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Department for Environment
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FLYING-FOX
FORUM

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7th Annual National Flying-fox Forum

28-29 September 2022
Adelaide Zoo

PROGRAM



Plan your day from
Nature's Playground
— Allow 1.5 - 2 hours
— Allow 2 - 2.5 hours

Q7	African Wild Dog	L12, D8	Mara
M13	Aldabra Tortoise	G7, Q9	Meerkat
E12	Alligator	K12	Orange-bellied Parrot
P8	Baboon	P4	Orangutan
Q9	Binturong	E12, G6	Otter
E8	Brazilian Tapir	J8	Pelican
L9	Cassowary	U13	Penguin
E13	Capybara	M6	Pheasant
Q10	Chameleon	H8	Palm Cockatoo
M7	Dusky Langur	Z15	Quokka
G9	Emu	I10	Red Panda
L3	Fennec Fox	R9	Rosenberg's Monitor
M9	Flamingo	Q10	Sea Horse
B10	Frogs	S9	Sealion
I10	Giant Panda	K3	Serval
M13	Giant Tortoise	N7, I3	Siamang
F7	Giraffe	H7	South American Parrots
E14	Hippopotamus	L3	South American Coati
E10	Kangaroo	Q10	Splendid Tree Frog
H8	Koala	K7, L11	Squirrel Monkey
F5	Lemur	Q10	Stick Insect
K4	Lion	L6	Sun Bear
M6	Malayan Tapir	I6	Tamarin
P6	Mandrill	H9	Tasmanian Devil
		P3, M5	Tiger
		J4, J3	Tree Kangaroo
		D10, G9	Wallaby
		G5	Water Dragon
		P10	Westpac Envirodome
		N9	White-cheeked Gibbon
		G8, R10	Wombat

LOCATED IN SANCTUARY FUNCTION CENTRE
 2022 NATIONAL FLYING-FOX FORUM

FROME ROAD

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- A** Animal Adoption Nook
- Not recommended for wheelchairs/pushers/Kidz Kabz
- Baby Change
- Bus Stop
- Drink Fountain
- Animal Health Centre
- Education Centre
- Emergency Assembly Area
- Gift Shop
- Information
- Kiosk
- Lockers
- Membership Services
- Parent's Room
- Photo Experience
- Picnic Area
- Restaurant/Cafe
- Stairs
- Toilet
- Walkabout Tour Stop 1-6
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 Enjoy Monarto Zoo at half price with a Two Zoos Pass.
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Please do not feed the animals in the zoo as it will harm their health. The animal food in the Children's Zoo is for use in the Children's Zoo only. Reptile House, Nocturnal House, Westpac Envirodome, Native Animal Contact Area and Walkthrough aviaries open 10 am daily. Close at 4:30 pm weekdays and 4:45 pm weekends and public holidays.

**7th Annual National
Flying-Fox Forum**
28-29th September 2022



Location: The Sanctuary, Adelaide Zoo

Date: 28 September 2022

Time: 8.30am - 4.30pm (networking 4.30-5.30pm) ACST

WEDNESDAY 28TH SEPTEMBER 2022 THE SANCTUARY, ADELAIDE ZOO

8:30 – 9:00

REGISTRATION

SA TIME

SESSION 1

9:00 - 9:15

WELCOME TO COUNTRY

Corey Turner | Kurna man living on Kurna Yerta in Adelaide

9:15 - 9:25

CONFERENCE OPEN

Felicity-ann Lewis | Deputy Chairperson Green Adelaide | Government of South Australia

9:25 - 9:45

**USING EMERGING TECHNOLOGIES TO INFORM THE CONSERVATION
MANAGEMENT OF THE GREY-HEADED FLYING-FOX (Keynote)**

Justin A. Welbergen¹, Jessica Meade¹, Eliane McCarthy¹, Samantha Yabsley¹, Sienna Grady¹
& John Martin^{1,2}

¹Hawkesbury Institute for the Environment, Western Sydney University; ²Institute of Science and Learning, Taronga Conservation Society Australia

9:45 - 10:00

SOUTH AUSTRALIA UPDATE

Jason van Weenen | Species Ecologist | Government of South Australia

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10:00-10:15	VICTORIA UPDATE Rodney Vile and Angus Williamson Wildlife Emergencies Biodiversity Division Department of Environment, Land, Water and Planning
10:15-10:30	QUESTIONS AND DISCUSSION
10:30-11:00	MORNING TEA
SA TIME	SESSION 2
11:00-11:15	NEW SOUTH WALES UPDATE <u>Matthew Mo</u> and Josh Gregory Biodiversity and Conservation NSW Department of Planning and Environment
11:15-11:30	AUSTRALIAN CAPITAL TERRITORY UPDATE Clare Wynter and Stephen Bartos ACT Wildlife
11:30-11:45	QUEENSLAND UPDATE Lindsay Delzoppo Director Northern Wildlife Operations Department of Environment and Science
11:45-12:00	AUSTRALIAN GOVERNMENT UPDATE Tim McGrath Threatened Species Department of Climate Change, Energy, the Environment and Water
12:00-12:15	AN UPDATE ON THE SPECTACLED FLYING-FOX RECOVERY AND THE RECOVERY TEAM Sera Steves ¹ and Maree Treadwell Kerr ² The Spectacled Flying-fox Recovery Team ¹ secretary.batsoc@gmail.com ; ² president@batsoc.org.au
12:15-12:30	QUESTIONS AND DISCUSSION
12:30-13:30	LUNCH

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SA TIME	SESSION 3
13:30-13:45	<p>USING DNA SEQUENCING TO DETERMINE DIET OF GREY-HEADED FLYING-FOXES ACROSS THE SPECIES' RANGE</p> <p><u>Adam McKeown</u>¹, Karen Bell², Chris Pavey³, Kathryn Batchelor⁴ & Eric Vanderduys⁵ ¹CSIRO Land & Water, Waite, SA; ²CSIRO Land & Water, Floreat, WA; ³School of Biological Sciences, The University of Western Australia; ⁴CSIRO Land & Water, Berrimah, NT4 CSIRO Land & Water, Floreat, WA; ⁵CSIRO Land & Water, Dutton Park, Qld</p>
13:45-14:00	<p>CORONAVIRUSES UPDATE</p> <p>Dr. Alison Peel ARC Discovery Early Career Researcher Award (DECRA) Research Fellow Griffith University</p>
14:00-14:15	<p>DON'T BLAME BATS: PUBLIC MESSAGING ABOUT BATS & HUMAN HEALTH</p> <p><u>Keren Cox-Witton</u>¹ Tania Bishop² Wayne Boardman³ Andrew Breed⁴ Tamsyn Hogarth⁵ Debra Lee⁶ Justin Welbergen⁷ ¹Wildlife Health Australia; ²Wildlife veterinarian; ³The University of Adelaide; ⁴Australian Government Department of Agriculture, Fisheries and Forestry; ⁵Wildlife Victoria; ⁶Workplace Health and Safety Queensland; ⁷Western Sydney University; Australasian Bat Society</p>
14:15-14:30	<p>AN ANALYSIS OF CUSTOMER REQUESTS AND EXISTING BUFFER DISTANCES: USE OF PLANNING TOOLS TO MINIMISE POTENTIAL ROOST IMPACTS</p> <p>Tyron de Kauwe Natural Areas Conservation Officer Sunshine Coast Regional Council</p>
14:30-14:45	<p>THE IMPACTS OF THE FEBRUARY 2022 FLOODS ON THE FLYING-FOX ROOSTS THROUGHOUT THE MORETON BAY REGION</p> <p>Jess Goring Team Leader Environment Moreton Bay Regional Council</p>
14:45-15:00	<p>QUESTIONS AND DISCUSSION</p>
15:00-15:20	<p>AFTERNOON TEA</p>
SA TIME	SESSION 4
15:20-15:30	<p>AUSTRALASIAN BAT SOCIETY FLYING-FOX UPDATE</p> <p>Maree-Treadwell Kerr, <u>Jess Bracks</u>, Dr John Martin, Sarah Curran ABS Flying-fox Expert Group Co-conveners</p>
15:30-15:45	<p>A REVIEW OF CANOPY-MOUNTED SPRINKLER SYSTEMS AS A FLYING-FOX DETERRENT: 2015-2022</p> <p>Tyron de Kauwe Natural Areas Conservation Officer Sunshine Coast Regional Council</p>

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15:45-16:00	THE RESILIENCE OF FLYING-FOXES IN RELATION TO CONSTRUCTION WORKS Jess Gorring Team Leader Environment Moreton Bay Regional Council
16:00-16:15	7 THINGS TO CONSIDER WHEN TAKING WILDLIFE PHOTOS Doug Gimesy Conservation and Wildlife Photojournalist
16:15-16:25	QUESTIONS AND DISCUSSION
16:25 - 16:35	LUCKY DOOR PRIZES AND WRAP UP
16:35 - 17:30	NETWORKING

THURSDAY 29TH SEPTEMBER 2022 SANTOS CONSERVATION CENTRE, ADELAIDE ZOO

10:00-12:00	WORKSHOPS Reflection since the first 2016 Forum – camp locations and management framework Review and updating previous Forum items: <ul style="list-style-type: none"> - National Strategic Vision - Research Gap Analysis
12:00-15:30	LUNCH IN THE ZOO SITE VISIT <ul style="list-style-type: none"> - Site visit to the Adelaide release facility within Botanic Park - Inspection of the microchip scanner technology to monitor bat visitation to the aviary - Field inspection of sprinklers being trialled to cool the camp and traverse part of the camp footprint experienced during heat stress conditions - Inspection of camp management challenges and revegetation activities undertaken to date
15:30-16:30	End of conference drinks at the National Wine Centre of Australia .

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SPEAKERS

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Corey Turner
Welcome to Country

Corey is a Kaurna man living on Kaurna Yerta in Adelaide. His passion for his culture is the building block for Southern Cultural Immersion, which came to life in 2019. Building on his successful career spanning over 30 years within the field of Aboriginal community engagement and affairs, Corey looks forward to building strong connections with the community to foster meaningful and respectful reconciliation.

Dr Felicity-ann is passionate about creating a better, healthier, more inclusive Australia and was the 2014 SA Australian of the Year. She served as Mayor of the City of Marion for 14 years, and concluded her extensive local government experience in 2014 as National President of the Australian Local Government Association. With a Doctorate of Education, Felicity-ann was an academic at Flinders University for 20 years. She is the chairperson for the South Australian Wildlife and Habitat Bushfire Recovery Taskforce, a former Presiding Member of the Adelaide and Mount Lofty Ranges NRM Board, a current board member for Green Adelaide, and also currently sits on the Australian Press Council.



Dr Felicity-Ann
Deputy Chairperson of the Green
Adelaide Board



Dr. Justin Welbergen
Associate Professor |
Western Sydney University

Justin Welbergen is an Associate Professor at the Hawkesbury Institute for the Environment (Western Sydney University), where he leads the “Lab of Animal Ecology”. He is also President of the Australasian Bat Society, a nonprofit organisation whose aim is to promote the conservation and study of bats in Australasia. In addition, he is co-founder of ‘BATsLAB’, a primary academic destination for bat research in Australia. Justin’s research covers a range of subjects in whole-organism biology, but focuses on the evolutionary ecology of bats and birds. He has parallel interests in conservation and climate change biology, and particularly in the areas of endangered species biology, human-wildlife conflict, extreme events, and conservation planning. Justin and his students have worked on flying-foxes for over 20 years, starting with his study on the social organisation of the grey-headed flying-fox for his PhD from the University of Cambridge. Further info: <https://www.animalecologylab.org/justin-welbergen.html>

Jason is an ecologist with the South Australian Department for Environment and Water and has been working with threatened species conservation projects and native species management for 24 years. He now sits within the ecology team of the Green Adelaide Landscapes Region and has been involved with flying foxes since their arrival in South Australia in 2010. In his personal time, Jason is committed to the restoration of bushland areas in his care, volunteering in wildlife conservation projects and leading biodiversity conservation activities on one of SA’s offshore islands.



Jason Van Weenen
Ecologist - Green Adelaide
at Department for Environment
and Water



Rodney Vile
Principal Officer Wildlife Emergencies |
Department of Environment, Land,
Water and Planning

Rodney is the Principal Officer Wildlife Emergencies for the Victorian Department of Environment, Land Water and Planning (DELWP). In this role he develops policy, response plans and training programs for the declared wildlife emergencies within Victoria and provides strategic leadership and advice to the State during incidents. Rodney represents DELWP on Victorian and national committees to ensure that wildlife emergency response plans are developed in line with industry best practice and that synergies between response agencies are developed. He has undertaken a range of roles that has given him experience in extension, regulation and enforcement, vocational training and development, emergency management and program and project management at senior levels. The development of response plans and training programs is a key strength.

Angus is a Project Officer for Regulatory Strategy and Design with the Department of Environment, Land, Water, and Planning. Over the past 9 years, his role has encompassed working on a range of projects, gaining significant experience in wildlife management and biodiversity regulation. This work has also led him to take an interest in the basis of effective regulation and the implementation of policy decisions. His work has involved a wide range of issues from across Victoria, both within wildlife management and threatened species management



Angus Williamson
Project Officer, Regulatory
Strategy and Design, Department
of Environment, Land, Water &
Planning





Matthew Mo

Senior Project Officer - Threatened Species Issues Management, Department of Planning, Industry and Environment

Matthew is a Senior Project Officer working for Saving our Species, the NSW Government's flagship program for threatened species. His current role involves convening the NSW Flying-fox Consultative Committee and the NSW Flying-fox Land Managers' Network, as well as representation on a number of working groups. Matthew has led key flying-fox projects including policy work on flying-fox camp management, recent rounds of the Flying-fox Grants Program, support initiatives for wildlife carers and the phasing out of flying-fox shooting in NSW. He's currently leading a flying-fox stream for the Australian Government's bushfire recovery funding. He enjoys collaboration and has recently worked with local councils to develop flying-fox camp management case studies, and collaborated with wildlife carers, land managers and scientists to estimate flying-fox mortalities during the 2019-20 extreme heat and pup abandonment events. His work has been published in Australian Zoologist, Pacific Conservation Biology, Australian Mammalogy and Human Dimensions of Wildlife.

Clare Wynter and Stephen Bartos are volunteers with ACT wildlife. They have experience with care, rescue and transport for a wide range of animals. They have looked after numerous injured or orphaned flying foxes, both pups and adults, in the summer months. They care for other animals at different times (it's amazing how well an outdoor aviary for flying foxes can be converted for housing barn owls in winter!). Both are former public servants; Stephen still works in the NSW public service, Clare is retired and has much more time to devote to wildlife rescue.



Clare Wynter & Stephen Bartos
ACT Wildlife



Lindsay Delzoppo

Director - Wildlife Northern Operations | Department of Environment and Science

Lindsay is the Director of Northern Wildlife Operations, where he is responsible for: public and stakeholder engagement, delivery of cassowary, crocodile and flying-fox management programs, development of wildlife management policies such as flying-fox codes of practice and roost management guidelines, and investigations and compliance under Queensland's Nature Conservation laws. His previous roles include Director of Environmental Impact Assessment (DEH), Director of Regional Service Delivery (DERM), Director of Sustainable Industries (Environmental Protection Agency), and Regional Director for the far northern region of Queensland (QPWS).

Tim has been working for the Australian Government for the last 10 years in the Threatened Species section. Prior to that, he worked privately as a consultant ecologist in Queensland. His role with the Commonwealth is diverse but relates largely to threatened species listing assessments and conservation planning, particularly for reptiles. Other responsibilities include supporting regulatory areas of the Department with threatened species advice, engaging with traditional owners on the conservation of culturally important species, educating the agricultural sector on its responsibilities to threatened species under national environmental law and managing some responsibilities for nationally listed flying-foxes.



Tim McGrath
Department of Climate Change, Energy, the Environment and Water





Sera Steves

The Spectacled Flying-fox
Recovery Team

Sera holds a degree in Biology and Psychology with an Ethology focus and is currently working on her masters in Zoology and Ecology including research on crocodiles and blossom-bats. Sera has been in the zoo industry for 12 years working in both Australia and the United States as a zookeeper, animal trainer and wildlife presenter. Her main focus is birds and reptiles, but bats have been an interest of hers since she was a child. Sera is promoting bats and tourism using a model developed by Bat Conservation International in her home state of Texas.

Maree has a Masters of Wildlife Management and is currently undertaking a higher degree examining societal values for flying foxes by assessing impact of education/interpretation programs, including tourism potential, in changing attitudes toward flying-foxes. She is a joint convener of the Australasian Bat Society's (ABS) Flying-fox Expert Group and created and coordinates the annual ABS Australasian Bat Night program, including coordinating the Cairns Bat Festival since 2015. Maree has presented to national conferences of Wildlife Tourism Australia, Australasian Wildlife Management Society, Australasian Bat Society, and Interpretation Australia on the subjects of bat tourism, interpretation and flying-fox management.



Maree Treadwell-Kerr

The Spectacled Flying-fox
Recovery Team



Adam McKeown

Research Officer | CSIRO

Adam McKeown is an ecologist working for CSIRO on a range of ecological and transport related projects. He has worked on flying-fox population and movement ecology questions on all Australian species for 20 years.

Alison is a DECRA Research Fellow at the Centre for Planetary Health and Food Security at Griffith University in Brisbane, Australia. She trained as a wildlife veterinarian in Sydney and London, but it was her PhD at the University of Cambridge which introduced her to the world of bats. She is now working on a large project across 5 continents that aims to understand the root drivers of bat viral dynamics and ways in which we can pre-empt and prevent spillover. She mostly focuses on ecological drivers of viral community dynamics of Hendra virus and other bat paramyxoviruses in Australian flying foxes, but has also recently branched out in attempt to fill the significant gaps in knowledge on coronaviruses in Australian bats.



Dr. Alison Peel

ARC Discovery Early Career
Researcher Award (DECRA)
Research Fellow |
Griffith University





Keren Cox-Witton
Program Manager - Surveillance
at Wildlife Health Australia

Keren Cox-Witton is the Program Manager for Surveillance at Wildlife Health Australia. She is a veterinarian with an interest in wildlife health and epidemiology and has worked at WHA since 2010. Keren coordinates the WHA Bat Health Focus Group, which has a broad membership and considers bat health issues in the context of biosecurity, public health, domestic animal health and environmental impacts in Australia. Keren's role at WHA also includes co-ordination of wildlife disease surveillance programs involving zoo-based hospitals and sentinel veterinary clinics, administering a national database of wildlife health information, and maintaining a national dataset for Australian bat lyssavirus.

Tyron is a Natural Areas Conservation Officer with a strength in developing novel management techniques for wildlife conservation and conflict issues. Tyron is highly experienced in flying-fox management and conservation and is a member of the SEQ flying-fox managers group and the LGAQ/DES flying-fox special working group. He also presented at Annual flying-fox forum 2019 on novel Heat-stress Autonomous Response Unit, for which he was a Finalist for Sunshine Coast Council CEO Awards 2019 Innovation Category (Project lead). Tyron was also involved in the Queensland-first trial of subsidised services program for flying-fox management.



Tyron de Kauwe
Natural Areas Conservation
Officer | Sunshine Coast Regional
Council



Jess Gorring
Team Leader – Environment
Moreton Bay Regional Council

I am the Team Leader - Environment with the Moreton Bay Regional Council my primarily role is to lead a team of Officers to deliver wildlife management across the region. My background is a fauna ecologist with 14 years' experience in the environmental industry. My background has included research, environmental consultancy, resources industry and Local Government. I have been working in flying fox management for the last 7 years.

Jess is a Wildlife Biologist with 16 years' practical experience with wildlife through positions in the veterinary, zoo and consulting industries. She has extensive experience in risk assessment and managing human/wildlife conflict, with demonstrated successful outcomes developing and implementing mitigation measures for a diverse array of wildlife. Jess is passionate about driving pragmatic wildlife management policy, balancing the needs of community and conservation, and is driving a National Flying-fox Strategy and Working Group to ensure a consistent and strategic national approach to flying-fox management and conservation.



Jess Bracks
Principal Wildlife Biologist |
Ecosure





Doug Gimesy
Conservation & Wildlife
Photojournalist

Doug is a professional conservation and wildlife photojournalist who focuses on Australian issues. A Senior Fellow of the International League of Conservation Photographers (iLCP) and co-chair of their ethics committee, his clients include National Geographic, BBC Wildlife, bioGraphic, Australian Geographic, as well various mastheads like The Guardian. Initially trained as a zoologist and microbiologist, he later completed a Masters of Environment and a Masters of Bioethics. Together, these two qualifications helped shape his thinking as what type of issues he should be focusing on and why – conservation and animal welfare issues.
Web: www.gimesy.com
Instagram: [doug_gimesy](https://www.instagram.com/doug_gimesy)



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ABSTRACTS

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WELCOME TO COUNTRY

Corey Turner | Kaurna man living on Kaurna Yerta in Adelaide

CONFERENCE OPEN

Felicity-ann Lewis | Deputy Chairperson Green Adelaide | Government of South Australia

USING EMERGING TECHNOLOGIES TO INFORM THE CONSERVATION MANAGEMENT OF THE GREY-HEADED FLYING-FOX (Keynote)

Justin A. Welbergen¹, Jessica Meade¹, Eliane McCarthy¹, Samantha Yabsley¹, Sienna Grady¹ & John Martin^{1,2}

¹Hawkesbury Institute for the Environment, Western Sydney University; ²Institute of Science and Learning, Taronga Conservation Society Australia

The grey-headed flying-fox (*Pteropus poliocephalus*) is a vulnerable, extremely mobile species of bat found in southeastern Australia where it is exposed to a range of anthropogenic threats including habitat loss, urbanisation, extreme heat events, and bushfires. However, at present, monitoring is inadequate and information on the impacts of threats is limited, posing key impediments to the sound conservation management of this ecologically important species. In this presentation we will provide an overview of the recent findings of our research aimed at informing the evidence-base for flying-fox management and conservation. We show that emerging technologies, such as drone, radar, and satellite remote sensing, along with large-scale applications of animal tracking, hold great promise for radically improving flying-fox monitoring and for facilitating the identification and documentation of population threats. Improved landscape-scale monitoring of the spatiotemporal dynamics of the grey-headed flying-fox, along with improved knowledge of threats, will help us be better equipped to predict and mitigate impacts and so enable more effective, proactive conservation management of the species across jurisdictional boundaries.

SOUTH AUSTRALIA UPDATE

Jason van Weenen | Species Ecologist | Government of South Australia





VICTORIA UPDATE

*Rodney Vile and Angus Williamson | Wildlife Emergencies | Biodiversity Division |
Department of Environment, Land, Water and Planning*

NEW SOUTH WALES UPDATE

Matthew Mo and Josh Gregory | Biodiversity and Conservation | NSW Department of Planning and Environment

AUSTRALIAN CAPITAL TERRITORY UPDATE

Clare Wynter and Stephen Bartos | ACT Wildlife

QUEENSLAND UPDATE

Lindsay Delzoppo | Director Northern Wildlife Operations | Department of Environment and Science

The Department of Environment and Science has been busy over the last year working on a number of initiatives aimed at enhancing flying-fox conservation and human-flying-fox conflict mitigation. These include synthesis work on little red flying-fox movement and behaviour to finalise information from previous research undertaken by the CSIRO, and some new work in collaboration with the CSIRO on spectacled flying-foxes:

- 1. Little red flying-fox movement and behaviour and implications for land managers –** DES is currently working on guidance material for land managers, including public communication material, that will summarise the comprehensive research recently completed by the CSIRO and come up with best-practice roost management advice based on the latest science.
- 2. Spectacled flying-fox research and gap analysis –** The CSIRO will analyse and publish the movement patterns, home range, and habitat use of spectacled flying-foxes in the Wet Tropics region and their management implications, based on existing satellite tracking data. In collaboration with DES, it will then collate and process DNA samples and establish a centralised genetic database for the species, before undertaking gap analyses of existing knowledge and developing a staged and prioritised Research Plan with objectives linked to clear benefits for management and conservation.
- 3. Flying-Fox Roost Management Grants Program -** DES is continuing to roll out its \$2 million Local Government Grants Program, which has to date funded a total of 20 councils, via 36 different projects, to develop roost management plans and come up with innovative new research programs and techniques to improve roost management.





AUSTRALIAN GOVERNMENT UPDATE

Tim McGrath | Threatened Species | Department of Climate Change, Energy, the Environment and Water

AN UPDATE ON THE SPECTACLED FLYING-FOX RECOVERY AND THE RECOVERY TEAM

Sera Steves¹ and Maree Treadwell Kerr² | The Spectacled Flying-fox Recovery Team

¹ secretary.batsoc@gmail.com; ² president@batsoc.org.au

Sera Steves (chair) and Maree Treadwell Kerr (Coordinator) will report on the progress of the Spectacled Flying-fox Recovery Team in recovering the endangered spectacled flying-fox.

As well as updating the forum on the status of the Recovery Plan, we will discuss the team's research and on-ground recovery priorities, funding needs and stakeholder engagement. We will report on outcomes to date, as well as challenges and opportunities to ensure the persistence of the SFF, its ecoservices and habitat and our work to create a society that values and celebrates flying-foxes.



USING DNA SEQUENCING TO DETERMINE DIET OF GREY-HEADED FLYING-FOXES ACROSS THE SPECIES' RANGE

Adam McKeown¹, Karen Bell², Chris Pavey³, Kathryn Batchelor⁴ & Eric Vanderduys⁵

¹CSIRO Land & Water, Waite, SA; ²CSIRO Land & Water, Floreat, WA; ²School of Biological Sciences, The University of Western Australia; ³CSIRO Land & Water, Berrimah, NT; ⁴CSIRO Land & Water, Floreat, WA; ⁵CSIRO Land & Water, Dutton Park, Qld

Documenting the plant species in the diet of flying foxes informs on their foraging behaviour, nutrition, role in pollination and/or seed dispersal and potential effects of habitat change. Traditionally this has been determined by tracking individual animals, or manually sorting and identifying pollen and seeds from collected faecal matter. Recently, genetic techniques have been used to identify food plants in the faeces of flying foxes.

Compared to morphological identifications, DNA metabarcoding requires less specialist expertise, and usually provides finer taxonomic resolution. Although it is more expensive on a per sample basis, but becomes cheaper with higher throughput, especially for species like flying foxes that roost in very large numbers. Frequently, DNA metabarcoding detects a higher number of trophic interactions than traditional methods, which can change our understanding of questions relating to specialisation and niche partitioning. Here we use faecal DNA metabarcoding to identify diet plant species of the grey-headed flying fox.

We then use this information to determine: (1) what plant species are being used by large camps of flying foxes; (2) the relative importance of native and exotic species in diets across urban and rural camps; and (3) impacts of the 2020-21 bushfires on availability of preferred diet species.

CORONAVIRUSES UPDATE

Dr. Alison Peel | ARC Discovery Early Career Researcher Award (DECRA) Research Fellow | Griffith University

DON'T BLAME BATS: PUBLIC MESSAGING ABOUT BATS & HUMAN HEALTH

Keren Cox-Witton¹ | Tania Bishop² | Wayne Boardman³ | Andrew Breed⁴ | Tamsyn Hogarth⁵
Debra Lee⁶ | Justin Welbergen⁷

¹Wildlife Health Australia; ²Wildlife veterinarian; ³The University of Adelaide; ⁴Australian Government Department of Agriculture, Fisheries and Forestry; ⁵Wildlife Victoria; ⁶Workplace Health and Safety Queensland; ⁷Western Sydney University; Australasian Bat Society

Recently, we have seen an increase in awareness of the links between animal, human, and environmental health ('One Health'). This has included increased media and public interest in health and disease of bats. News articles regularly cover diseases associated with bats such as Hendra virus, Australian bat lyssavirus, Nipah virus (Southeast Asia), Ebola virus (Africa), and more recently SARS-CoV-2 and other coronaviruses. These viruses have likely evolved with bats for thousands of years, and some have only recently caused disease in humans, as changes such as habitat loss and urbanisation have brought bats and humans into closer contact.

Informing the public of the potential risk of disease from bats is clearly important to protect human health; however, unbalanced public messaging and media reporting with sensational language can result in a public backlash and demonisation of bats. In Australia, such demonisation often exacerbates existing negative attitudes towards flying-foxes, resulting in increased incidences of animal cruelty and harassment, and calls for dispersal and destruction of flying-fox roosts and even culling. These actions can have severe impacts on both welfare and conservation.

The WHA Bat Health Focus Group has formed a working group to develop a checklist for ensuring a media release is consistent with balanced messaging as described in this presentation. Once completed, the checklist will be circulated to government media teams and further developed into publicly available guidelines, in collaboration with the Australasian Bat Society.

Some of the points to consider when preparing balanced messaging include:

- Avoid the use of sensational language and photos or images that negatively portray bats.
- Provide interesting facts on the natural history and ecology of bats.
- Emphasise the vital ecosystem role that flying-foxes play as long-distance pollinators and seed dispersers, and the conservation status as native / threatened species.
- Outline the human-induced drivers of disease emergence e.g. land clearing, climate change.
- Provide clear, practical advice on how to reduce the risk of disease transmission.





AN ANALYSIS OF CUSTOMER REQUESTS AND EXISTING BUFFER DISTANCES: USE OF PLANNING TOOLS TO MINIMISE POTENTIAL ROOST IMPACTS

Tyron de Kauwe | Natural Areas Conservation Officer | Sunshine Coast Regional Council

The Sunshine Coast Council (SCC) Regional Flying-fox Management Plan (RFFMP) currently performs management actions under buffers of <100m (high conflict) to <300m (low conflict) based on recommendations that 300m is a sufficient management buffer (Eby 2009). In response to urban growth across the region and as part of a review of our RFFMP we looked to validate these buffer zones empirically. SCC has a database of customer requests to facilitate workflow of officer response. In response to devolvement of power to local government for as-of-right authority to manage flying fox roosts, in 2014 SCC established a separate code for flying-fox requests.

All flying-fox requests received between 2014-2021 were validated to those specifically as complaints.

Requests considered outside the scope were:

- requests about feeding
- requests on private land
- requests in support of flying foxes
- requests where addresses could not be validated
- requests, emails, and petitions not registered in the system

In total, 414 complaints were validated and spatially recognised. The distance of each complaint was automatically measured from the lot boundary of the request to the nearest point of the maximum extent of the nearest flying fox roost. Multiple requests from the one property were registered as a metric to determine level of impact under the assumption that a greater number of requests would correlate to a greater level of impact.

Analysis determined 64% of requests occurred within 30 metres of a roost. The number of requests dropped dramatically over intervals thereafter. The average distance of requests received was ~72 metres from a roost.

These two measures have been provided as recommendations for planning scheme amendment and will inform review of management actions/plans.

THE IMPACTS OF THE FEBRUARY 2022 FLOODS ON THE FLYING-FOX ROOSTS THROUGHOUT THE MORETON BAY REGION

Jess Gorrington | Team Leader Environment | Moreton Bay Regional Council

The Moreton Bay Region is located within south-east Queensland, north of Brisbane. Within the region there are over 40 known flying fox colonies monitored and managed by Moreton Bay Regional Council. In February 2022, a significant weather event resulted in major flooding on a region-wide scale. The damage caused by this weather event was significant and even directly impacted several flying fox colonies within the region.

The region-wide weather event triggered a significant recovery effort from Council. The recovery effort was required across most parks and reserves and several flying fox colonies, with some works being over prolonged periods. In addition, the timing of the floods and resulting recovery work was within the later part of the flying fox breeding season. Works within the breeding season of the flying foxes required careful management and monitoring to ensure the welfare of the colonies and compliance with relevant legislation.

This presentation will cover the variety and severity of damage that the February 2022 flood had on flying fox colonies throughout the region. It will also cover the recovery efforts, mitigation measures that were implemented by Council and the colony's responses to work.



AUSTRALASIAN BAT SOCIETY FLYING-FOX UPDATE



*Maree-Treadwell Kerr, Jess Bracks, Dr John Martin, Sarah Curran |
ABS Flying-fox Expert Group Co-conveners*

A REVIEW OF CANOPY-MOUNTED SPRINKLER SYSTEMS AS A FLYING-FOX DETERRENT: 2015-2022

Tyron de Kauwe | Natural Areas Conservation Officer | Sunshine Coast Regional Council

Sunshine Coast Council have been utilising canopy-mounted sprinkler systems across nine locations over the last seven years. It is by no means the silver bullet for flying-fox management, but can provide a larger buffer, allows a greater element of control to the resident and can facilitate a greater level of tolerance.

The methodology employed by Sunshine Coast Council is different to systems recently installed and provides the resident an opportunity to be actively involved in the management process by allowing them an element of control in the process. This technology has started to gain popularity and it is timely to provide a review of the methodology used by Sunshine Coast Council, the scope of works, pros and cons. Sunshine Coast Council have refined the current model over time and would like to share the findings.

THE RESILIENCE OF FLYING-FOXES IN RELATION TO CONSTRUCTION WORKS

Jess Gorring | Team Leader Environment | Moreton Bay Regional Council

The Moreton Bay Region is located within south-east Queensland, north of Brisbane. Within the region there are over 40 known flying fox colonies monitored and managed by Moreton Bay Regional Council. In 2021, Council was successful in obtaining funding for two projects through the Round 1 of the Queensland Government Flying Fox Roost Management - Local Government Grants Program.

One project was to relocation of a pathway from directly underneath flying fox roost trees to the outskirts of the colony at a high-profile suburban park. This colony was a relative new colony, first discovered in 2018.

The second project involved the construction of a 77m covered structure over a pathway running directly underneath roost trees at a sensitive site located near a Kindergarten, caravan park and aged-care facility. This colony has been recorded at this site for over a decade and known have large influxes of little red flying foxes during the summer months.

The purpose of these two projects were to minimise conflict with the community and promote co-existence with flying foxes. The presentation will provide an overview of the planning, permits/approvals, mitigation measures and the delivery of each project. In addition, the presentation will cover lessons learnt and the observation of the flying fox colonies during the delivery phase of each project.





Government of South Australia
Department for Environment
and Water



THANK YOU

www.flyingfoxforum.com



Photo Credit: Nick Edards