



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.
councils **caring for the coastal environment**
Level 9, Town Hall House, 456 Kent Street
GPO Box 1591, SYDNEY NSW 2001

Document No:

058-16KH

Event Date:

7 June 2016

Copyright:

© Sydney Coastal Councils Group 2016

All rights reserved.

The Sydney Coastal Councils Group is pleased to allow the reproduction of material from this publication on the condition that appropriate acknowledgement of the source, publisher and authorship is made.

Cover image © Jacob Sife.

Disclaimer:

This document has been prepared using the best information available at the time of publication. No information contained in this document should be considered legal advice.

Contents

Background.....	1
Objectives.....	1
Attendees.....	1
Summary.....	2
Agenda.....	4
Summary of Presentations.....	6
Workshop Summaries.....	10
Workshop 1: Needs and Gaps Analysis.....	10
Workshop 2: A Regional Approach.....	14
Examples of Regional Approaches.....	16
Workshop Evaluation.....	16
Appendix A: List of Attendees.....	17
Appendix B: Presentations.....	19

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
Speakers	Participants	SCCG Member Councils	Other councils	Other organisations

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 shortages¹.
- 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 resolved².
- 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 emerging³. 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.

¹ 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.

² 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-subs/flyingfoxsub-jenny-beatson-part2.pdf>

³ 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	
		Administrative matters
9.00	0:30	<p>1.1 Opening and welcome <i>Geoff Withycombe, Executive Officer, SCCG</i></p> <p>1.2 Background and context <i>Katherine Howard, Coastal Projects Officer, SCCG</i></p>
		Presentations & Workshops
		Science and Monitoring
9.30	0:35	<p>Introduction to flying-foxes and updates on recent research <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"> • Introduction to flying foxes: ecology, habits, movements and ecological significance • Review of Flying-fox Dispersals • Habitat mapping and restoration for threatened pollinators
10.05	0:25	<p>Flying-foxes in town <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"> • National monitoring program • Status review of grey-headed flying-fox 2015 • Why are flying-foxes becoming so urbanised?
10.30	0:15	<p>Royal Botanic Gardens Dispersal and Monitoring Program <i>Dr John Martin, Wildlife Ecologist, Royal Botanic Gardens Sydney</i></p>
10.45	0:15	<p>Science and Monitoring Panel Q&A <i>Dr Eby, Dr Martin, Dr McKeown</i></p>
11.00	0:20	MORNING TEA

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

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 described⁴. 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 status⁵.

⁴ 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-subs/flyingfoxsub-jenny-beatson-part2.pdf>

⁵ 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.

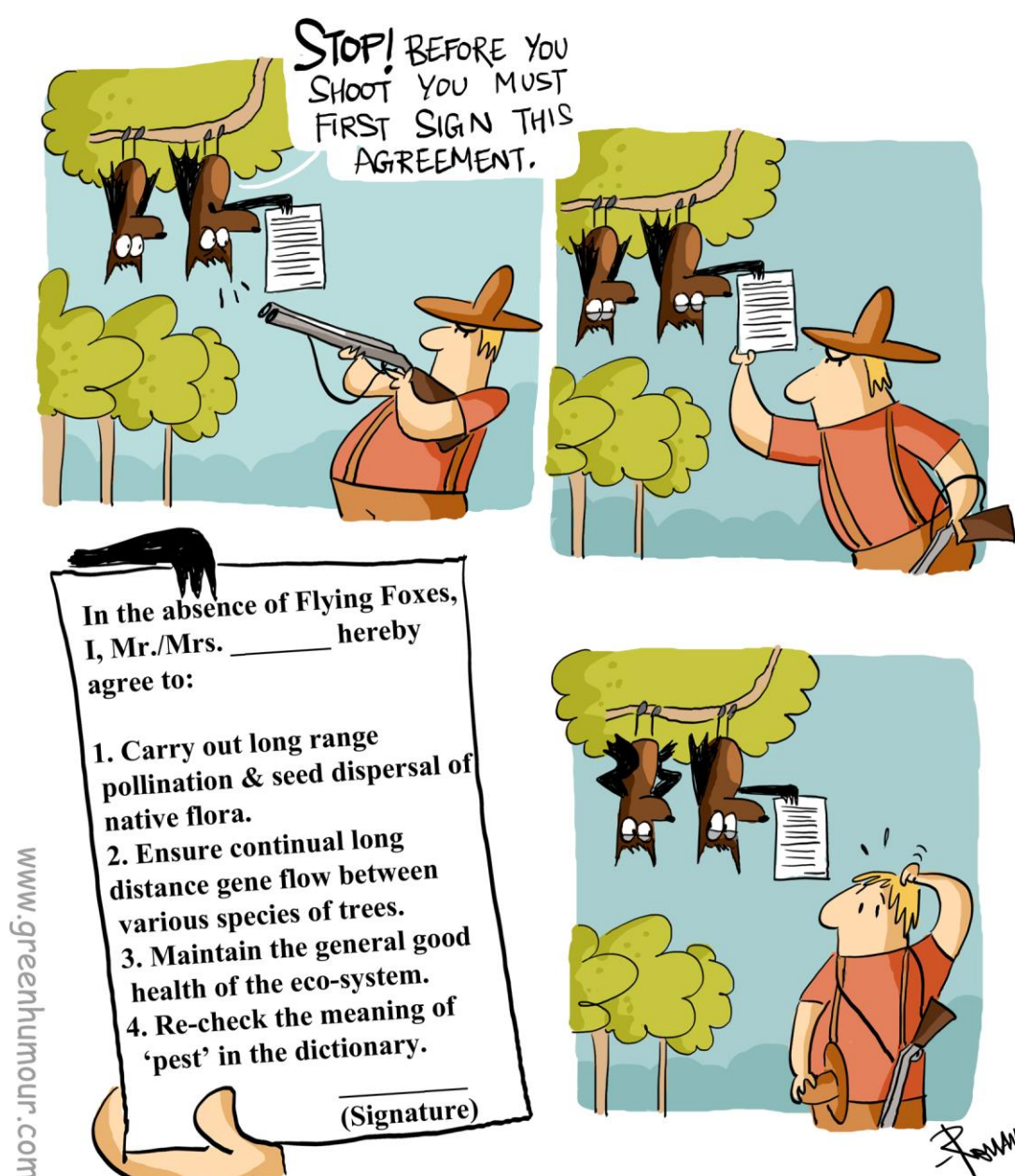


Image reproduced with permission © Rohan Chakravarty, www.greenhumour.com.

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.

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.

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.

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.

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.

Appendix A: List of Attendees

First Name	Surname	Position	Agency / Organisation	Email
Belinda	Atkins	Manager Projects and Programs	Sydney Coastal Councils Group	belinda@sydneycoastalcouncils.com.au
Damon	Bassett	Acting Team Leader - Biodiversity	Inner West Council (Marrickville)	damon.bassett@marrickville.nsw.gov.au
Jules	Bellamy	Environmental Educator	Coastal Environment Centre / Northern Beaches Council (Pittwater)	jules_bellamy@pittwater.nsw.gov.au
Sarah	Burke	Team Leader, Compliance and Regulation	Greater Sydney Regional Operations Group, Office of Environment and Heritage	Sarah.Burke@environment.nsw.gov.au
Jodie	Cooper	Environment Officer	Shellharbour City Council	jodie.cooper@shellharbour.nsw.gov.au
Nick	Corkish		Office of Environment and Heritage	nick.corkish@environment.nsw.gov.au
Joel	Daniels	Bushland & Weed Management Officer	Liverpool City Council	j.daniels@liverpool.nsw.gov.au
Gareth	Debney	Bushland Management Coordinator	North Sydney Council	Gareth.Debney@northsydney.nsw.gov.au
Luke	Durrington		Transport NSW - Sydney Trains / Wolli Creek Flying Fox Management Group	LUKE.DURRINGTON@transport.nsw.gov.au
Peggy	Eby		UNSW	peby@ozemail.com.au
Courtney	Fink-Downes	Natural Resources Officer	Eurobodalla Shire Council	Courtney.Fink@esc.nsw.gov.au
Judy	Finlason	Volunteer	Wolli Creek Preservation Society	judy@imageoz.net
Ray	Giddins		Greater Sydney Region, Office of Environment and Heritage	Ray.Giddins@environment.nsw.gov.au
Amara	Glynn	Environment Officer	Botanic Gardens & Centennial Parklands	amara.glynn@cp.nsw.gov.au
Nell	Graham	Team Leader Environmental Strategy	City of Canterbury / Wolli Creek Flying Fox Management Group	Nellg@canterbury.nsw.gov.au
Matthew	Hansen	Principal Officer Natural Environment & Education	Northern Beaches Council (Pittwater)	Matthew_Hansen@pittwater.nsw.gov.au
Katherine	Howard	Coastal Projects Officer	Sydney Coastal Councils Group	katherine@sydneycoastalcouncils.com.au
Kristie	King		Northern Beaches Council (Manly)	Kristie.King@manly.nsw.gov.au
Chris	Kraus		Northern Beaches Council (Manly)	Chris.kraus@manly.nsw.gov.au

First Name	Surname	Position	Agency / Organisation	Email
Deb	Little	Volunteer (President, and Bat Co-ordinator)	Wolli Creek Preservation Society / Wolli Creek Flying Fox Management Group	bats@wollicreek.org.au
David	Lowery	CEC Education Coordinator	Northern Beaches Council (Pittwater)	david_lowery@pittwater.nsw.gov.au
Uday	Mangalvedhekar	Park officer	Western Sydney Parklands	uday.mangalvedhekar@ppt.nsw.gov.au
Kirsty	McIntyre	Senior Policy Officer - Natural Resource Management	Local Government NSW	Kirsty.McIntyre@lgnsw.org.au
Adam	McKeown	Research Scientist	CSIRO	Adam.Mckeown@csiro.au
Rebecca	Mooy	Senior Land Services Officer (Cumberland Plain and Estuary)	Greater Sydney Local Land Services	rebecca.mooy@lls.nsw.gov.au
Beth	Noel	Environmental Project Officer - Ecologist	Sutherland Shire Council	bnoel@ssc.nsw.gov.au
Lorraine	Oliver	Team Leader, Community Engagement, South East Regional Operations Group	Office of Environment and Heritage	Lorraine.Oliver@environment.nsw.gov.au
Antonina	Pilat	Support Officer	Sydney Coastal Councils Group	antonina@sydneycoastalcouncils.com.au
Lyn	Raffan	Community Engagement Officer	Office of Environment and Heritage	lyn.raffan@environment.nsw.gov.au
Mike	Roache	Principal Project Officer - Threatened Species, Environmental Programs Branch	Office of Environment and Heritage	Mike.Roache@environment.nsw.gov.au
Andrew	Scott	Bushcare	North Sydney Council	Andrew.Scott@northsydney.nsw.gov.au
Mark	Shorter	Sustainability Coordinator	Eurobodalla Shire Council	Mark.Shorter@esc.nsw.gov.au
Jacob	Sife	Natural Areas Officer	Kuring-Gai Council	JSIFE@KMC.NSW.GOV.AU
Angela	Taylor	Senior Environmental Officer	Campbelltown City Council	Angela.Taylor@campbelltown.nsw.gov.au
David	Trewin	Regional Manager Greater Sydney	Greater Sydney Region, Office of Environment and Heritage	David.Trewin@environment.nsw.gov.au
Alexandra	Vandine	A/Coordinator Environmental Strategy	Rockdale Council	avandine@rockdale.nsw.gov.au
Narawan	Williams	Fauna ecologist	Contractor	narawanwilliams@gmail.com
Andrew	Williams	Environment Officer	Shellharbour City Council	andrew.williams@shellharbour.nsw.gov.au
Geoff	Withycombe	Executive Officer	Sydney Coastal Councils Group	geoff@sydneycoastalcouncils.com.au

Appendix B: Presentations

Attached as separate document.



Sydney Coastal Councils Group Inc.
councils **caring** for the coastal environment

Town Hall House, 456 Kent Street
GPO Box 1591, SYDNEY NSW 2001
t: +61 2 9246 7791 | **f:** +61 2 9265 9660
e: info@sydneycoastalcouncils.com.au