Flying-fox Management Strategy

2019–2029

City of Logan naturally green

LOGAN CITY COUNCIL

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I. Introduction

Executive summary

The City of Logan has three species of native flying-foxes. These are the black flying-fox (Pteropus alecto), grey-headed flying-fox (P. poliocephalus) and little red flying-fox (P. scapulatus).

The Queensland Nature Conservation Act 1992 lists these species as protected.

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 also lists the grey-headed flying-fox as vulnerable. This means it has additional protection.

There are a total of 20 known flying-fox roost sites within the City of Logan. Fourteen occur on Council-managed land. The remaining six occur on non-Council or mixed tenure land (Figure 1).

In 2013, the Queensland Government provided local government with an 'as of right' authority to manage flying-fox roosts within designated urban flying-fox management areas.

The Logan City Council Flying-fox Management Strategy identifies actions to reduce human and flying-fox conflict within the City of Logan.

A key action will be to develop education materials for the community. This work will promote the ecological value of flying-foxes and the low level of disease risk. Council will also provide advice to residents on how to reduce impacts from local flying-fox activity at a property level.

Actions may also include moderate vegetation management on Council-owned or managed land. Council will consider these works on a case-by-case basis. This is to ensure the efficient and effective use of funds. While impacts to flying-foxes and other ecological values are minimal.

Aims

The aims of the Flying-fox Management Strategy are to:

1. Provide a safe environment for the community where risks associated with flying-fox roosts are appropriately managed and amenity impacts are reduced as much as possible.
2. Conserve flying-foxes throughout Logan City acknowledging their critical ecological role.

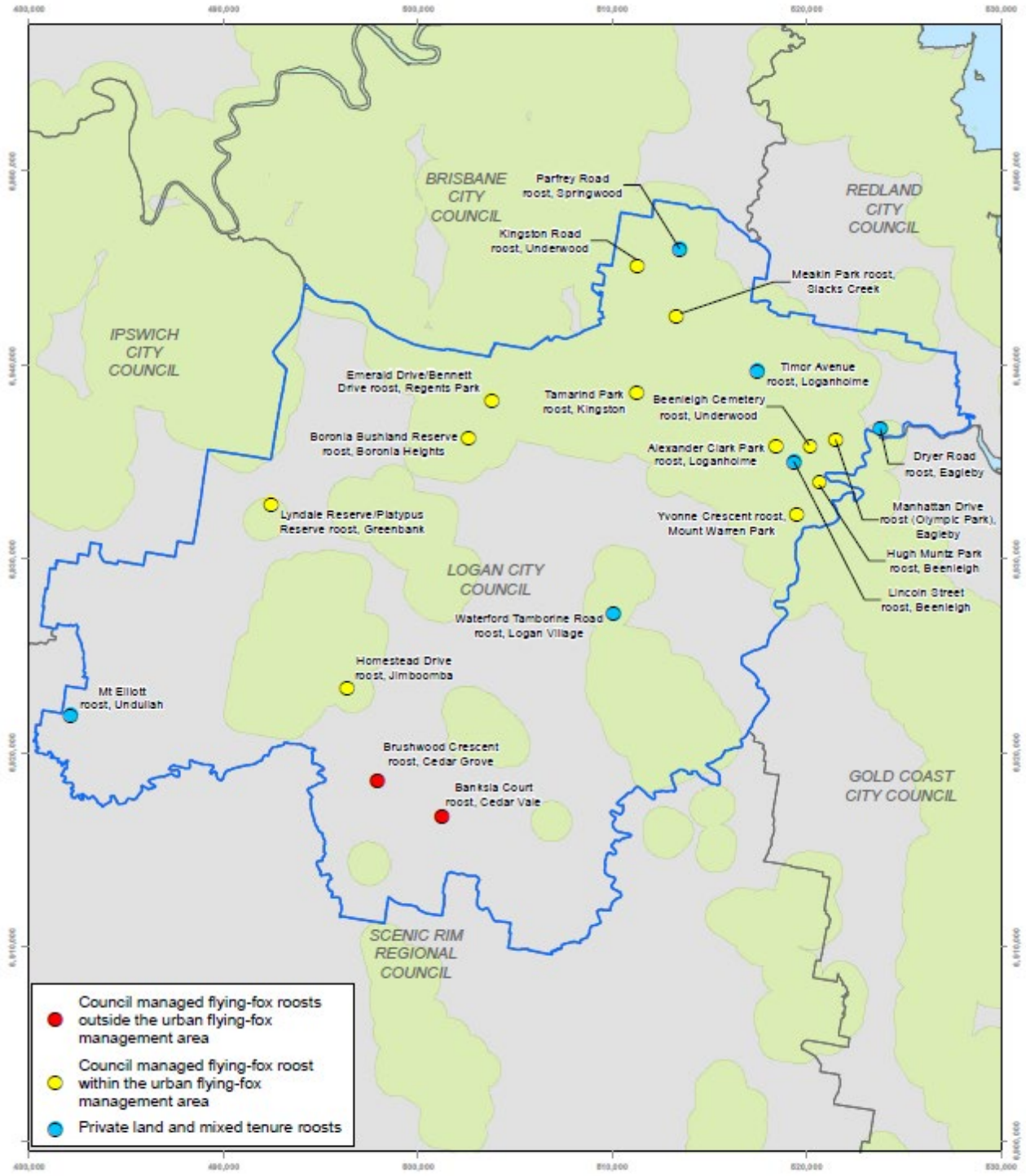


Figure 1: Flying-fox roost locations within Logan City LGA

Logan City Council

Urban flying-fox management area

Flying-fox management plan

ecosure

Background

Three species of flying-foxes (also known as 'bats' or 'fruit bats') occur within the City of Logan:

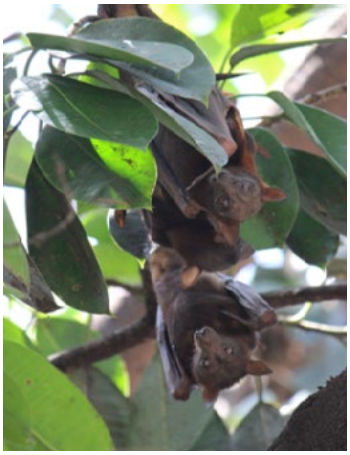
- grey-headed flying-fox (Pteropus poliocephalus)
- black flying-fox (Pteropus alecto)
- little red flying-fox (Pteropus scapulatus).

Grey-headed Flying-fox

Protected under **State** and **Commonweath** legislation

Black Flying-fox

Protected under **State** legislation



Little Red Flying-fox

Protected under **State** legislation

Flying-foxes play a key ecological role as long-distance pollinators and seed dispersers. This function critically underpins long-term persistence of many plant populations (McConkey et al. 2011, Wescott et al. 2008). This includes eucalypt and sclerophyll forests (DECC 2008), which often undergo fires. This ability to distribute seeds and cross-pollinate over large distances, is important across fragmented landscapes. This also includes areas recovering after fires.

Human activities have changed flying-fox distribution and habitat. This has increased interactions between people, domestic animals and flying-foxes in urban areas.

Around 70% of the grey-headed, black and little red flying-fox roosts in Queensland now occur in urban areas (Timmiss 2017). This has resulted in increased human and flying-fox conflict.

Community complaints about flying-foxes include smell, noise, property value impacts and disease risk. Mess from faecal drop and damage to fruit trees are also matters of community concern.

In 2013, the Queensland Government provided as-of-right authority to local governments to manage flying-fox roosts within designated urban flying-fox management areas.

It is important to note that this authority:

- does not provide exemptions under other legislation;
- does not compel Logan City Council (LCC) to actively manage any flying-fox roost; and
- does compel LCC to undertake roost management on land that is not Council-owned or managed.

Council will provide advice and guidance to residents impacted by flying-foxes on their own property. Residents or landholders may also wish to manage a flying-fox roost on their land. They must apply to the Queensland State Government for a flying-fox roost management permit.

II. Strategic Fit

Council has designed the Strategy to align with broader strategic outcomes (Table 1). This will ensure the Flying-fox Management Strategy is effective and achieves multiple outcomes.

Table 1: Strategic alignment of the Flying-fox Management Strategy

Strategic Document	Strategic Level Link	Strategy
Logan City Council Corporate Plan 2017-2022	Corporate Plan Priority	Priority: Quality Lifestyles (QL) QL 2 Neighbourhoods are welcoming, inclusive and safe. Priority: Green and Renewable (GR) GR1 A carbon neutral and green city. Priority: Next Generation Governance (NG) NG3 We use responsible governance and establish strategic relationships in the management of assets and the delivery of services to the city.
Logan Destination Management Plan 2018-2022	Logan City Council strategic document	Enhancing tourism opportunities in the city.
South East Queensland Regional Plan (2009-2031)	Desired regional outcomes and policies	Measurable targets for the condition and extent of environment and natural resources.
South East Queensland (SEQ) Natural Resource Management (NRM) Plan (2009-2031)	Desired regional outcomes and policies	Targets include maintaining and improving conservation status of native species and maintaining or increasing habitat for priority species.
Queensland Government - Flying-fox Roost Management Guideline	Queensland State framework and guideline for Local Government	Guideline assists decision-making regarding management options at flying-fox roosts for Local Government.
Queensland Government - Code of Practice Low impact activities affecting flying-fox roosts	Queensland State Code of Practice	The Code guides landholders on what low impact activities may be undertaken at a flying-fox roost to ensure welfare standards are upheld and impacts to flying-foxes avoided.
Queensland Government - Code of Practice Ecologically sustainable management of flying-fox roosts	Queensland State Code of Practice	The Code specifies how local government may manage roosts within the urban flying-fox management area (UFFMA) defined by the Department of Environment and Science (DES).
Queensland's Ecotourism Plan (2013-2020)	Vision and strategic priorities	Strategic priorities include facilitating investment into ecotourism products and embracing a partnership approach.
Animal Care and Protection Act 2001	Queensland State Legislation	Legislation promotes the responsible care and use of animals and protects animals from cruelty.
Planning Act 2016	Queensland State Legislation	Requires local government to prepare planning schemes to manage growth and change in their local area.
Nature Conservation Act 1992 (NC Act) - Nature Conservation (Wildlife Management) Regulation 2006	Queensland State Legislation	All native animals and plants, including flying-foxes and their habitat, are protected under the NC Act. Any interference or management of a roost is regulated under the Nature Conservation (Wildlife Management) Regulation 2006.
Vegetation Management Act 1999 (VM Act)	Queensland State Legislation	Regulates clearing of certain native vegetation.

Strategic Document	Strategic Level Link	Strategy
Environmental Protection Act 1994 (EP Act) - Environmental Protection Regulation 2008	Queensland State Legislation	The EP Act protects Queensland's environment while allowing for development that improves quality of life, both now and in the future, in a way that maintains ecological processes on which life depends (ecologically sustainable development).
The Queensland Plan	Vision and strategic priorities	Vision: We will be the greatest state in which to live, work and play, and guardian of a sustainable natural environment that inspires an active lifestyle and supports healthy communities.
Australia's Native Vegetation Framework 2012	National framework to guide the ecologically sustainable management of Australia's native vegetation	Goals include increasing the national extent and connectivity of native vegetation and maintaining and improving the condition and function of native vegetation.
National Wildlife Corridors Plan 2012	Australian Government's framework to retain, restore and manage ecological connections in the Australian landscape	Vision: Diverse, connected and healthy landscapes that support and sustain biodiversity, communities and wellbeing.
National Airports Safeguarding Framework - managing risk of wildlife strike	National land use planning framework	Guides planning requirements for development or significant actions to manage wildlife strike risk.
Environmental Protection and Biodiversity Act 1999 (EPBC Act)	Australian Government Legislation	Provides for the protection of matters of national environmental significance (MNES). The grey-headed flying-fox is listed as vulnerable species under the EPBC Act, meaning it is considered a MNES.
Referral Guideline for Management Actions in Grey-headed and Spectacled flying-fox Camps (EPBC Act Policy Statement)	Australian Government policy statement	The intention of the Referral Guideline is to ensure that there are no significant impacts on the EPBC Act listed grey-headed and spectacled flying-foxes due to actions to manage their camps.
Draft National Recovery Plan for the Grey-headed flying-fox January 2017	Australian Government Recovery Plan	Guides and outlines objectives for the recovery of the grey-headed flying-fox (GHFF).
International Union for Conservation of Nature and Resources (IUCN) Red List	Global inventory of the conservation status of species - members Australian Government and Queensland State Government	Regional Red Lists are produced by countries or organisations, which assess the risk of extinction to species within a political management unit. The grey-headed flying-fox is listed as vulnerable on the IUCN Red List because of continuing population decline (IUCN 2008).

III. Vision - looking forward

The Flying-fox Management Strategy aims to reduce the direct and indirect impacts associated with flying-fox roosts in the City of Logan. It helps guide how risks can be appropriately managed, as well as support and conserve the critical role of flying-foxes.

IV. How did we develop the management strategy?

In response to changes in Queensland State Government legislation, Codes of Practice and the passing of an 'as-of-right' authority to local government to manage flying-foxes in defined urban areas. The Logan City Council Flying-fox Management Strategy has been developed through:

- engagement with experienced flying-fox management experts and consultants
- comprehensive internal engagement
- participating in the south-east Queensland regional flying-fox management network, and
- researching best practice sustainable roost management undertaken across Australia, and south-east Queensland in particular.

V. Our Values - Policy position

Logan City Council's 'Logan Listens: Residents' Survey' consistently highlights the importance of protecting bushland and improving ecological values.

This position is confirmed through Council's Corporate Plan Priority: GR1 – A carbon neutral and green city. Plan priorities are actions delivered through key Council projects and initiatives. These help to manage and enhance the City of Logan's natural areas and ecological corridors.

Flying-foxes play an important ecological role in maintaining healthy ecosystems.

Council's policy approach to manage human and flying-fox conflict is through education and information. Direct management methods, such as roost dispersal are very costly. Other councils who manage flying-fox roosts report dispersal often worsens any human-wildlife conflict. Research and other council experience have found, that as soon as most dispersal programs end, flying-foxes return to the site. Often with a result, the roost splinters into several locations in the local area (Welbergen and Eby 2016; Roberts and Eby 2013).

VI. Where are we now?

Flying-foxes in the City of Logan

The City of Logan has approximately 20 known flying-fox roosts, yet not all are active at one time. Fourteen are on Council-owned or managed land, with six situated on non-Council land or mixed tenure. All flying-foxes and their habitat are protected under state government legislation.

Flying-foxes are nomadic. They move between a network of roosts across Australia. This is often in response to the flowering and fruiting of food trees. Flying-foxes rear their young, rest and socialise during the day in roosts. Being nocturnal they leave the roost each night to forage.

In recent times, they may appear more often roosting and foraging in urban areas. This is due to a range of factors including habitat clearing and drought. Frequent or large scale bushfires also see flying-foxes visiting or staying longer in urban areas. This may be until the bush has had time to regenerate. Our urban areas provide opportunities for year-round food availability. This can be from both native and exotic species alike. This has led to increased interactions between humans and flying-foxes, which can lead to conflict.

Grey-headed flying-fox

Across the City of Logan, grey-headed flying-foxes can be found. They are nationally protected as a vulnerable species and listed as a MNES. Their home range can stretch from Central Queensland to South Australia (DoEE 2017).

All grey-headed flying-foxes are regarded as one population. This one population, at any given time, moves freely around its entire national range (DoEE 2017).

Grey-headed flying-foxes feed on fruit and blossom of Eucalypts, Melaleuca, rainforest species and exotic plants. Foraging generally occurs within 20 km of their roost, as far as 50 km from their roost in a single night (Roberts et al. 2012).

Grey-headed flying-foxes generally show a high level of fidelity to camp sites. This means they often return year after year to the same site. They have even been recorded as returning to the same branch of a particular tree (SEQ Catchments 2012).

Black flying-fox

Black flying-foxes occur in coastal areas. They range from Shark Bay in Western Australia, across Northern Australia. Moving down through coastal Queensland and into NSW (Churchill 2008; OEH 2015a).

They forage on the fruit and blossoms of native and introduced plants (Churchill 2008; OEH 2015a).

Black flying-foxes are largely nomadic. Their movement and local distribution are guided by climatic variability. They are also influenced by their preferred food plants flowering and fruiting patterns. Feeding commonly occurs within 20 km of the camp site (Markus & Hall 2004).

Little-red flying-fox

The little-red flying-fox is widely distributed throughout northern and eastern Australia. This is the most nomadic of the three species. They often move sub-continental distances in search of sporadic food supplies. Sometimes they move in groups of hundreds of thousands.

Their general migration pattern sees them travel south to visit the coastal areas of south-east Queensland. This extent has also now included northern New South Wales during the summer months. LRFFs tend to arrive in the City of Logan around spring and summer.

Little red flying-foxes forage almost exclusively on nectar and pollen. Though they will eat fruit at times (Australian Museum 2010).

They are unique in the way they roost on branches, clustering in dense bunches on a single branch. All the weight of roosting individuals can sometimes break large branches. This can cause significant structural damage to roost trees.

Human and animal health

Some individual flying-foxes, like all animals, carry pathogens that may pose a risk to the health of people and domestic animals. However, the risk of transmission can be easily managed. Council will ensure up-to-date health information is readily available to the community.

Lyssavirus

Australian Bat Lyssavirus (ABLV) is found in a very small proportion of flying-foxes (and other bats). Advice from Queensland Health is that the risk of becoming infected with ABLV is very low.

The passing of closely related viruses suggests contact or exposure to flying-fox faeces, urine or blood does not pose a risk of exposure to ABLV. Neither does living, playing or walking near flying-fox roosting areas (Queensland Health 2017).

The disease in humans can easily be prevented by avoiding direct contact with flying-foxes. Effective pre- and post-exposure vaccinations are also available.

Further information can be found at the Queensland Health 'Australian Bat Lyssavirus' webpage.

Hendra virus

Flying-foxes are the natural host for Hendra Virus (HeV). The virus can be transmitted from flying-foxes to horses. Infected horses sometimes amplify the virus which can then pass it onto other horses, humans and dogs.

There is no evidence that the virus can be passed directly from flying-foxes to humans (Queensland Health 2017). Transmission to dogs has been through contact with infected horses. Not directly from flying-foxes as may have been reported (Queensland Government 2018).

Although the virus is occasionally present in flying-fox populations across Australia. The likelihood of horses becoming infected is low and so human infection is extremely rare.

Appropriate husbandry practice reduces the likelihood of exposure. Vaccination of horses can protect horses and subsequently humans from infection (DAFF 2013).

Further information can be found at the Queensland Health 'Hendra Virus' webpage. Information for horse owners and veterinarians can be found at the Department of Agriculture and Fisheries 'Hendra Virus' webpage.

Water contamination

Contamination of water supplies by any animal excreta poses a health risk to humans. This includes waste products from birds, amphibians and mammals such as flying-foxes. Household tanks should be designed to minimise potential contamination. Using first flush diverters for example, will divert contaminants before they enter water tanks.

Normal pool maintenance such as skimming, filtration and chlorination will remove wildlife contaminants.

VII. Our Strategic Objectives

Strategic Objective 1

Build community capacity and understanding of flying-fox behaviour and their ecological importance. All with the aim to reduce human - flying-fox conflict

Research has shown that the presence of flying-foxes in urban areas is a divisive issue. While some community members see the ecological values of flying-foxes and support them. Others report only negative impacts with roosting and foraging flying-foxes (Ecosure 2014).

Engaging with community and providing information is critical. This will ensure the community understands the ecological importance of flying-foxes. It will also ease community concerns associated with health and amenity impacts.

Outcomes

1.1. Develop school-based educational resources in partnership with regional and State partners

1.2. Develop and maintain Council's flying-fox information webpage and social media communications

1.3. Develop and produce flying-fox educational signage in priority locations

1.4. Develop and provide fact sheets and information about flying-foxes. This includes the critical ecological role they play. As well as ways to mitigate potential health and amenity impacts

1.5. Provide support and advice on what residents can do to manage the impact of flying-foxes on their property

1.6. Continue to promote the importance of flying-foxes. This includes at Council workshops, forums and events

1.7. Undertake periodic surveys to gauge community views and perceptions of flying-foxes. This will inform part of the implementation of the Flying-fox Management Strategy.

Strategic Objective 2

Carry out and facilitate actions to reduce impacts on the local community of identified high conflict roosts

Council will work to maintain suitable buffers from property boundaries. This is where possible and practical on Council-owned or managed land, as assessed on a case-by-case basis. This may apply where residents are significantly impacted by a consistently used roost. Any and all actions will be in line with the State's Code of Practice.

The average temperature in Australia has increased by almost 1°C since 1901. Seven of the ten warmest years on record have occurred since 2002 (Australian Academy of Science 2015). Extreme weather events such as heat waves, can cause distress in our family pets. But heat stress can also impact our native wildlife, particularly flying-foxes. For example, a heat stress event in January 2014 led to the deaths of 45,500 flying-foxes across south-east Queensland (Welbergen et al. 2014).

There is now a Flying-fox Heat Event Response Guideline for south-east Queensland (Bishop and Lyons 2018). It is important to be prepared and enable measures which aim to reduce heat stress. Council is registered to receive alerts via the national Flying-fox Heat Stress Forecaster.

Outcomes

2.1. Based on the level of risk, identify, assess and prioritise management actions at flying-fox roosts.

2.2. On a case-by-case basis undertake vegetation management works. This includes habitat restoration on Council-owned or managed land. All actions will be best practice to minimise risk to employees and impacts on flying-fox roost habitat

2.3. Provide advice on active management options where roosts are on private property. These actions and options will meet the Code of Practice - Low Impact activities affecting flying-fox roosts

2.4. Collaborate with the RSPCA, relevant government departments, and wildlife organisations. This is to proactively manage heat stress impact on flying-foxes and other associated impacts.

Strategic Objective 3

Collaborate with regional partners to inform and support flying-fox research and management actions

Our knowledge about flying-foxes is constantly developing. Council is proactively working with regional partners to build local knowledge to be better informed. Flying-fox roosts and foraging habitats cross all tenures and government area boundaries. Management of any one site or species often involves various landholders. Council seeks to work together with our neighbours.

Outcomes

3.1 Collaborate with all levels of government on the management of flying-foxes. This includes community safety, compliance, conservation and recovery planning

3.2. Take part in and link with external flying-fox management working groups and forums. Work with other stakeholders

3.3. Establish partnerships with universities and reputable flying-fox conservation and research groups

3.4. Access research and data on the movements of flying-foxes and population numbers to help manage local roosts.

VIII. Key Areas of Interest - Where are we going?

1. The City of Logan is one of the largest and fastest growing cities in Australia. Home to more than 300,000 people, the population is forecast to grow to 500,000 by 2041 (Queensland Treasury 2018). Flying-foxes move freely around our vast landscape. Variable food and habitat requirements may see new or temporary roosts form. Forward planning can reduce and avoid future conflict between humans and flying-foxes. Having separation between future developments and existing or historical roosts may help. New developments or current landholders can create their own vegetation buffers. Planting non-flying-fox attracting trees and shrubs. This will help deter flying-foxes foraging in backyards.

   Council will be responsive to community concerns. We will balance that with the protection of flying-fox roosts and habitat.

2. The climate is changing within south-east Queensland. This means we may see more unpredictable extreme weather events. This could include severe thunderstorms, hail and very hot temperatures. Flying-foxes suffer from heat stress when the ambient temperature goes above approximately 38°C (Snoyman et al. 2012). This is due to their inability to sweat. They then must expend energy on cooling mechanisms such as fanning. It is likely that in a changing climate, flying-foxes will become more susceptible to heat stress events. Council will proactively work with partners to manage heat stress events and associated risks.

IX. Implementation, Evaluation and Review

Actions to carry out the Flying-fox Management Strategy will be reviewed annually. This is to ensure effective implementation.

Council will use the national Monitoring, Evaluating, Reporting and Improvement (MERI) framework. The ongoing monitoring will help us assess the performance against strategic objectives. This will allow us to amend and improve the strategy where needed.

Within three months of each management stage completed, we will assess its success.

Table 2: Evaluation and review schedule for the life of the Strategy

Review process	Review considerations
Post-management assessment	Have management actions been successful?
Annual review and evaluation	• Have management actions, following the above, been successful? • Is a community engagement plan required? • Have community education and conservation actions been completed? • Are ongoing community education and conservation actions progressing?

XII. Acknowledgements

The Logan City Flying-fox Management Strategy (2019 - 2029) was developed by Logan City Council. Council was guided and informed by Ecosure Pty Ltd and other key stakeholders. Stakeholders represent government, industry, non-government organisations, research institutions and the wider Logan community.

XIII. Questions and Further Information

If you have any questions or would like to know more about flying-foxes please visit Council's web page: logan.qld.gov.au/environment-water-and-waste/wildlife.

Alternatively if you have a general inquiry, please contact Council on 07 3412 3412 or email environment@logan.qld.gov.au

XIV. References and resources

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