri-urban roost sites and human communities has fallen almost entirely to local councils, especially in the greater Sydney region.

Dispersal attempts almost always fail to entirely remove all flying-foxes from a local area (Roberts & Eby, 2013), and often just make an already difficult situation worse, by spreading the problems experienced by human residents over a wider area.

For example, dispersal activities in the town of Maclean, northern NSW, over the period of 1999-2007 did not remove all flying-foxes from the Maclean camp, thereby not resolving the difficulties experienced by those residents, but did result in the establishment of a new camp in the nearby town of Iluka in 2004 (Roberts *et al.*, 2011). The residents of Iluka then also began lobbying the state and local governments to disperse the flying-foxes. Roberts *et al.* (2011) compiled records to find that this relocation attempt cost in excess of \$400,000, and was not just ineffective but essentially doubled the degree of human/flying-fox conflict.

Results like this indicate that dispersal attempts, as well as clearly not being in the interests of protecting threatened species, are also a substantial waste of ratepayers' and tax payers' money.

The SCCG acknowledges the recent funding dedicated by the NSW Government to developing flying-fox Camp Management Plans and implementing their recommendations; and also the efforts made by OEH to provide opportunities to share lessons and intellectual resources on these issues. However, there has been no guarantee that similar funding will be available in future years.

Investment in restoring and creating habitat for flying-foxes in conflict-free areas should begin now, as habitat trees planted now will not be suitable for flying-fox use for ten years or more. In the interim, communities affected by flying-fox camps will need to be supported in finding ways of living with flying-foxes in close proximity and mitigating the noise and smell concerns of residents. All these efforts should be co-funded by Commonwealth, state and local governments

### **What works?**

At the Sydney Regional Flying-fox Forum, attendees made the following observations and recommendations for management actions that they had found through hard-won experience to be effective:

- Be pro-active. Identify areas of potential future conflict and prepare with early engagement. Start developing a Camp Management Plan and importantly, engage with residents as soon as a flying-fox camp forms. It is much easier to talk to the community when you are not in the middle of an intense conflict.
- Ask residents questions about what would lessen the noise, smell and mess impacts of flying-foxes rather than what management outcome they would like to see.
- Talk to different sectors of the community separately, not in open public meetings. This issue is highly polarising and people with different opinions need to be listened to individually. Open public meetings often create a forum to increase the human / human conflict.
- Consider training in, or obtaining access to, non-traditional wildlife or reserve management skills such as conflict resolution, negotiation and human psychology.
- Communicate about *all* actions undertaken by council, including the processes of community engagement, management plan preparation and impact mitigation options such as car and washing line covers, cleaning tools etc. Don't shy away from "more media" around positive activity – better to lessen the opportunity to complain that "nothing has been done".
- Consider making use of the [Flying-fox Engage](#) online engagement and decision support tool provided by OEH.

## What doesn't work?

A study of 17 camp dispersal attempts found only one was successful in reducing the number of flying-foxes in the local area. This study found that:

- dispersed animals do not move far (69% moved less than 600 metres);
- repeat actions are almost always required; and
- that the conflict for the wider community is usually not resolved (Roberts & Eby, 2013).

The experiences of our Member Councils who have attempted dispersal actions generally align with these findings.

## Recommendations

- 5.1 State agencies and local councils must start working together now to identify suitable conflict-free or low-conflict sites where habitat can be maintained and increased, potentially funded collaboratively by multiple partners.
- 5.2 Develop common communication and engagement resources at the national level for use by local governments, that can be amended as required for local considerations.

## 6. Summary of Recommendations

- 1.1 The scientific listing process or changes to the status of a species must not be influenced by political, economic or social matters. The SCCG strongly supports the implementation of robust, scientific evidence-driven processes for listing or changing the status of species and communities at both the state and Commonwealth level.
- 1.2 The National Flying-fox Monitoring Programme coordinated by the CSIRO and the Australian Government Department of the Environment is an extremely useful initiative and the SCCG recommends extending the funding and support for this programme.
- 2.1 The SCCG recommends that the Commonwealth exercise its powers to ensure that the NSW Government meets its national and international requirements to protect MNES such as nationally-listed threatened species.
- 3.1 The conservation of flying-foxes and management of human / flying-fox conflict should be undertaken at the regional scale, and should include as a minimum:

- Regional mapping of existing camps, potential roost habitat, foraging habitat and habitat improvement sites to inform management plans and plan approvals;
  - Consideration of potential impacts of a management action in one Local Government Area on neighbouring LGAs and land managers; and
  - A more uniform, coordinated and pro-active (less reactive) approach to flying-fox management across the region.
- 3.2 The Australian Government to facilitate and encourage a regional approach to flying-fox camp management across all Australian states and territories that are home to flying-foxes, and to support the roll out of a regional model with dedicated financial and other resources via existing delivery mechanisms such as the Local Land Services branches.
- 4.1 The Commonwealth and state governments should provide a focus on ensuring that fox-flying habitat is retained in non-nuisance areas and re-established wherever practical.
- 4.2 The Commonwealth and state governments should extend the current National Flying-fox Monitoring Program to also record actions taken, their costs, short- and long-term outcomes and degree of success against their stated objectives.
- 4.3 Proposals to disperse camps currently hosting nationally-listed threatened species such as the grey-headed flying-fox (*Pteropus poliocephalus*) and spectacled flying-fox (*Pteropus conspicillatus*), as well as seeking state government approval should be required to be referred to the Australian Government for assessment under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) as actions likely to have a significant effect on a Matter of National Environmental Significance. Flying-foxes are highly mobile species, regularly crossing state borders. Assessment of the likely impacts of proposed camp dispersals should therefore be undertaken at the national level for better consideration and monitoring of cumulative impacts and compilation of data on distribution and abundance.
- 4.4 Given the financial burdens already borne by councils in the management of flying-fox camps, it is recommended that the fee mechanism for local council referrals under the *EPBC Act* be reduced or waived as appropriate.
- 5.1 State agencies and local councils must start working together now to identify suitable conflict-free or low-conflict sites where habitat can be maintained and increased, potentially funded collaboratively by multiple partners.
- 5.2 Develop common communication and engagement resources at the national level for use by local governments, that can be amended as required for local considerations.

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## APPENDICES

Appendix A: Letter to NSW Office of Environment and Heritage re NSW  
2015 Flying-fox Camp Management Policy, 11 Aug. 2015



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065-15EN

11 August 2015

Mr Paul Elton  
Executive Director, Policy  
Office of Environment and Heritage  
PO Box A290  
Sydney South NSW 1232

**Re: 2015 Flying-fox Camp Management Policy**

Dear Mr Elton,

At the July Meeting of the Sydney Coastal Councils Group (SCCG) Technical Committee, delegates raised the issue of flying-fox camps and the sanctioned dispersal methods under the 2015 Flying-fox Camp Management Policy developed by the Office of Environment and Heritage (OEH).

Based on a resolution put forward at the Technical Committee Meeting, the SCCG is seeking clarification from OEH on the strategy and evidence-based research behind the recent change in position from the 2007 Policy to the 2015 Flying-fox Camp Management Policy. The primary objective of the 2007 Policy was to provide a management framework that would "ensure the maintenance of a network of flying-fox camps throughout their range, and the conservation of the flying-fox population".<sup>1</sup> By contrast, the 2015 Policy states that "the overriding purpose of this policy is to minimise health and amenity impacts of flying-fox camps on people while avoiding unnecessary harm to flying-foxes".<sup>2</sup> The 2015 Policy differs from the former Policy in its focus on minimising the impacts of flying-fox camps on people and its acknowledgement that camp dispersal may be a successful way of removing impacts on local communities.

Given that the flying fox is a protected species under NSW and Federal legislation, would OEH please provide the SCCG with the scientific information and evidence-based research that was used to determine the change of position in the 2015 Policy. We also seek information in relation to Commonwealth consultation and determinations on this new policy approach and how it interacts with EPBC referrals, associated assessments and permits.

It is recognised that flying-fox camps in urban areas can result in a loss of amenity and other nuisance for residents and that local Councils are under increasing pressure to respond to community complaints. However, the assertion that dispersal is a successful way of removing impacts on local communities is questionable without access to scientific evidence-based research, particularly given that the 2007 Policy stipulated that dispersal is generally not supported as it is often unsuccessful, highly expensive and has uncertain outcomes.<sup>3</sup> A study of 17 dispersal attempts found that in 91 per cent of cases dispersed animals stayed in the local area and formed new camps within 2km of the original site.<sup>4</sup> The study also found that repeat actions were required to keep animals from returning and that financial costs were extremely high.<sup>5</sup>

<sup>1</sup> <http://www.environment.nsw.gov.au/resources/threatenedspecies/ffcmp07281.pdf>

<sup>2</sup> <http://www.environment.nsw.gov.au/resources/threatenedspecies/150070-flyingfoxcamp-policy.pdf>

<sup>3</sup> <http://www.environment.nsw.gov.au/resources/threatenedspecies/ffcmp07281.pdf>

<sup>4</sup> [http://ausbats.org.au/download/i/mark\\_dl/u/4008973680/4601364966/ABS%20Position%20statement\\_Flying%20Fox%20Camp%20Dispersal.pdf](http://ausbats.org.au/download/i/mark_dl/u/4008973680/4601364966/ABS%20Position%20statement_Flying%20Fox%20Camp%20Dispersal.pdf)

<sup>5</sup> [http://ausbats.org.au/download/i/mark\\_dl/u/4008973680/4601364966/ABS%20Position%20statement\\_Flying%20Fox%20Camp%20Dispersal.pdf](http://ausbats.org.au/download/i/mark_dl/u/4008973680/4601364966/ABS%20Position%20statement_Flying%20Fox%20Camp%20Dispersal.pdf)



As you would be aware, two of the SCCG's Member Councils, Sutherland Shire and Pittwater Councils, have recently commenced dispersal activities. Sutherland Shire Council will spend \$850,000 to disperse an estimated 18,000-large colony, while Pittwater Council has allocated \$120,000 to disperse their colony of 250 to 3,500. These are significant costs for Local Government, especially given the risk that dispersal may not be successful. Of greater concern is the possibility of dispersed animals relocating to new camps that are also in proximity to residential areas in neighboring council areas. Rather than resolving the problem this will simply move the problem from one council area to another. Should this occur, we foresee even greater and ongoing costs to Local Government with uncertain outcomes, which may prompt ad hoc responses and become a potential source of conflict between neighbouring councils.

The sanctioning of dispersal activities also risks creating a community expectation and precedent that Local Government should control the movements of protected native fauna so as to minimise public nuisance. Given the fragmentation of natural habitats in urban areas and ongoing encroachment of human settlement into natural areas, this is a serious and potentially significant precedent to contemplate. We are also concerned for the welfare of this protected species should dispersal activities increase in frequency.

For these reasons, and recognising the high level of public interest in this issue, the SCCG believes that increased guidance and direction from OEH is needed on this issue. Specifically, it is recommended that the following actions be considered:

- Develop a clear set of guidelines as to when camps are problematic based on location, size of camps, available management options, flying-fox welfare and resident amenity.
- Undertake scientific research into camp management, the impacts on flying-fox populations (and individuals) when dispersal action is taken, locations with suitable habitat for potential camp creation, and evidence on where, why and how flying-foxes establish new camps.
- Provide a focus on ensuring that fox-flying habitat is retained in non-nuisance areas and re-established where practical.
- Secure State and Federal Government funding for the development of camp management action plans in partnership with Councils that are range-wide and specific to the Sydney metropolitan area, with clear and concise guidelines on management of urban camps.
- Secure State and Federal Government financial assistance for managing amenity impacts where in-situ management is recommended.
- Establish and resource a monitoring program, to record actions taken, their costs, and short- and long-term outcomes.

Please outline your position in response to these recommendations. We are willing and able to assist OEH work with our Member Councils to resolve these ongoing issues and concerns. If you have any queries in relation to this letter, please contact Emma Norrie, Coastal Projects Officer on 9246 7702 or at [emma@sydneycoastalcouncils.com.au](mailto:emma@sydneycoastalcouncils.com.au)

Yours sincerely,



Geoff Withycombe  
Executive Officer



Appendix B: Response from NSW Office of Environment and Heritage to  
SCCG re NSW 2015 Flying-fox Camp Management Policy, 24 Aug. 2015



Office of  
Environment  
& Heritage

DOC15/317653  
065-15EN

Mr Geoff Withycombe  
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*Handwritten signature and date 3/1/15*

Dear Mr Withycombe

**2015 Flying-fox Camp Management Policy**

Thank you for your letter on behalf of Sydney Coastal Councils Group regarding the management of flying-fox camps in NSW.

Expanding urban settlements, coupled with seasonal conditions and the loss of food sources, often bring flying-foxes into direct contact and potential conflict with people. The NSW Government's management response needs to balance the conservation of the species with community and agricultural interests.

After extensive public consultation, the NSW Government released the Flying-fox Camp Management Policy 2015 to minimise health and amenity impacts of flying-fox camps on people while avoiding unnecessary harm to flying-foxes.

The policy encourages councils to prepare camp management plans for sites where there is a high level impact on the community. Flying-foxes remain protected but, **under the new policy, approvals for land managers to undertake camp management actions will be streamlined** where they are aligned with the policy.

Office of Environment and Heritage (OEH) has a longstanding record of collaboration with local government on flying-fox issues. OEH staff are available to work with local councils to review draft camp management plans to ensure they align with government policy, to assist in identifying the most appropriate management actions for Grey-headed flying-foxes, and to provide advice on the necessary approvals for the proposed actions.

Furthermore, OEH hosts a **Flying-fox Consultative Committee** through which representatives of key interested parties are involved in the development of strategies to conserve and manage the three species of flying-fox in NSW. Local councils are represented on this committee by **Local Government NSW**.



Your letter raises many questions, and we have attempted to respond to all of them here. We would also like to propose a meeting to discuss these matters in more detail. Please contact Jane Gibbs from our Environmental Programs Branch on (02) 4927 3101 to arrange a meeting.

**“Please provide the SCCG with the scientific information and evidence-based research that was used to determine the change of position in the 2015 policy.”**

While the first objective of the 2015 policy is different to the 2007 policy, the overarching goal of the 2015 policy remains the same: encouraging the long-term conservation of the species. The 2015 policy recognises that a key element of the conservation of the species is to minimise conflict between flying-foxes and people.

The 2007 policy allowed for licensed relocation (dispersal) of flying-fox camps in exceptional circumstances. The 2015 policy allows the same, and provides additional detail regarding what might constitute exceptional circumstances. This is provided in the form of a detailed hierarchy of management actions. Land managers proposing to disperse flying-foxes must demonstrate that they have followed the hierarchy of management actions based on a principle of using the lowest form of intervention required. Only when all other efforts have failed to address any conflict will dispersal be considered for approval.

Dispersal of flying-fox camps may be licensed on the basis that Grey-headed flying-foxes are considered as a single mobile population across its range of NSW, Queensland, Victoria, ACT and South Australia, and dispersal from a single roost site is unlikely to constitute a significant impact for the species. This is reflected in the Australian Government's position on dispersal.

**“We also seek information in relation to Commonwealth consultation and determinations on this new policy approach and how it interacts with EPBC referrals, associated assessments and permits.”**

After public consultation, the Australian Government is about to release a final draft of its Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Policy Statement on camp management guidelines for Grey-headed and Spectacled flying-foxes. A draft of the policy statement can be found here: <http://www.environment.gov.au/biodiversity/threatened/species/flying-fox-policy-statement>.

The policy statement aims to help proponents determine whether a proposed action at a flying-fox camp is likely to have a significant impact hence require referral to the Department of the Environment under the EPBC Act.

The policy statement outlines a series of mitigation standards that will, in most circumstances, ensure there is not significant impact on EPBC Act-listed flying-foxes resulting from management actions at their camps. Where those mitigation standards are implemented, or an equivalent state or territory mitigation standard that achieves the same outcome, approval under the EPBC Act is unlikely to be required.

As currently implemented, the NSW Flying-fox Camp Management Policy 2015 achieves the mitigation standards set out in the draft EPBC Act policy statement.

**“Develop a clear set of guidelines as to when camps are problematic based on location, size of camps, available management options, flying-fox welfare and resident amenity.”**

Every flying-fox camp is different. Furthermore, the responses of communities to the presence of flying-foxes tend to vary according to local conditions, history and a range of other factors. For these reasons, the 2015 policy outlines a hierarchy of actions to guide camp management. Within this hierarchy, land managers have the flexibility to manage the camp according to local conditions. For most camps, routine management and creation of buffers, combined with effective community engagement, should be sufficient to minimise conflict between flying-foxes and people.



It should be noted that the decision to disperse a flying-fox camp, where approved under the policy, is the responsibility of the relevant land manager. In the cases of Cannes Reserve and Kareela camps, Pittwater and Sutherland Shire councils both made the commitment to disperse their camps after public consultation.

Throughout the implementation of the policy, Office of Environment and Heritage (OEH) will gather data on each camp and the management responses applied. This information should help guide other land managers dealing with flying-foxes in the future.

**“Undertake scientific research into camp management, the impacts on flying-fox populations (and individuals) when dispersal action is taken, locations with suitable habitat for potential camp creation, and evidence on where, why and how flying-foxes establish new camps. Provide a focus on ensuring that flying-fox habitat is retained in non-nuisance areas and re-established where practical.”**

#### Camp management research

Office of Environment and Heritage is developing detailed monitoring protocols for flying-fox camp management to provide a measure of the effectiveness of management actions, enable assessment of current and future management needs, and inform management actions at other camps. Monitoring will also be useful for assessing impacts on animal welfare and nearby communities, and to ensure compliance with licence conditions where applicable.

Office of Environment and Heritage also coordinates the National Flying-fox Monitoring Program in NSW (<http://www.environment.nsw.gov.au/animals/NFFMP.htm>), conducting quarterly counts of flying-foxes at all known camps throughout the state. This is the most comprehensive count of flying-fox camps ever undertaken. The aim of the program is to establish a reliable baseline estimate of the Grey-headed flying-fox population and to estimate trends over time.

#### Impacts of dispersal

Strict conditions are applied to licences for the dispersal of a flying-fox camp to ensure that impacts on animal welfare are minimised. Given the highly mobile nature of flying-foxes, dispersal is not expected to significantly impact the species at the scale of the population. This is consistent with the Australian Government's policy statement as discussed above.

#### Camp and foraging habitat

Research involving the tracking of flying-foxes has demonstrated time and again that the movement of flying-foxes across the landscape is highly unpredictable. Flying-foxes migrate in response to changes in the quantity and location of food. The locations of camps are generally stable through time, and several sites have documented histories that exceed 100 years. Patterns of camp occupation vary, ranging from sites that are inhabited continuously to those that are inhabited only rarely.

There are currently no plans to create new camp habitat, as it is virtually impossible to predict whether it would be used. Instead, OEH is developing a detailed **guide for the creation and restoration of foraging habitat** across the range of the species, addressing the primary threat to the species. The guide will be published before the end of 2015.

**“Secure State and Federal Government funding for the development of camp management action plans in partnership with councils that are range-wide and specific to the Sydney metropolitan area, with clear and concise guidelines on management of urban camps.”**

The 2015 policy strongly encourages **land managers** to prepare camp management plans for sites where the local community is affected.

The preparation and implementation of these plans is the responsibility of councils and other land managers. OEH encourages affected councils to prepare a flying-fox camp management plan, which is an essential tool for identifying feasible and cost-effective management actions that will be supported by the community.



While the costs involved in preparing camp management plans can be considerable, OEH is working to reduce these costs. Where flying-foxes are affecting local communities, OEH can provide in-kind support to land managers for preparing camp management plans and engaging the local community. **Additional guidance to councils is also being prepared by OEH**, including more detailed information resources which will further reduce the upfront costs of preparing plans.

**“Secure State and Federal Government financial assistance for managing amenity impacts where in-situ management is recommended.”**

The NSW Government does not have a dedicated funding program to assist local government with the management of flying-fox camps. Funding for the conservation and enhancement of flying-fox roosting and foraging habitat is available from the Environmental Trust's restoration and rehabilitation funding stream, particularly where such activity is identified within a camp management plan. Details about the application process are available on the OEH website, and regional OEH staff can also assist in this process.

**“Establish and resource a monitoring program to record actions taken, their costs and short- and long-term outcomes.”**

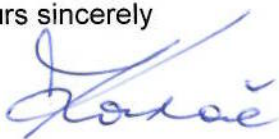
As discussed above, **OEH is developing detailed protocols** to ensure that management actions and their outcomes at flying-fox camps are monitored, evaluated and adapted accordingly.

Furthermore, OEH is exploring the establishment of an **ongoing network of land managers** dealing with flying-fox camp management issues. The purpose of this network is to share knowledge, experience, ideas, research, skills and lessons learnt in managing flying-fox camps. The network will also serve as a support base, discussion forum and resource hub for land managers dealing with contentious camps. We expect to send invitations to join the network in the coming weeks. All councils with flying-fox camps in their areas will be invited to participate.

We welcome your feedback on any of the matters raised in this letter, and again extend the opportunity to meet with staff from our Environmental Programs Branch to discuss the flying-fox Camp Management Policy 2015 in more detail.

Please contact Jane Gibbs on (02) 4927 3101 to arrange a meeting.

Yours sincerely



**MLADEN KOVAC**  
**Acting Director**  
**Environmental Programs Branch**

*24 August 2015*

Appendix C: Letter to NSW Office of Environment and Heritage re a regional approach to flying-fox management in Sydney, 26 Jul. 2016

SYDNEY COASTAL COUNCILS GROUP Inc.  
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Our ref 063-16

26 July 2016

Mr David Trewin  
Regional Manager Greater Sydney  
Office of Environment and Heritage  
PO Box 644 Parramatta NSW 2124

Dear Mr Trewin,

**RE: A regional approach to flying-fox management in Sydney**

The Sydney Coastal Councils Group wishes to once again thank you and your colleagues for your presentations, valuable input and financial support of the Sydney Regional Flying-fox Forum on 7 June 2016. Please find enclosed a copy of the outcomes report from this forum, which has also been distributed to all participants and is available on our website.

In particular we are interested in following up on the outputs of Workshop 2, in which participants were asked to consider the possible structure and desired achievements of a regional approach to flying-fox management, bearing in mind the twin goals of flying-fox conservation and human/flying-fox conflict reduction (pp14-15). Although much remains to be done, we consider this a valuable starting point in what we hope will be an ongoing, positive relationship between the Office of Environment and Heritage, the SCCG and Sydney councils (including, but not limited to, SCCG Member Councils).

The OEH Regional Office is ideally placed to coordinate a regional approach to flying-fox management in the Greater Sydney region, and the SCCG are very pleased to note your interest in this approach. We also commend the Hunter Regional OEH office for their proactive stance in leading a regional approach for the Hunter and Central Coast area.

Please advise on how you would like to progress this approach, at your earliest convenience. The SCCG will be happy to act as a conduit between OEH and our twelve Member Councils in ongoing discussions, if this would be of assistance.

For ongoing flying-fox matters please contact the SCCG Coastal Projects Officer, Katherine Howard, at [katherine@sydneycoastalcouncils.com.au](mailto:katherine@sydneycoastalcouncils.com.au) or on 9246 7702.

We look forward to hearing from you in due course.

Yours sincerely,

Geoff Withycombe  
**Executive Officer**



## Appendix D: Outcomes Report from the SCCG Sydney Regional Flying-fox Forum, 7 Jun. 2016



Office of  
Environment  
& Heritage



SYDNEY COASTAL COUNCILS GROUP INC.  
councils caring for the coastal environment

# Sydney Regional Flying-fox Forum Outcomes Report



7 June 2016

Prepared by:

**Sydney Coastal Councils Group Inc.**  
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## Acknowledgements

This event was generously supported by the NSW Office of Environment and Heritage.



## Background

The grey-headed flying-fox (*Pteropus poliocephalus*) is listed as vulnerable to extinction under the *Australian Environment Protection and Biodiversity Conservation Act 1999* and requires particular conservation attention. As important pollinator species, flying-foxes are critical to the long-term health and survival of native bushland.

The impacts of extensive habitat destruction and a changing climate are leading to changes in range and habitat use by these mobile species. Flying-foxes are becoming increasingly concentrated in urban areas, leading to conflict with surrounding residents who regularly raise noise, smell and health concerns. Similar issues are faced by local councils across large parts of Queensland, New South Wales and Victoria and there are many lessons to be learned from the experiences of others.

Following a resolution by the Sydney Coastal Councils Group (SCCG) Technical Committee and subsequent correspondence with the Office of Environment and Heritage, the SCCG committed to convening a regional forum to share information and experiences, and to discuss the science, policy, management, consultation and community engagement aspects of flying-fox management.

This event was offered to all councils and land managers across Sydney grappling with flying-fox management issues. We encourage local councils and other land managers to take a proactive, collaborative approach to flying-fox management, conservation and community impact mitigation.

## Objectives

- To provide updates on NSW policy, management and funding options from the Office of Environment and Heritage.
- To provide updates on scientific research and monitoring projects from flying-fox experts.
- To provide information on management planning and community engagement tools available to local councils.
- To consider how to address any gaps in current management, knowledge, funding and other resource needs.
- To share information and learn from the experiences of other land managers.

### Attendees

11	41	5	5	11
<b>Speakers</b>	<b>Participants</b>	<b>SCCG Member Councils</b>	<b>Other councils</b>	<b>Other organisations</b>

See Appendix A for full list of attendees.

## Summary

Some of the key messages and suggestions from the forum are captured below under the three broad topics discussed on the day.

### Science and Monitoring

#### Key Messages

- In recent years, flying-foxes (of all species) have been establishing new roost sites and gathering in large numbers in urban and peri-urban areas. There is growing evidence that these changes are not due to increased populations, but they are consistent with behavioural responses to acute food shortages<sup>1</sup>.
- A study of 17 camp dispersal attempts found only 1 was successful in reducing the number of flying-foxes in the local area. Dispersed animals do not move far: 69% moved <600m. Repeat actions generally required and conflict for wider community generally not resolved<sup>2</sup>.
- The National Monitoring Program coordinated by the CSIRO indicates that the grey-headed flying-fox population is at best stable but more likely is in decline. The threats that originally led to the listing of the species remain and new threats such as extreme weather events are emerging<sup>3</sup>. The species status of 'vulnerable' remains valid.
- Flying-foxes travel enormous distances. No other species is capable of providing pollination services at the broad geographic scale of flying-foxes.

#### Recommendations

- The priority right now is to focus on sharing results of research with the community and elected members.
- Research is needed into how to manage odours when the source cannot be reduced or removed.
- Management actions should be monitored for: degree of success; costs; impact on flying-foxes (and other biodiversity); and whether the needs of affected residents have been met.

### Policy and Management

#### Key Messages

- A key challenge lies in educating both residents and elected representatives of the realities, costs and risks of the various camp management options.
- Managing flying-fox camps, particularly dispersal actions, takes a substantial toll on a council's staff and financial resources.
- The 2016 NSW Biodiversity Legislation Reforms are likely to lead to increased land clearing across NSW with additional impact on species such as flying-foxes. Increased habitat loss in rural areas may lead to greater reliance on urban habitat where the potential for conflict with human residents is substantially greater.
- Investment in restoring and creating habitat for flying-foxes in conflict-free areas must begin now, as habitat trees planted now will not be suitable for flying-fox use for ten years or more. In the interim, humans will need to find ways to cope with living with flying-foxes in close proximity.

<sup>1</sup> Eby, P., Martin, J., van der Ree, R., Roberts, B., Divljan, A., & Parry-Jones, K. (2012). Famished - the responses of flying-foxes to food shortages in south-east Australia. *Australasian Bat Society Newsletter* 38, 32.

<sup>2</sup> Roberts, B. & Eby, P. (2013) Review of past flying-fox dispersal actions between 1990-2013.

<http://www.environment.nsw.gov.au/resources/animals/flying-fox-2014-subj/flyingfoxsub-jenny-beatson-part2.pdf>

<sup>3</sup> Westcott, D., Heersink, D.K., McKeown, A. & Caley, P. (2015) Status and trends of Australia's EPBC-listed Flying-foxes. CSIRO, Australia. <https://www.environment.gov.au/biodiversity/threatened/publications/status-and-trends-australias-epbc-listed-flying-foxes>

### Recommendations

- Councils and state agencies to start working together now to identify suitable conflict-free or low-conflict sites where habitat can be maintained and increased, potentially funded collaboratively by multiple partners.
- It is important to learn from the experiences and lessons of others and not continue to make the same mistakes at each newly formed roost site. Available information to be provided in one central, accessible repository.
- Provide elected members with a business case presenting long-term costs and implications of various management actions.
- Elected members at local, state and Commonwealth level need to be engaged and educated in the ecology, habitat, movements and environmental services provided by flying-foxes.
- A regional approach to flying-fox management should include:
  - Regional mapping of existing camps, potential roost habitat, foraging habitat and habitat improvement sites to inform management plans and plan approvals;
  - Consideration of potential impacts of a management action in one Local Government Area on neighbouring LGAs and land managers; and
  - A more uniform, coordinated and pro-active (less reactive) approach to flying-fox management across the region.

## Consultation and Community Engagement

### Key Messages

- The public conversation about flying-foxes needs to change. We need to improve public understanding of the importance of flying-foxes, the high risks of dispersals and the low risks of disease. Major investment is required in building knowledge and encouraging the community to value the importance of flying-foxes, particularly as large-scale pollinators and seed dispersers.

### Recommendations

- Be pro-active. Identify areas of potential future conflict and prepare with early engagement. Start developing a Camp Management Plan and importantly, engage with residents as soon as a flying-fox camp forms. It is much easier to talk to the community when you are not in the middle of an intense conflict.
- Ask residents questions about what would lessen the noise, smell and mess impacts of flying-foxes rather than what management outcome they would like to see.
- Talk to different sectors of the community separately, not in open public meetings. This issue is highly polarising and people with different opinions need to be listened to individually. Open public meetings only create a forum to increase the human / human conflict.
- Consider training in or obtaining access to non-traditional wildlife or reserve management skills, such as conflict resolution, negotiation and human psychology.
- Communicate about *all* actions undertaken by council, including process of community engagement, management plan preparation and impact mitigation options such as car and washing line covers, cleaning tools etc. Don't shy away from "more media" around positive activity – better to lessen the opportunity to complain that "nothing has been done".
- Consider making use of the [Flying-fox Engage](#) online engagement and decision support tool provided by OEH.

# Agenda

Start	H:m	
		<b>Administrative matters</b>
9.00	0:30	<p>1.1 <b>Opening and welcome</b> <i>Geoff Withycombe, Executive Officer, SCCG</i></p> <p>1.2 <b>Background and context</b> <i>Katherine Howard, Coastal Projects Officer, SCCG</i></p>
		<b>Presentations &amp; Workshops</b>
		<b>Science and Monitoring</b>
9.30	0:35	<p><b>Introduction to flying-foxes and updates on recent research</b> <i>Dr Peggy Eby, University of NSW</i> <i>Author of Australian Government Recovery Plan for the Grey-headed Flying-fox</i></p> <ul style="list-style-type: none"> <li>• Introduction to flying foxes: ecology, habits, movements and ecological significance</li> <li>• Review of Flying-fox Dispersals</li> <li>• Habitat mapping and restoration for threatened pollinators</li> </ul>
10.05	0:25	<p><b>Flying-foxes in town</b> <i>Dr Adam McKeown, Research Officer, CSIRO</i> <i>(Apology: Dr David Westcott, CSIRO and National Monitoring Program Coordinator)</i></p> <ul style="list-style-type: none"> <li>• National monitoring program</li> <li>• Status review of grey-headed flying-fox 2015</li> <li>• Why are flying-foxes becoming so urbanised?</li> </ul>
10.30	0:15	<p><b>Royal Botanic Gardens Dispersal and Monitoring Program</b> <i>Dr John Martin, Wildlife Ecologist, Royal Botanic Gardens Sydney</i></p>
10.45	0:15	<p><b>Science and Monitoring Panel Q&amp;A</b> <i>Dr Eby, Dr Martin, Dr McKeown</i></p>
11.00	0:20	<b>MORNING TEA</b>



		<b>Policy and Management</b>
11.20	0.20	<b>Legislation, Policy and Licensing</b> <i>David Trewin, Regional Manager Greater Sydney, Office of Environment and Heritage</i> <ul style="list-style-type: none"> <li>• NSW Policy, relevant legislation and Level 1, 2 and 3 actions</li> <li>• Licensing processes</li> <li>• State and Local Government Working Together</li> </ul>
11.40	0:20	<b>Tools for Management</b> <i>Michael Roache, Principal Project Officer – Threatened Species, Office of Environment and Heritage</i> <ul style="list-style-type: none"> <li>• New expanded Management Plan Template</li> <li>• Flying Fox Land Managers Network</li> <li>• Funding</li> </ul>
12.00	0.15	<b>NSW Policy and Management Panel Q&amp;A</b> <i>David Trewin, Michael Roache, Sarah Burke</i>
12.15	0.15	<b>Case Study: Cannes Reserve, Pittwater</b> <i>Matt Hansen, Principal Officer Natural Resource Management, Pittwater Council</i>
12.30	0.15	<b>Case Study: Kareela Camp, Sutherland</b> <i>Beth Noel, Environmental Project Officer – Ecologist, Sutherland Council</i>
12.45	0.45	<b>Workshop: Management, funding and other resources</b> <ul style="list-style-type: none"> <li>• What do we need to do to improve flying-fox conservation and reduce human/flying-fox conflict? What would add value to existing policy and tools?</li> <li>• What sources of funding are available / could be pursued to resource management actions?</li> </ul>
1.35	0.30	<b>LUNCH</b>
		<b>Consultation and Community Engagement</b>
2.05	0:30	<b>Flying Fox Engage Tool and Resident Impact Mitigation Options</b> <i>Courtney Fink-Downes, Natural Resources Officer, Eurobodalla Shire Council and Lorraine Oliver, Team Leader, Community Engagement, South East Regional Operations Group, Office of Environment and Heritage</i>
2.35	0.15	<b>Case Study: Wolli Creek Camp, Rockdale</b> <i>Alexandra Vandine, Assistant Coordinator Environmental Strategy, Rockdale Council</i>
2.50	0.20	<b>Workshop: A regional approach?</b> <ul style="list-style-type: none"> <li>• How can we pro-actively and positively talk to the community and the media about flying-foxes?</li> <li>• What avenues are there for changing attitudes and behaviour?</li> <li>• How do we live with flying-foxes?</li> </ul>
3.10	0.15	<b>Panel Session: any unanswered questions for all speakers</b>
3.25	0.10	Wrap Up and Close
3.45		<b>MEETING CLOSE</b>

## Summary of Presentations

*In order of appearance. See Appendix B for full presentations from all speakers who gave permission for their slides to be distributed.*

### Introduction to flying-foxes and updates on research

**Dr Peggy Eby, Wildlife Ecologist, consultant and University of NSW**

*Peggy is a behavioural ecologist with a long-standing interest in the flying foxes of south-eastern Australia. For 25 years she has been involved with conservation and management-based research and with communicating the outcomes of that research to the scientific community, wildlife managers, land managers and stakeholder groups. Peggy holds an adjunct position at the University of New South Wales, runs a private consultancy business and holds formal and informal advisory positions with various government agencies.*

This presentation provided a brief overview of current knowledge of the biology, ecology, movements and roost population dynamics of flying-foxes. Particular emphasis was given to information relevant to managing flying-fox roosts in the Sydney Region. The roles of roost camps and the characteristics of camp sites were discussed. The outcomes of 17 dispersal actions from 1990 – 2013 were described<sup>4</sup>. Some recommendations made for restoration plantings and natural regeneration to enhance winter & spring food for nomadic long-distance pollinators in NSW.

### Status and Trends of Australia's EPBC-Listed Flying-Foxes: Results to date from the National Flying-Fox Monitoring Program

**Dr Adam McKeown, CSIRO**

*Adam is a Research Officer at the CSIRO. He works with Dr David Westcott on the National Flying-Fox Monitoring Program and other research into flying-fox ecology.*

The national flying-fox management program (NFFMP) is an initiative of the federal and state governments. It has two main aims:

- to determine the status and trends in the EPBC listed flying-foxes
- to determine the seasonal movements and local abundances, and what this means for management and disease risk.

The latest population estimate for the Grey-headed Flying-fox for November 2015 is just under 700,000 animals. It is difficult to compare previous surveys with the NFFMP, due to different methodology used in both data collection and analysis. However, the Program suggests that this species has at best been stable but more likely has declined by some amount over the pre-NFFMP to NFFMP period. Given this and the fact that the threats that originally led to the listing of the species remain while new threats such as extreme weather events are emerging, there seems to be little justification for downgrading the species status<sup>5</sup>.

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<sup>4</sup> Roberts, B. and Eby, P. (2013) Review of past flying-fox dispersal actions between 1990-2013.

<http://www.environment.nsw.gov.au/resources/animals/flying-fox-2014-sub/s/flyingfoxsub-jenny-beatson-part2.pdf>

<sup>5</sup> Westcott, D., Heersink, D.K., McKeown, A. & Caley, P. (2015) Status and trends of Australia's EPBC-listed Flying-foxes. CSIRO, Australia. <https://www.environment.gov.au/biodiversity/threatened/publications/status-and-trends-australias-epbc-listed-flying-foxes>

## Flying-fox management and conservation at the Royal Botanic Gardens and Centennial Parklands

### Dr John Martin, Wildlife Ecologist, Royal Botanic Gardens and Centennial Parklands

John is the Wildlife Ecologist with the Royal Botanic Gardens Sydney and the Centennial Parklands. John has worked over the last decade on ecological research and management projects with a focus on urban ecology and human—wildlife conflict.

John introduced the historic and recent changes to flying-fox roosting behaviour at the Royal Botanic Gardens and Sydney overall. John coordinated the flying-fox dispersal from the Royal Botanic Garden, which aimed to conserve the living botanical collection within the garden whilst not impacting a nationally listed vulnerable species. This was a major project with over \$1 million spent on the implementation and associated research, including monitoring of the flying-fox population both in the Royal Botanic Gardens and in Centennial Park. The project studied where the dispersed animals went and gathered data on long-range movements.

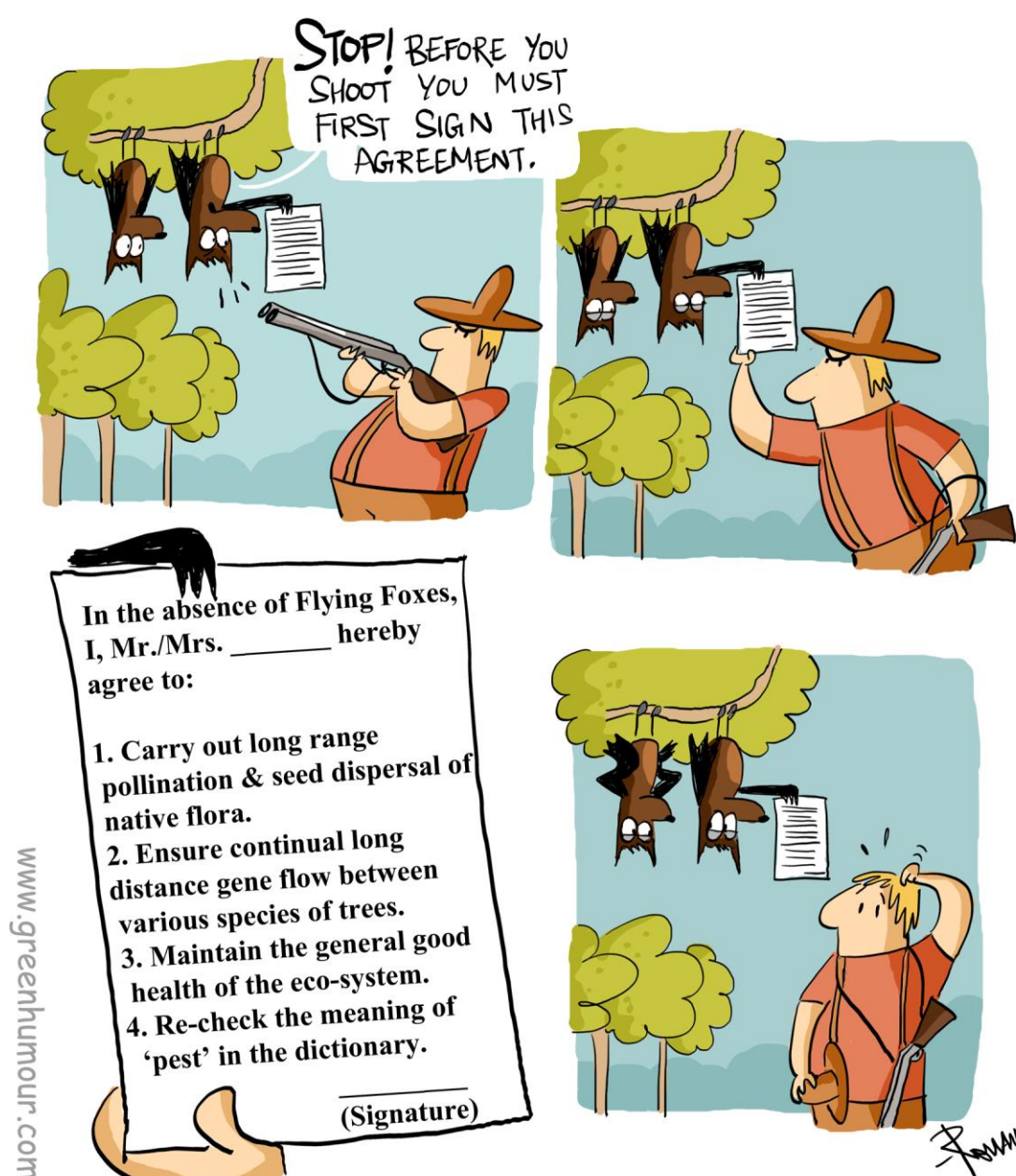


Image reproduced with permission © Rohan Chakravarty, [www.greenhumour.com](http://www.greenhumour.com).

## Camp Management in Sydney: Legislation, Policy and Licensing

### **David Trewin, Regional Manager Greater Sydney, OEH**

*David is the Regional Manager Great Sydney in OEH's Regional Operations Group. The Greater Sydney team is responsible for: land use planning advice; ecosystems and threatened species; water, flood and coast issues; community engagement; and compliance and regulation of threatened species and Aboriginal Cultural Heritage matters.*

David covered the relevant NSW legislation, the [2015 NSW state policy](#) and Level 1, 2 and 3 actions; [Section 91 licensing processes](#); and discussed how State and Local Government are working together in site-based and regional approaches.

[Level 1 Actions: Routine camp management actions](#)

[Level 2: Creation of buffers](#)

[Level 3: Camp disturbance or dispersal](#)

## Tools for Management

### **Mike Roache, Principal Project Officer – Threatened Species, OEH**

*Mike is an ecologist specialising in threatened species. He manages threatened species issues for OEH, including flying-foxes, koalas and Bell Miner Associated Dieback. He has worked for local government, ecological consultants and non-profit organisations.*

Mike's presentation on the management tools available to flying-fox camp managers covered the new expanded [Camp Management Plan](#) template, the recently announced NSW Government [Flying-Fox Grants Program](#), the Flying Fox Land Managers' Network, and a brief update on outcomes from the Hunter Regional forum held in May 2016. For more information, or to join the Land Managers Network, contact Mike at [Mike.Roache@environment.nsw.gov.au](mailto:Mike.Roache@environment.nsw.gov.au).

## Case Study: Cannes Reserve, Pittwater

### **Matt Hansen, Principal Officer Natural Resource Management, Northern Beaches Council**

*Matt joined Pittwater Council (now Northern Beaches Council) in July 2007 and has been involved in biodiversity assessment for development applications, preparation of Plans of Management, and since 2012 has supervised the bushland management program within council. Has been involved in the management of the Cannes Reserve flying-fox issue since the beginning of 2014.*

Matt gave an overview of the Cannes Reserve flying-fox camp including its history, management decisions and actions including dispersal, plans for 2016 and a summary of lessons learnt and recommendations for future flying-fox management.

## Case Study: Kareela Camp, Sutherland

### **Beth Noel, Environmental Project Officer – Ecologist, Sutherland Council**

*Beth is Council's Environmental Project Officer – Ecologist. She has spent 10 years in local government and over 15 years in the environmental industry. Beth has been managing the Kareela Flying-fox camp for over four years and is responsible for monitoring and management of fauna for the Sutherland Shire.*

Beth gave an introduction to Kareela Camp in the Sutherland Shire and presented actions and costs of actions conducted to date including dispersal, a summary of what worked and what didn't and the lessons learned whilst managing the camp.

## Flying Fox Engage Tool and Resident Impact Mitigation Options

### **Lorraine Oliver, South East Regional Operations Group, OEH and Courtney Fink-Downes, Eurobodalla Shire Council**

*Lorraine is the Team Leader Community Engagement South East Region for OEH. Lorraine has been working with the Eurobodalla Shire Council and Batemans Bay community on a flying-fox camp in Batemans Bay since early 2015.*

*Courtney is the Natural Resource Supervisor at Eurobodalla Shire Council. She has been working with the Batemans Bay community addressing issues associated with the flying-fox camp in Water Gardens, Batemans Bay since 2013.*

Courtney and Lorraine spoke on:

- The methods used to work with the Water Gardens community to develop a flying-fox camp management plan including using an online decision support tool called [Flying Fox Engage](#) to gather data about what the residents wanted from management options
- The actions developed and implemented by Eurobodalla Council to relieve the impacts of the flying-fox camp on the residents
- Some lessons from having a flying-fox camp expand rapidly and unexpectedly

## Case Study: Wolli Creek Camp, Rockdale

### **Alexandra Vandine, Assistant Coordinator Environmental Strategy, Rockdale Council**

*Alexandra has spent 13 years in local government working on a range of environmental projects, including plans to protect threatened species and endangered ecological communities, integrating biodiversity focused planning controls, assessing biodiversity impacts of DAs and Councils work's and community engagement (including citizen science) projects.*

Alexandra described the process, successes and lessons learnt of developing and implementing a management plan for the Wolli Creek flying-fox camp in collaboration with other state agencies and a key community advocacy group.



## Workshop Summaries

### Workshop 1: Needs and Gaps Analysis

Workshop attendees were asked to consider stakeholder group needs that are not currently available, or that would add value to existing tools, policies, processes or information. Some key messages from presentations and panel question sessions are also captured here.

#### Stakeholder Group: Land Management Staff

#### Workshop 1

##### Topic 1: Science and Other Knowledge and Monitoring

- **A central portal or database for sharing information and knowledge**, e.g.
  - Research outcomes
  - Spatial databases
  - Engagement strategies
  - Examples of other species conflict management e.g. seagulls, terns, dogs.
  - Case studies

*N.B. Information on flying-fox ecology and management is available on the Commonwealth Government website:*

*<https://www.environment.gov.au/biodiversity/threatened/species/flying-fox-law>*

*NSW OEH website: <http://www.environment.nsw.gov.au/animals/flyingfoxes.htm>*

*OEH have also established a Flying-Fox Managers Network to facilitate the sharing of knowledge, experience, ideas, research, skills and lessons learnt in managing flying-fox camps – contact [Mike Roache](#), OEH, to join.*

- **Information presented in short videos and graphics**, e.g.
  - General introduction
  - Specific topics
  - Distribution maps
- **Interactive map** showing camp fluctuations with ability to show real life data and flowering events.

*N.B. the Commonwealth Government has developed an interactive flying-fox web viewer to visually present camp census data collected by the National Flying-fox Monitoring Programme. Known camps and the numbers of each species from November 2012 to the present are displayed.*

*<https://www.environment.gov.au/biodiversity/threatened/species/flying-fox-monitoring>*

- **A forum for discussion**

*N.B. OEH have established a Flying-Fox Managers Network to facilitate the sharing of knowledge, experience, ideas, research, skills and lessons learnt in managing flying-fox camps – contact [Mike Roache](#), OEH, to join.*
- **Research need: how to manage and reduce the impact of smell?**

*The NSW Environment Protection Agency focuses on reducing an unpleasant odour at its source; it is difficult to find any research on how to manage odours without reducing the source of those odours. Any information on this would be welcomed.*

**Other suggestions:**

- Need to know: when are the bats coming?
- Need to know: where are they going to go?
- An 'Emergency Response' information kit.
- NSW Health information on [Hendra Virus](#) and [Australian Bat Lyssavirus](#)
- Funding sources – knowledge of what is available.
- Guides to land management.
- Information from other states.
- Regional mapping of foraging habitat and roosting sites.
- An [Atlas of Living Australia](#) repository for recording and viewing flowering events, camp changes etc.

**Topic 2: Policy, Strategy and Management Options and Tools**

- A toolkit of conflict mitigation tools for affected residents, e.g. subsidised car covers, washing lines covers, air conditioning units, double-glazed windows, cleaning units etc.
- Ask residents questions about what would lessen the noise, smell and mess impacts of flying-foxes rather than what management outcome they would like to see.
- Access to ABLV vaccinations for staff and volunteers.
- Ensure state agencies (who own or manage large areas of land) have environmental protection as a core purpose.
- Support to work through the OEH Camp Management Plan Template.
- Support to build capacity within councils.
- Support for staff and volunteers to collect ongoing data.

**Topic 3: Consultation, Collaboration and Communications Needs**

- Conflict resolution training or access to conflict resolution / negotiation experts.
- Need to be able to anticipate issues.
- Engage with potentially affected residents early – before the situation becomes emotionally charged.
- A community engagement plan or strategy.
- A media engagement strategy.
- Educational resources (national and state).

**Topic 1: Science and Other Knowledge and Monitoring**

- Councillors need to be given a **business case** presenting long-term costs and implications of various management actions.
- Training councillors in ecology, habitat, movements and environmental services provided by flying-foxes. Get experts in.
- Knowledge of management options other than dispersal.
- State and Commonwealth elected representatives should also be engaged and educated.

**Topic 2: Policy, Strategy and Management Options and Tools**

- Opportunities to learn from other councils, e.g. fora, presentations, case studies, regional camp tour.

**Topic 3: Consultation, Collaboration and Communications Needs**

- Some residents like flying-foxes, but these aren't the ones who call councillors to complain. Their views need to be represented too.
- Early engagement and education with councillors – brief them before the situation reaches a crisis. Identify potential issues and equip councillors with the information to respond to their residents.

**Example:**

The Local Government Association of Queensland (LGAQ) held well-received forums for elected members and staff in 2013 and 2015, covering the pros, cons, costs and risks of different types of management actions.

LGAQ have also produced a '*Guide to Best Practice Flying-Fox Management in Queensland*' specifically for elected representatives. For a copy contact Dorean Erhart, Principal Advisor - Natural Assets, NRM & Climate Change at LGAQ on 07 3000 2202 or [Dorean\\_Erhart@lgaq.qsn.au](mailto:Dorean_Erhart@lgaq.qsn.au).



**Topic 1: Science and Other Knowledge and Monitoring**

- Knowledge of flying-fox movements, threats and role as pollinators and ecosystem engineers.
- Community citizen science projects e.g. bat counts.
- Realities of health risks.

**Topic 2: Policy, Strategy and Management Options and Tools**

*N.B. This topic was not addressed in the work shop session.*

**Topic 3: Consultation, Collaboration and Communications Needs**

- Communicate about *all* actions undertaken by a council, including process of community engagement, management plan preparation and impact mitigation options such as car and washing line covers, cleaning tools etc. Don't shy away from "more media" around positive activity – better to lessen the opportunity to complain that "nothing has been done".

## Workshop 2: A Regional Approach

Workshop attendees were asked to consider the following questions regarding a regional approach to flying-fox management, bearing in mind the twin goals of flying-fox conservation and human/flying-fox conflict reduction or mitigation.

### Goals:

- flying-fox conservation and
- human/flying-fox conflict reduction or mitigation

Workshop 2

### **1. How would a regional approach to flying-fox management add value to existing state policy and management / engagement tools available to land managers?**

- Facilitating additional management options not currently available to some managers, e.g. habitat restoration or re-creation in low-conflict zones.
- It may be easier to get support from council for certain management actions when working in partnership with other councils and land managers.
- Combining resources, reducing costs of individual land managers.
- Facilitate and formalise networking and sharing of:
  - Experiences, e.g. management actions successes and failures
  - Information / intelligence, e.g. flying-fox movements, camp numbers, arrivals and departures.

### **2. What would you like a regional approach to achieve?**

- Consideration of potential impacts of a management action in one Local Government Area on neighbouring LGAs.
- Identify low-conflict or conflict-free sites where flying-fox habitat can be maintained and increased, potentially funded collaboratively by multiple partners.
- Identify areas of potential future conflict and prepare with early engagement.
- Regional mapping of existing camps, potential roost habitat, foraging habitat and habitat improvement sites to inform management plans and plan approvals.
- A more uniform, coordinated and pro-active (less reactive) approach to flying-fox management across the region.
- Consistent messaging to the community from councils, state agencies and other land managers – a 'united front'.
- Provide a support network for stressed land management staff.
- Remove or reduce the influence of local politics.

### **3. What would a regional approach look like, or how would it operate? E.g. is it a regional strategy, an agreement between all land managers in the region, a framework for working together, a state policy document, other?**

Suggestions included:

- A document outlining key roles and responsibilities.
- [Service level agreements](#) between camp managers in the region.
- A framework for land managers to work together and make decisions relating to flying-fox management actions.
- An agreement between land managers to communicate and consider potential impacts of management activities at one site on neighbouring land managers.
- A group facilitated by a state or federal government agency to provide the overarching management strategy with local implementation by councils and other land managers.
- Group facilitated by a Regional Organisation of Councils appropriate to the region.
- Regular fora or meetings for updates and information exchange.

#### 4. How would a 'region' be defined?

Suggestions included:

- Biophysical boundaries, e.g. IBRA regions, subregions or catchments.
- Administrative boundaries, e.g. a cluster of local government areas (LGAs).
- Practical considerations, e.g. human travelling distances.
- Greater Sydney Region – from Northern Beaches to Blue Mountains and Wollondilly.

#### 5. What are some of the main roles and responsibilities of the various stakeholders in taking a regional approach to flying-fox management and facilitation?

##### a) State Government

- Regulatory role responsible for enforcement of *Threatened Species Conservation Act 1995* (or *Biodiversity Conservation Bill 2016*) and issue of [Section 91 licenses](#) to harm or pick a threatened species, population or ecological community or damage habitat
- Provide state-wide [Flying-fox Camp Management Policy](#) and advice
- Provide [Camp Management Plan Template](#)
- Community education
- Facilitate knowledge-sharing e.g. via Flying-fox Land Managers Network
- [Funding programs](#)

##### b) Local government and other managers of public lands

- Management of individual camps and/or foraging habitat
- Community education and engagement
- Share information and experiences with other councils and land managers

##### c) Regional Organisations of Councils

- LGNSW are facilitating the NSW State Government [Flying-fox Grants Program](#)
- Support state government facilitation
- Facilitate knowledge-sharing

##### d) Commonwealth Government

- Regulatory role responsible for enforcement of *Environment Protection and Biodiversity Conservation Act 1999*
- Provide national information and advice
- Co-ordinate [National Flying-Fox Monitoring Program](#) and [Interactive Map Viewer](#)

##### e) Local Land Services

- Site enhancement
- Funding programs?

##### f) Researchers / academics

- Research and information sharing

##### g) Local communities

- Contribute to management planning and solutions

## Examples of Regional Approaches

### Example 1: Queensland

In Queensland, Flying-Fox Regional Coordinating Groups were initiated the QLD Department of Environment and Heritage Protection, who organize regular group meetings but otherwise incur no additional financial burden. The groups formed by self-determined boundaries largely chosen for practical reasons, i.e. within 3-4 hours' drive. The group members are largely local government officers responsible for flying-fox management. According to the LGAQ the groups are working well; the members consult with each other before undertaking management actions such as dispersals to minimise likely impact on neighbouring regions.

For more information contact Dorean Erhart, Principal Advisor - Natural Assets, NRM & Climate Change at LGAQ on 07 3000 2202 or [Dorean.Erhart@lgaq.asn.au](mailto:Dorean.Erhart@lgaq.asn.au).

### Example 2: Hunter Region

The Hunter Councils group have accepted an invitation to be part of a Regional Flying Fox Working Group for the Hunter and Central Coast, convened by OEH. Along with local councils and other key public land managers and stakeholders, this group will develop a Regional Flying Fox Management Strategy to protect flying foxes, conserve and restore habitat and manage community – flying-fox conflict by managing impacts and increasing understanding and knowledge within the broader community.

The councils in the Hunter / Central Coast / Mid Coast region are also partnering on a regional application to develop camp management plans for major flying fox/human conflict camps; a regional flying fox education program; and are partners in a National ARC grant looking into flying fox habitat and social issues of flying fox / human conflict. The councils are actively working together as there is practical and political understanding that the animals move widely within the region, and the actions of any one council will likely impact heavily on the others. For more information contact Bradley Nolan, Director Environment Division at Hunter Councils on (02) 4978 4024 or [envirodirector@huntercouncils.com.au](mailto:envirodirector@huntercouncils.com.au).

## Workshop Evaluation

To assess the success of the Sydney Regional Flying-fox Forum against its objectives a post-event online survey was conducted, with a thirty-three percent completion rate. 99% of respondents rated the event as good, very good or excellent, and 69% were very satisfied with the information presented.



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