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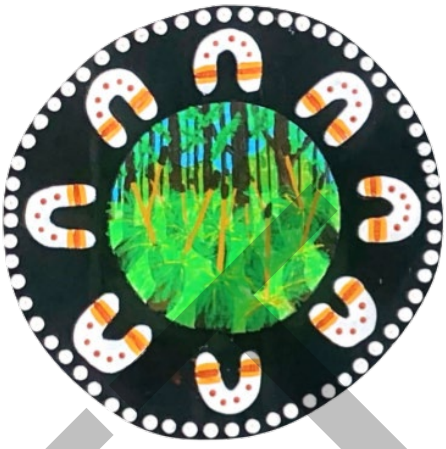
PINAROO PARK
FLYING-FOX MANAGEMENT PLAN

R1 DRAFT September 2024

NOOSA COUNCIL

Acknowledgements



Ecosure acknowledge the Traditional Custodians of the lands and waters where we work. We pay deep respect to Elders past and present who hold the Songlines and Dreaming of this Country. We honour and support the continuation of educational, cultural and spiritual customs of First Nations peoples.

We would like to thank Noosa Council for their assistance during development of this Flying-fox Management Plan, particularly David O'Gorman and Kara Reading.

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Acronyms and abbreviations

ACP Act	*Animal Care and Protection Act 2001* (Queensland)
BFF	Black flying-fox (*Pteropus alecto*)
Council	Noosa Council
DESI	Department of Environment, Science and Innovation (Queensland)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EVNT	Endangered, vulnerable and near threatened
FFRMP	Flying-fox Roost Management Permit
Fisheries Act	*Fisheries Act 1994*
GHFF	Grey-headed flying-fox (*Pteropus poliocephalus*)
HSE	Heat stress event
LGA	Local government area
Low Impact COP	*Code of Practice – Low impact activities affecting flying-fox roosts*
LRFF	Little red flying-fox (*Pteropus scapulatus*)
MNES	Matters of National Environmental Significance
NC Act	*Nature Conservation Act 1992* (Queensland)
NC Plants Regulation	Nature Conservation (Plants) Regulation 2020 (Queensland)
the Park	Pinaroo Park, Noosa Heads
the Plan	Pinaroo Park Flying-fox Management Plan 2024
the Regulation	Planning Regulation 2017 (Queensland)
the roost	Pinaroo Park flying-fox roost
Roost Management COP	Code of Practice – Ecologically sustainable management of flying-fox roosts
SEQ	South East Queensland
SoMI	Statement of Management Intent
UFFMA	Urban Flying-fox Management Area
VM Act	*Vegetation Management Act 1999* (Queensland)

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1 Introduction

1.1 Background

Pinaroo Park (the Park) has been occupied as a flying-fox roost for at least 15 years and has generally been a low conflict site. In the last few years, flying-fox numbers have increased temporarily, which has resulted in some residents surrounding the roost experiencing conflict associated with flying-foxes. As a result, Noosa Council (Council) engaged Ecosure to develop a plan for the Pinaroo Park flying-fox roost (the roost). In accordance with Council's Statement of Management Intent (SoMI) (Noosa Council 2023), this Pinaroo Park Flying-fox Management Plan (the Plan) aims to mitigate community conflict, whilst ensuring the conservation of flying-foxes and the critical ecosystem services they provide.

1.2 Legislation

There are four species of flying-fox found on mainland Australia. Three of these four species have been known to occur at different times within the Noosa Council local government area (LGA), including the grey-headed flying-fox (*Pteropus poliocephalus*; GHFF), black flying-fox (*P. alecto*; BFF) and little-red flying-fox (*P. scapulatus*; LRFF). As native animals, all flying-foxes and their roost habitat are protected under State legislation. The GHFF is a threatened species and is therefore also protected under Commonwealth legislation. An overview of relevant Commonwealth and State legislation are provided in Appendix 1.

Commonwealth

The Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999) provides protection for the environment, specifically Matters of National Environmental Significance (MNES). A referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water is required under the EPBC Act for any action that is likely to significantly impact on an MNES. The GHFF is listed as a vulnerable species under the EPBC Act, meaning it is classified as an MNES.

State

All flying-foxes and their roost habitat are protected under the *Queensland Nature Conservation Act 1992* (NC Act). Under this legislation, administered by the Department of Environment, Science and Innovation (DESI), it is an offence to harm the animals, or disturb flying-foxes from daytime roosts without approval.

The roost is located within an Urban Flying-fox Management Area (UFFMA). As such, Council has an 'as-of-right' authority to undertake roost management activities in accordance with the *Code of Practice – Ecologically sustainable management of flying-fox roosts* (Roost Management COP) (DES 2020a). Council must notify DESI prior to any planned management actions being undertaken. Notification is by means of a completed 'flying-fox management notification form' via DESI website and submitted at least two business days prior to commencing any management actions. Notification is valid for all notified management actions for a four-week timeframe.

Anyone other than local governments looking to undertake any management actions directed at roosting flying-foxes, or likely to disturb roosting flying-foxes, is required to apply for a Flying-Fox Roost Management Permit (FFRMP). Certain low impact activities (e.g. mowing, minor tree trimming) do not require approval if undertaken in accordance with the *Code of*

Practice – Low impact activities affecting flying-fox roosts (Low Impact COP) (DES 2020b).

In addition, the *Queensland Animal Care and Protection Act 2001* (ACP Act) applies to all living vertebrate animals, including wildlife. To comply with the ACP Act, flying-fox management actions must not cause mental or physical suffering, pain, or distress to these animals.

Native vegetation is also protected under various legislation, including the NC Act, Nature Conservation (Plants) Regulation 2020 (NC Plants Regulation), and in some cases the *Vegetation Management Act 1999* (VM Act) and Planning Act 2016. Clearing of vegetation in core koala habitat and/or a koala priority area is prohibited, with few exemptions (see Schedule 21 and 24 of the Planning Regulation 2017 [the Regulation] for exempted works). Clearing of vegetation in a high-risk area under the NC Plants Regulation requires a protected plant survey to be undertaken. Permits/approvals may be required for trimming or clearing protected habitat/plants.

Local

The Flying-fox Roost Management Guideline (DES 2020c) has been developed to provide local government with additional information that may assist decision making and management of flying-fox roosts. Furthermore, local governments are required to apply for a FFRMP for management options not specified in the Roost Management COP.

Council has developed a SoMI (Noosa Council 2023) to articulate the approach that will be taken to manage flying-fox roosts in the Noosa LGA. The intent is to manage flying-fox roosts on Council-owned or managed land. Council does not undertake management actions on private land, however, may provide advice and assistance to residents and landowners affected by a flying-fox roost. Where a roost crosses Council and private land, Council will work cooperatively with landowners to develop and implement suitable mitigation actions.

The Park is classified as an ‘Area of Biodiversity Significance’ and having ‘Matters of State Environmental Significance Environmental Values’ under the Noosa Plan 2020 (Noosa Council 2020) and therefore is afforded a higher level of protection under local policy.

2 Pinaroo Park flying-fox roost

2.1 Site location and description

The roost is located in Noosa Heads on the Sunshine Coast (Figure 1), predominantly on Council-managed land (Lot/Plan 84SP248300). The Park is bordered by residential properties to the west (Allambi Terrace), south (Toulambi Street) and south-east (Wyandra Street). Noosa Fair Shopping centre and the Noosa Heads Bowls Club border the east of the Park. The north of the Park is bordered by Noosa Drive. During large influxes, the maximum extent extends onto private properties along Toulambi Street (Figure 1).

The Park is used as a recreational area with a playground and barbecue facilities to the north along Noosa Drive. There are walking paths around the Park which are frequented by members of the community for leisure and exercise, providing an important space for the surrounding community.

2.1.1 Ecological values

2.1.1.1 State and Commonwealth values

The Park is mapped as Regional Ecosystem 12.2.5 containing pink bloodwood (*Corymbia intermedia)*, Brushbox (*Lophostemon confertus)*, *Banksia* spp, and white cypress-pine (*Callitris columellaris)* open forest on beach ridges usually in southern half of bioregion.

It is also mapped as an area of 'High' aquatic conservation significance, a 'high-risk area' on the protected plant survey trigger map and regulated vegetation (essential habitat) for threatened species, including:

- koala (*Phascolarctos cinereus*)
- glossy black-cockatoo (*Calyptorhynchus lathami*)
- wallum froglet (*Crinia tinnula*)
- wallum rocketfrog (*Litoria freycineti*)
- wallum sedgefrog (*Litoria olongburensis*).

Many other species have also been recorded on site showing that the Park provides important habitat for a wide variety of flora and fauna species. Management at this site must consider these ecological values and relevant environmental protection legislation.

2.1.1.2 Local values

Under the Noosa Plan 2020 (Noosa Council 2020), the Park is mapped as the following:

- core koala habitat area (Koala Habitat Area Map)
- protected area (Strategic Framework map - Biodiversity Categories)
- connecting habitat area (Strategic Framework Map - Biodiversity Categories)
- recreation park (Local Government Infrastructure Plan - Public Parks & Land for Community Facilities)
- stormwater wetlands, bio-basins, sediment basins, swales and buffers (Local Government Infrastructure Plan - Public Parks & Land for Community Facilities).

Figure 1: Pinaroo Park site context

Noosa Council

Pinaroo Park Flying-fox Management Plan 2024

Core roost extent

Maximum known roost extent as at Aug 2024

Property boundary

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Job number: PR8212
Revision: 0
Author: TD
Date: 13/09/2024

0 25 50 100
Metres

GDA2020
Datum: GDA2020
Units: Degree

2.2 Flying-fox occupancy

The roost is typically between 1,000 and 3,000 GHFF and BFF (Figure 2). Since Ecosure began monitoring the roost on a monthly basis, two influxes of approximately 22,000 GHFF and BFF have been recorded: June 2023 and April/May 2024. Following the April/May influx, numbers in June and July 2024 remained slightly higher than normal, with approximately 7,000 GHFF and BFF (Figure 2). The most recent monitoring in August 2024 saw numbers reduce back to normal with approximately 2,500 GHFF and BFF. LRFF have not been recorded at the roost.

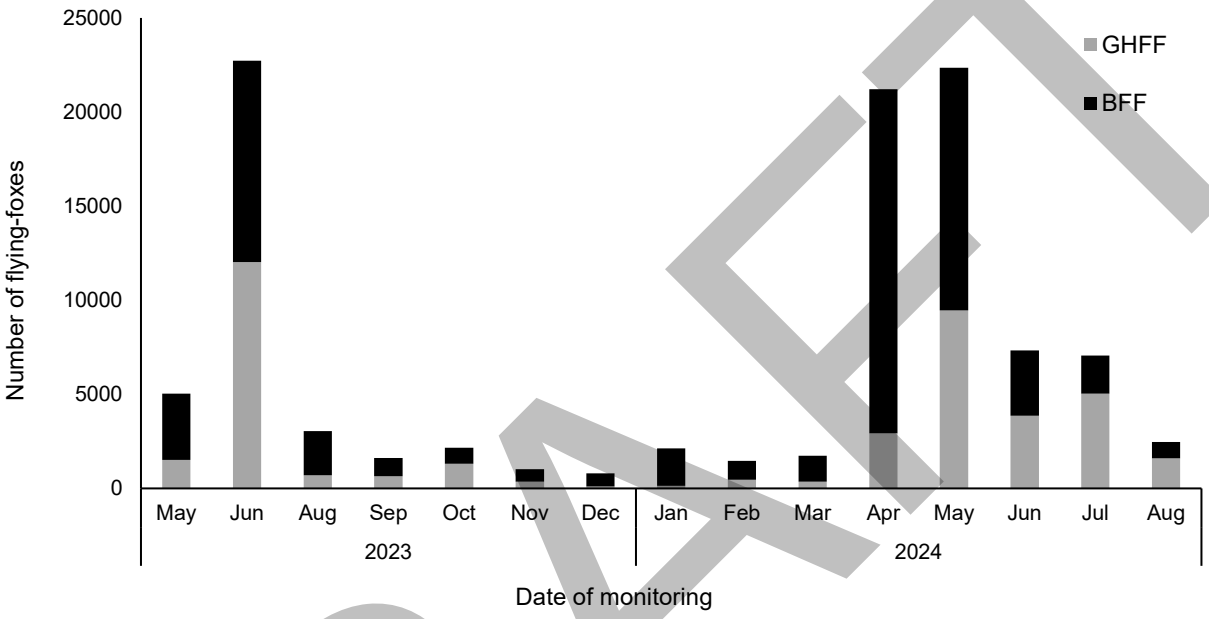

Figure 2 Number of flying-foxes at Pinaroo Park, Noosa Heads 2023-2024. Source: Council and Ecosure 2024.

2.3 Community engagement

Council has consulted with the local community about flying-foxes at the Park by responding to customer requests in the form of emails and phone calls. Council also works with eligible residents through processing subsidy requests for the Noosa Council Flying-fox Subsidy Program.

2.4 Community impacts

Most concerns raised by residents were during the two influxes in June 2023 and April/May 2024. In times outside these two influxes, the roost is not considered high conflict and residents generally do not raise concerns.

Amenity impacts, namely noise, smell, and mess are the primary causes of concern for residents reported to Council. These same impacts are the main concerns reported by community members using the Park for recreational purposes. It is acknowledged that living near a flying-fox roost can be challenging. This Plan has been developed with consideration to the impacts experienced by the surrounding community.

2.5 Previous management activities

The Park is maintained as a recreational park, including:

- regular leaf blowing
- footpath cleaning
- footbridge maintenance (as required)
- mowing (in applicable areas)
- tree trimming (where applicable) to maintain public safety
- regular maintenance of the playground and barbecue area
- weed maintenance
- fire trail trimming.

No active flying-fox management has been undertaken. Eligible residents are able to apply for an annual subsidy as part of the Noosa Council Flying-fox Subsidy Program for items/services to assist with impact mitigation.

3 Management actions

Potential flying-fox impact management options have been reviewed (Appendix 2) and those deemed to be suitable for the roost are outlined below. These management actions aim to reduce impacts on residents through a combination of short-term and long-term management approaches (see timeframes in Table 1).

Management actions will focus on ongoing monitoring, routine park maintenance, increasing flying-fox community awareness through tools such as education sessions and signage around the Park, and continuing the flying-fox subsidy program. Planned management actions are outlined below, with Appendix 2 providing a brief description of a range of management options available to Council.

As stated within Council's SoMI, Council does not undertake management actions on private land, however, is committed to providing advice and assistance to landholders affected by a flying-fox roost. Where a roost crosses Council and non-Council land, Council will work cooperatively with affected residents to develop mitigation actions.

Note all management actions need to comply with relevant State and Commonwealth legislation and some may require approvals (as outlined in Section 1.2, Table 1 and Appendix 2).

3.1 Roost monitoring

Council will continue monthly monitoring of the roost. More regular monitoring (e.g. weekly or fortnightly) will be considered if large influxes occur, or conflict at the site increases. Regular monitoring allows for Council to maintain current information on the roost extent, numbers and impacts at the site, make informed decisions on appropriate management actions and allows for an assessment on the efficacy of management actions that have been undertaken.

During monitoring, data collected should include:

- number and species of flying-foxes present
- current roost extent
- breeding status
- general behavioural observations
- impacts noticed at the site and specific properties which may be affected (e.g. tree damage).

3.2 Education and engagement

Education will form an important part of the ongoing management of flying-foxes to alleviate misconceptions and unnecessary fears. Council will ensure access to up-to-date information is available (with a particular focus on the low-health risk of living with flying-foxes, ecological importance of flying-foxes etc.), and residents are aware of impact mitigation options available at a property level (e.g. odour-neutralising gel pots, sound-proof curtains, white noise machines) and legislative responsibilities. Educational material should aim to cover key messages in a way that educates and informs, rather than cause alarm, e.g. emphasising that there is no risk associated with living or playing near a flying-fox roost (Queensland

Government 2024) – 'no touch, no risk' (BCRQ 2019a). Council will provide easily accessible information through educational signs, information sheets and/or updates on Council's website. Community engagement will be particularly important during large influxes of flying-foxes, which is typically between April and June.

3.2.1 Educational signage

Council will install flying-fox educational signs along the Park walkways given it is a highly trafficked area. Signage should include information regarding flying-fox ecology, behaviour, and conservation. Signs could also provide QR codes that link to websites and fact sheets for further information (e.g. developed by Council, DESI, Queensland Health etc.). Recommended locations can be seen in (Figure 3).

3.3 Community consultation

Council will continue to regularly liaise with impacted residents and businesses proportionate to the size of the roost (i.e. increased communication with impacted residents and businesses during influxes). Community notices and fact sheets (such as letter drops) could be utilised to inform the adjacent residences and businesses of potential increases in experienced impacts and how they could reduce these impacts at a property level. Council will also remind eligible residents of the Flying-fox Subsidy Program available for financial assistance in impact mitigation (Section 3.4).

Notices could provide information on flying-fox ecology and behaviour, which may assist residents to understand when and why they may experience different impacts (e.g. increased noise and odour impacts during the breeding season, when influxes may be expected due to flowering events in the area etc.). These notices should also outline actions currently being undertaken by Council to ensure transparency with the community.

During larger influxes, Council may engage with nearby businesses with industrial bins to ensure businesses are minimising noise, and therefore disturbance to flying-foxes and residents. Contractors working in the Park will be informed of when to stop maintenance work to ensure compliance with the Low Impact COP and minimise disturbance to flying-foxes and residents.

3.4 Subsidy program

It is understood that property modifications or services (e.g. pressure cleaning) may be costly, therefore eligible residents may apply for the Noosa Council Flying-fox Subsidy Program which can assist residents in covering some of the cost of these items or services. This subsidy is valued at $150 per property, per year at the time of development of this Plan.

3.4.1 Property modification

Manipulating the existing built environment can reduce the need for roost management (e.g. vegetation modification), while reducing negative impacts experienced by residents and can increase tolerance of living close to a flying-fox roost. A range of property modifications may be considered by private landholders to reduce impacts associated with living next to a flying-fox roost.

Property modifications that can be considered on a private property level include:

- covers for vehicles, pools/spas, and clothes lines (e.g. with carports or tarp covers)
- moving or covering eating areas (e.g. BBQs and tables) within close proximity to a roost or foraging tree to avoid faecal drop
- installing double-glazed windows, door seals, insulation, and/or sound-proof curtains
- purchase of white noise machine, odour-neutralising pots, fragrance dispensers and/or deodorisers
- creating visual/sound/smell barriers with fencing or hedges (plants selected for hedging should not produce edible fruit or nectar-exuding flowers, should grow in dense formation between two and five metres (Roberts 2006), or be maintained at less than five metres). Vegetation that produces fragrant flowers can assist in masking roost odour where this is of concern
- managing foraging trees (i.e. plants that produce fruit/nectar-exuding flowers) through pruning/covering with bags or wildlife friendly netting
- removing exotic trees.

3.4.2 Services

Receiving a subsidy to help alleviate the cost of these services may encourage tolerance of living near a roost, promote conservation of flying-foxes, can be undertaken quickly, will not impact the roost site, and would reduce the need for property modification. Services that may help alleviate flying-fox related impacts on a private property level include:

- high pressure cleaning outside areas
- roof and solar panel cleaning
- trimming and/or removing exotic trees.

3.5 Routine park maintenance

Council will continue to undertake scheduled maintenance of the Park as per the bushland reserve tier ranking (i.e. Tier 3). Following a large influx (e.g. over 10,000 flying-foxes), Council will assess the Park and if required, undertake additional reserve maintenance such as removal of woody debris, leaf blowing, pressure cleaning of footpaths and footbridge, cleaning of park amenities etc. Undertaking maintenance following an influx can improve reserve amenity and encourage tolerance of living near a roost.

3.6 Roost habitat improvement

Planting preferred roost vegetation (e.g. *Eucalyptus tereticornis, Melaleuca quinquenervia*) in areas of the Park that are sparsely vegetated (see Figure 3) can improve habitat and encourage flying-foxes to roost in these lower conflict areas. Habitat restoration also improves habitat for other animals such as koalas and birds.

Council will facilitate removal of weed species as required and in line with Tier 3 of the Bushland Reserve Management regime, particularly focusing on the southern extent of the Park (see Figure 3). There are many Cocos palms (*Syagrus romanzoffiana*) and other weed species such as tobacco bush (*Solanum mauritianum*). Cocos palm can have many negative health impacts to flying-foxes (BCRQ 2019b). Weeds should be managed in a staged approach to avoid altering roost habitat drastically. Bangalow palm (*Archontophoenix cunninghamiana*) could be planted in replacement of Cocos palms.

Council may consider facilitating community inclusion in revegetation/weed removal works as part of Council's BushCare program, to encourage stewardship for natural areas which can foster a sense of appreciation and pride in the local environment, as well as allow residents to make a meaningful contribution to their community. Council could apply for grants to assist funding of revegetation and weed management.

3.7 Alternative habitat improvement

Council should consider identifying suitable areas for lower conflict flying-fox roosts and undertake habitat improvement at these sites. This option must consider resources and availability of suitable alternative habitat, which may be limited. Council should consider incorporating this as part of a community restoration committee.

If deemed feasible, this option is likely to be more successful if aimed at improving or expanding known flying-fox roosts that are in lower conflict areas. In selecting new sites where flying-foxes have not been known to roost, preferred habitat characteristics detailed below (MacDonald et al. 2021, SEQ Catchments 2012) should be considered prior to undertaking habitat improvement.

- closed canopy > 5 m high
- dense vegetation with complex structure (upper, mid and understorey layers)
- shorter, less dense ground cover layer
- generally located within 200 m of watercourse (50% of roosts).
- within 50 km of the coastline or at an elevation < 65 m above sea level
- level topography (< 5° incline)
- ideally greater than one hectare to accommodate and sustain large numbers of flying-foxes and allow the roost to shift its extent so vegetation can recover (note this does not appear to be a strong flying-fox preference, but more a consideration in roost habitat creation/improvement)
- preference for ten tree species (accounting for 68% of roost habitats), including *Eucalyptus*, *Melaleuca*, *Rhizophora*, *Avicennia*, *Corymbia*, and *Tamarandus* species.

Selecting new sites and attempting to attract flying-foxes to them has had limited success in the past, and ideally, habitat at known roosts sites would be dedicated as a flying-fox reserve. Supporting further research into flying-fox roost preferences may improve the potential to create new flying-fox habitat.

3.8 Protocols to manage incidents

Council will respond to heat-stress events (HSE) as per the Flying-fox Heat Event Response Guideline (DES 2023) or consider developing a region-specific HSE document. Council will engage with wildlife carers and nearby residents and park users as required, particularly during potential mass mortality events such as HSEs and post-storm recovery.

3.9 Research

Council will incorporate new flying-fox management research into ongoing management where appropriate. Research can be used to identify native flowering events in the area and how this can impact flying-fox movements and roosting preferences. Research should also

aim to investigate the efficacy of new, innovative management technique, such as odour-neutralising technology.

Council will continue liaising with other South East Queensland (SEQ) Councils to share ideas and discuss efficacy of trialled management options.

3.10 Appropriate land use planning

Land-use planning will be used to ensure adequate distances are maintained between future residential developments and existing or historical flying-fox roosts. This may include requirements for buffers, noise attenuating building materials, covered car parks and clotheslines, bedrooms and outdoor areas positioned furthest from the roost, and lawn or gardens over hard surfaces to reduce cleaning. While this management option will not assist in the resolution of existing conflict, it is critical to avoiding future conflict.

3.11 Fire break as a flying-fox buffer

Council will continue to maintain the fire breaks and trails at the Park (see Figure 3) in line with the Noosa Bushland Reserve Strategic Fire Management Plan (Noosa Council 2021). This will ensure there is necessary separation to reduce fire risk and will also assist in providing residents with a buffer from flying-foxes.

There are currently no exemptions in legislation to clear vegetation specifically for flying-fox management. Given the Park is core koala habitat and is a high-risk area for protected plants, gaining an exemption to create a flying-fox buffer is highly unlikely.

3.12 Buffers without vegetation removal

If influxes become larger, more frequent, or if conflict increases, Council will investigate the installation of permanent or semi-permanent deterrents with consideration to current research, Council funding and resident consultation. This will make the buffer areas, such as the property boundaries of Toulambi Street and Allambi Terrace, unattractive to flying-foxes for roosting without the need for vegetation removal. Due to the high ecological value of the vegetation at the Park (Section 2.1.1), buffers without vegetation removal are much more suitable for this site. Council could consider trialling options such as visual deterrents and/or noise emitters though these options need to be changed frequently to avoid habitation.

4 Management action summary

Council management actions identified in Section 3 are summarised below (Table 1). For each action, details on permit requirements and timeframe is included.

Table 1 Pinaroo Park flying-fox management action summary

Management option	Council action	State/Commonwealth approvals required	Timeframe
Roost monitoring	Continue monthly monitoring to understand changes to roost extent, flying-fox numbers, seasonal fluctuations, species present, breeding status, impacts noticed at the site etc. More regular monitoring (e.g. weekly or fortnightly) should be considered if large influxes occur, or conflict at the site increases.	No.	Regular and ongoing.
Education and engagement	Install educational signage along walkways in the Park (Figure 3), outlining information such as flying-fox ecology, behaviour, and conservation, with a focus on seasonal movements and peak breeding times to inform the surrounding community of when influxes or more impacts (such as increased noise and smell during breeding/rearing of young) may be experienced.	No.	April 2025.
Community consultation	Continue to regularly liaise with impacted residents and businesses in proportion with the size of the roost. Consider mediums such as fact sheet letter drops and notices to: • communicate with surrounding residential dwellings and businesses • inform the community of potential increases in experienced impacts and how they could reduce these impacts at a property level • outline actions currently being undertaken by Council to ensure transparency with the community.	No.	Ongoing as required.
	Engage with nearby businesses to assist minimising noise and associated increased impacts to residents (e.g. industrial bins could be moved further from the roost).	No.	As required and during larger influxes.
Subsidy program - private landholder property modifications and services	Provide information regarding eligibility for the Flying-fox Subsidy Program ($150 per property, per year at time of plan development), notify eligible residents along with suggestions for property modifications/items and/or services that can be undertaken on a property level to reduce negative impacts.	No.	Ongoing.
	Continue distribution of subsidies as part of the Flying-fox Subsidy Program to eligible residents to assist in alleviating flying-fox related impacts.	No.	Ongoing.

Management option	Council action	State/Commonwealth approvals required	Timeframe
Routine park maintenance	Contractors working in the Park will be informed of when to stop maintenance work to ensure compliance with the Low Impact COP and minimise disturbance.	No permit if in compliance with Low Impact COP.	Regular and ongoing in accordance with the Bushland Reserve Strategic Management Plan.
	Continue scheduled maintenance of the Park as per the bushland reserve tier ranking (i.e. Tier 3). Following a large influx (e.g. over 10,000 flying-foxes), Council should reassess the Park and if required, undertake additional reserve maintenance (e.g. footpath cleaning, leaf blowing, clean-up of woody debris).		
Roost habitat improvement	Facilitate planting of roosting vegetation (e.g. *Eucalyptus tereticornis*, *Melaleuca quinquenervia*) in sparsely vegetated areas (see Figure 3). Once vegetation is mature, this may encourage flying-foxes to roost towards the lower conflict areas of the Park.	No.	By 2027 (with consideration to Council budget).
	Facilitate weed management as required and in line with Tier 3 of the Bushland Reserve Management regime, with a particular focus on Cocos palm and tobacco bush removal. Consider controlling Cocos palms and revegetating with Bangalow palms.	All contractors must comply with the following legislation regulating the use of chemicals for the project: *Agricultural Chemicals Distribution Control Act 1996*, *Land Protection (Pest and Stock Route Management) Act 2002*, *Chemical Usage (Agricultural and Veterinary) Control Act 1988*. Weed management activities shall be undertaken as required to control weeds that are listed under the *Biosecurity Act 2014*.	By 2027 (with consideration to Council budget).
	Council may consider facilitating community inclusion in revegetation/weed removal works through Council's BushCare program. Council could apply for grants to assist funding of revegetation and weed removal.	No.	At least annually.
Alternative habitat improvement	Undertake feasibility study to assess alternative suitable habitat and investigate the likelihood of success if alternative habitat improvement was undertaken in attracting flying-foxes away from high-conflict areas.	Study will be undertaken by a suitably qualified and experienced person knowledgeable in the ecology of flying-foxes.	Investigate by 2027.
Protocols to manage incidents	Respond to HSEs as per the Flying-fox Heat Event Response Guideline (DES 2023) and consider developing a region-specific HSE document. Council should engage with wildlife carers and nearby residents and park users, particularly during potential mass mortality events such as HSEs and post-storm recovery.	Appropriately trained and vaccinated personnel are required to handle and care for injured/sick/deceased flying-foxes.	Ongoing.

Management option	Council action	State/Commonwealth approvals required	Timeframe
Research	Incorporate new flying-fox management research into ongoing management where appropriate.	Research permit and Animal Ethics Committee approval may be required for some research.	Ongoing with detailed review annually.
	Continue liaising with other SEQ Councils to share ideas and discuss efficacy of trialled management options.	No.	Quarterly.
Appropriate land use planning	Incorporate planning controls where possible to avoid new development applications being built on/near known roosts/suitable roosting habitat. This may include requirements for buffers, noise attenuating building materials, covered car parks and clotheslines, bedrooms and outdoor areas positioned furthest from the roost, and lawn or gardens over hard surfaces to reduce cleaning.	Consideration to Council and State planning frameworks required.	Investigate as required.
Fire break as a flying-fox buffer	Continue to maintain the fire trails at the Park in line with the Noosa Bushland Reserve Strategic Fire Management Plan.	No State/Commonwealth approval required for exempt firebreak maintenance.	Regular and ongoing in accordance with Noosa Bushland Reserve Strategic Fire Management Plan.
Buffers without vegetation removal	If influxes become larger or more frequent and conflict increases, investigate feasibility of permanent or semi-permanent deterrents with consideration to current research, Council funding and resident consultation. For example, this could be considered along the property boundaries of Toulambi Street and Allambi Terrace to make buffer areas unattractive to flying-foxes for roosting, without the need for vegetation removal. Council could consider trialling options such as visual deterrents and/or noise emitters.	Notification to DESI for deterrent installation works and tree trimming (if required). Trimming koala habitat trees may require State approval.	Investigate if required (i.e. if conflict increases).

Figure 3: Potential Pinaroo Park management actions

Noosa Council

Pinaroo Park Flying-fox Management Plan 2024

- Educational sign
- Habitat improvement
- Maintain fire trail
- Cocos palm control
- Property boundary

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Job number: PR8212
Revision: 1
Author: TD
Date: 9/10/2024

0 25 50 100
Metres

GDA2020
Datum: GDA2020
Units: Degree

5 Evaluation and reporting

5.1 Evaluation and review

A review of the Pinaroo Park Flying-fox Management Plan will be scheduled annually or as needed, with community consultation and expert input sought as required. The Plan shall remain in force until a revised version is adopted by Council.

The following may trigger an earlier Plan update:

- significant changes to the roost dynamics at the Park (i.e. significant change in number, extent, LRFF occupation, frequency of influxes or conflict level)
- changes to relevant policy/legislation
- new management techniques becoming available
- outcomes of research that may influence the Plan
- incidents associated with the roost.

The progress, priority, and effectiveness of management actions in the Plan will be evaluated annually by Council.

5.2 Reporting

Council will complete the DESI evaluation form for actions under its as-of-right authority, returned within six weeks of the date of actions being completed, and will comply with any reporting obligations under other permits or approvals obtained to implement the Plan.

References

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Appendix 1 Legislation

Commonwealth

Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth's EPBC Act provides protection for the environment, specifically MNES. A referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water is required under the EPBC Act for any action that is likely to significantly impact on an MNES. The GHFF is listed as a vulnerable species under the EPBC Act, meaning it is an MNES.

State

Nature Conservation Act 1992

As native species, all flying-foxes and their roosting habitat are protected in Queensland under the NC Act. State approval is required to:

a) destroy a flying-fox roost;

b) drive away, or attempt to drive away, a flying-fox from a flying-fox roost ('drive away' is defined to mean "cause the flying-fox to move away from the roost; or if the flying-fox has moved away from the roost, deter the flying-fox from returning to the roost"); and/or

c) disturb a flying-fox in a flying-fox roost.

Note that the definition under Queensland law means that once a flying-fox roost is established, it remains as such even when it is unoccupied. The *Interim policy for determining when a flying-fox congregation is regarded as a flying-fox roost under section 88C of the NC Act* (DES 2021) has recently been released and is currently in consultation. It is our understanding that the Pinaroo Park Flying-fox Management Plan (the Plan) aligns with this roost policy, however amendments can be made to the Plan in consultation with DESI if required.

A 'flying-fox roost' is defined under the NC Act as 'a tree or other place where flying-foxes congregate from time to time for breeding or rearing their young'.

Council 'as-of-right' management

Under the NC Act, local governments have an 'as-of-right' authority under the NC Act to manage flying-fox roosts in mapped UFFMAs, without the requirement for a permit, in accordance with the Roost Management COP (DES 2020a).

Councils must however still notify DESI of the planned management. Notification is by means of a completed 'flying-fox management notification form' from DESI website submitted at least two business days prior to commencing any management actions, unless an authorised person from DESI provides written advice that these actions can commence earlier. Local governments may also choose to, with the relevant landholder's permission, exercise their 'as-of-right' authority on private land. Notification is valid for all notified management actions within a four-week timeframe.

The *Flying-fox Roost Management Guideline* (DES 2020c) has also been developed to provide local government with additional information that may assist decision making and management of flying-fox roosts. Councils are required to apply for a FFRMP to manage flying-fox roosts outside an UFFMA, or for management actions not specified in the Roost Management COP. It must be noted that this 'as-of-right' authority does not oblige Council to manage flying-fox roosts, and does not authorise management under other relevant sections of the NC Act or other legislation (such as the VM Act).

Anyone other than local government is required to apply to DESI for a FFRMP for any management directed at roosting flying-foxes, or likely to disturb roosting flying-foxes. Certain low impact activities (e.g. mowing, minor tree trimming) do not require approval if undertaken in accordance with the Low Impact Code (DES 2020b).

Flying-fox roost management permits

Councils wishing to manage flying-fox roosts located outside an UFFMA or to conduct flying-fox management activities that are not Code-compliant, must apply to DESI for a FFRMP. Under the Nature Conservation (Animals) Regulation 2020, a FFRMP may only be approved for management of a flying-fox roost where its resident flying-foxes are causing or may cause damage to property; or represent a threat or potential threat to human health or wellbeing. The Roost Management COP may generally also apply where such a requirement is stated on the FFRMP. Such a permit is valid for a period of one year, or up to three with a DESI-approved flying-fox management plan.

Anyone other than local government is required to apply for an FFRMP to conduct flying-fox roost management activities.

Low impact roost management

All landholders, private or public, can undertake low impact activities such as mulching, mowing and weeding near flying-fox roosts, as well as allowing trimming of up to 10% of the total canopy of the roost without a FFRMP if it is done in accordance with the Low Impact COP (DES 2020b). This authorisation is provided these activities not being undertaken with the intention of destroying the roost, or disturbing or driving away the flying-foxes.

Flying-fox management statements and planning

Council has a SoMI to articulate the approach that Council will take to the management of flying-fox roosts in the Noosa region. Local councils may also opt to develop a flying-fox management plan for the whole of their LGA. If the flying-fox management plan is approved by DESI, the local council can be granted three years' approval to manage flying-foxes outside their UFFMAs under an FFRMP.

The *Flying-fox roost management guideline* was developed to provide local councils and other entities wishing to manage flying-fox roosts with additional information that may assist their decision-making, including developing SoMIs and flying-fox management plans.

Vegetation under the *NC Act 1992*

All plants native to Australia are protected under the NC Act. Prior to any clearing of protected plants, a person must refer to the flora survey trigger map to determine if the clearing is within a high-risk area.

- in a high-risk area, a flora survey must be undertaken and a clearing permit may be required for clearing endangered, vulnerable and near threatened (EVNT) plants and their supporting habitat
- if a flora survey identifies that EVNT plants are not present or can be avoided by 100 m, the clearing activity may be exempt from a permit. An exempt clearing notification form is required
- in an area other than a high-risk area, a clearing permit is only required where a person is, or becomes, aware that EVNT plants are present
- clearing of least concern plants will be exempt from requiring a clearing permit within a low-risk area.

Vegetation under the *Fisheries Act 1994*

All marine plants, including mangroves, seagrass, salt couch, algae, samphire vegetation and adjacent plants (e.g. melaleuca and casuarina), are protected under Queensland law through provisions of the *Fisheries Act 1994* (Fisheries Act). Approval must be gained from Fisheries Queensland to destroy, damage, or disturb any marine plant. Under the Fisheries Act, a 'marine plant' includes:

a) a plant (a 'tidal plant') that usually grows on, or adjacent to, tidal land, whether it is living or dead, standing or fallen;
   - The Fisheries Act does not define 'adjacent' as it relates to marine plants. In the absence of a definition, the Fish Habitat Management Operational Policy describes the application of 'adjacent' in terms of when a marine plant development permit application would be required for disturbance of plants in or adjacent to the tidal zone.

b) the material of a tidal plant, or other plant material on tidal land;

c) a plant, or material of a plant, prescribed under a regulation or management plan to be a marine plant.

Vegetation Management Act 1999

The clearing of native vegetation in Queensland is regulated by the VM Act, the *Sustainable Planning Act 2009* and associated policies and codes.

The type of clearing activity allowed, and how it is regulated, depends on:

- the type of vegetation (as indicated on the regulated vegetation management map and supporting maps)
- the tenure of the land (e.g. freehold or Indigenous land)
- the location, extent and purpose of the proposed clearing
- the applicant proposing to do the clearing (e.g. state government body, landholder).

Depending on these factors, clearing activities will either:

- be exempt from any approval or notification process
- require notification and adherence to a self-assessable code
- require notification and adherence to an area management plan
- require a development approval.

VM Act exemptions allow native vegetation to be cleared for a range of routine property management activities without the need for a development approval or notification. A number of VM Act exemptions may apply to clearing vegetation that is flying-fox roosting or foraging habitat. However, specific advice should be obtained from Department of Resources for each proposed vegetation clearing activity.

No explicit VM Act exemptions for clearing flying-fox roosting or foraging vegetation were in place at the time of writing this Plan.

Animal Care and Protection Act 2001

The ACP Act provides for animal welfare. The ACP Act is administered by Biosecurity Queensland within the Department of Agriculture and Fisheries. The ACP Act applies to all living vertebrate animals, including wildlife. To comply with the ACP Act flying-fox management actions must not cause mental or physical suffering, pain or distress.

Civil Aviation Act 1998

The *Civil Aviation Act 1998* establishes Australia's Civil Aviation Safety Authority functions in relation to civil aviation, with particular emphasis on safety. Civil Aviation Safety Regulations 1998 Part 139 contains specific requirements for wildlife hazard management.

Appendix 2 Potential management options

Management option	Brief description	Suitability for Pinaroo Park
Flying-fox roost monitoring	Regular monitoring is important to understand trends of roost extent, population numbers, species present, time of occupation on a seasonal basis and breeding status of flying-foxes. Monitoring is also important to maintain up to date knowledge of impacts experienced at the roost (i.e. noise, odour, faecal drop, vegetation damage etc.). Monitoring is important to inform appropriate management actions, and to assess the efficacy of implemented management actions. Monitoring should ideally be undertaken monthly, however during periods of influx, more regular monitoring (i.e. weekly or fortnightly) should be considered.	Appraisal: Adopt. Council should continue to undertake regular monitoring. This allows Council to maintain current knowledge of the site and determine what (if any) management actions may be appropriate with consideration to flying-fox numbers and extent.
Education and awareness programs	This option involves comprehensive and targeted flying-fox education and awareness program to provide accurate information to the local community about flying-foxes including information about managing impacts and alleviating concern about health and safety issues associated with flying-foxes, options available to reduce impacts from roosting and foraging flying-foxes, and information about flying-fox numbers and flying-fox behaviour at the roost. Noosa Council has a history of managing flying-foxes through education and community engagement to foster awareness and understanding.	Appraisal: Adopt. Collecting and providing information should always be the first response to community concerns to alleviate concerns without the need to actively manage flying-foxes or their habitat. Education options should include installation of educational signage in the Park, maintaining up to date ecology and human/animal health information on Council website, investigating implementing a wider community-based education program to alleviate unnecessary fears, and foster awareness and understanding.
Property modification	Property-level impact mitigation is one of the most effective ways to reduce amenity impacts to residents living adjacent to a flying-fox roost. Examples of property modifications include vehicle covers, carports, clothesline covers, clothes dryers, pool/spa covers, shade cloths, high-pressure water cleaners, air conditioners, fragrance dispensers or deodorisers, double-glazing of windows, sound-proof curtains, door seals, screen planting, tree netting, and lighting (to discourage flying-foxes). Opportunities for funding assistance (e.g. subsidy programs – see below) may be available for management activities that reduce the need to actively manage a roost.	Appraisal: Adopt. Property modifications could help alleviate impacts and conflict experienced at the property level. Various property modifications can help alleviate impacts such as noise, smell, and faecal mess which are some of the highest concerns at this site.
Subsidy program - property modification / item	Providing subsidies to property owners for property modifications can be used to manage the impacts of the flying-foxes. Examples of property modification subsidies are listed above. Providing subsidies to install infrastructure may improve the value of the property, which may also offset concerns regarding perceived or actual property value or rental return losses. Focusing funds towards manipulating the existing built environment also reduces the need for modification and removal of vegetation.	Appraisal: Adopt. Providing financial assistance to private landholders to implement property modifications can often make property

Management option	Brief description	Suitability for Pinaroo Park
		modification more financially viable and can help increase tolerance for living next to a flying-fox roost. Council should continue providing subsidies as part of the Flying-fox Subsidy Program to eligible applicants to assist in partial funding of property modification items.
Subsidy program - services	This management option involves providing property owners with a subsidy to help manage impacts on the property and lifestyle of residents. The types of services that could be subsidised include clothes washing, cleaning outside areas and property, solar panel cleaning, car washing, removing exotic trees, or contributing to water/electricity bills. Service subsidies may encourage tolerance of living near a roost, promote conservation of flying-foxes, can be undertaken quickly, will not impact on the roost site, and would reduce the need for property modification.	Appraisal: Adopt. Council should continue providing subsidies as part of the Flying-fox Subsidy Program to eligible applicants to assist in partial funding of services.
Routine roost maintenance and operational activities	All persons are authorised to undertake low impact activities at roosts in accordance with the Low Impact COP (DES 2020b). Protocols should be developed for carrying out operations that may disturb flying-foxes, which can result in excess roost noise and risk flying-fox pup mortality. Such protocols may include limiting the use of disturbing activities to certain seasons or times of the day, as is adopted by Council.	Appraisal: Adopt. Continuing to undertake maintenance at the Park in a way that minimises disturbance to flying-foxes can help limit impacts to nearby residents i.e. contractors are mindful when undertaking maintenance work to limit disturbance. Council to maintain vegetation in fire trail (see Figure 3) to ensure minimal vegetation overhanging property boundaries will reduce impacts by provided an increased buffer between roost vegetation and property boundaries. Managing vegetation on private land in accordance with the Low Impact COP and Councils tree management policy will reduce the likelihood of flying-foxes roosting in backyards.
Roost habitat improvement	This management options involves restoring and/or facilitating the growth of roosting vegetation within the roost in lower conflict areas (i.e. areas not directly adjacent to residential dwellings, park facilities, businesses or other areas for potential conflict). This is a longer-term option, however once vegetation is matured and suitable for roosting, this can encourage flying-foxes to roost in a lower conflict area, providing a larger buffer to higher conflict areas.	Appraisal: Adopt. Council should facilitate planting of roosting vegetation (e.g. *Eucalyptus tereticornis, Melaleuca quinquenervia*) in lower conflict areas of the Park (see Figure 3) to encourage flying-foxes to roost towards the lower conflict

Management option	Brief description	Suitability for Pinaroo Park
		areas of the Park. Council should also consider removal of weeds such as Cocos palm (*Syagrus romanzoffiana*) and tobacco bush and consider replacing with native palm species (see Figure 3).
Alternative habitat creation	This management option involves revegetating and managing land to create alternative flying-fox roosting habitat through improving and extending existing low-conflict roosts or developing new roosting habitat in areas away from human settlement. Potential habitat mapping using roost preferences and suitable land tenure can assist in initial alternative site selection. A feasibility study would then be required prior to site designation to assess likelihood of success and determine the warranted level of resource allocated to habitat improvement.	Appraisal: Investigate. Alternative habitat improvement may provide an alternative roost site, however it must be noted that it is unlikely flying-foxes will begin roosting in an improved area and vacate the Park, given it is a long-term site. It could however increase the available habitat in the surrounding area in a lower conflict site that can provide them the opportunity to roost at. Council should undertake a feasibility study to determine the likelihood of success, determine if there are alternative suitable sites, and whether Council has the resources to undertake habitat improvement in lower conflict areas.
Provision of artificial roosting habitat	Artificial structures can be constructed to augment roosting habitat in current roost sites or to provide new roosting habitat. Trials using suspended ropes have had limited success as flying-foxes only used the structures that were very close to the available natural roosting habitat. It is thought that the structure of the vegetation below and around the ropes is important.	Appraisal: Not suitable. This option is not considered suitable as there is limited evidence that creating artificial roosting habitat is successful in attracting flying-foxes to roost on the artificial structures if created in lower conflict areas.
Protocols to manage incidents	This management option involves implementing protocols for managing incidents or situations specific to particular roosts. Such protocols may include monitoring at sites within the vicinity of aged care or childcare facilities, management of compatible uses such as dog walking or sites susceptible to heat stress incidents (when the roost is subjected to extremely high temperatures leading to flying-foxes changing their behaviour and/or dying).	Appraisal: Adopt. Council should respond to HSEs as per the Flying-fox Heat Event Response Guideline (DES 2023) or consider developing a region-specific HSE document. Council should engage with wildlife carers and nearby residents and park users, particularly during potential mass mortality events such as HSEs and post-storm recovery.

Management option	Brief description	Suitability for Pinaroo Park
Research	Participating in research is important to improve knowledge of flying-fox ecology to address the large gaps in our knowledge about flying-fox habits and behaviours and why they choose certain sites for roosting. Research should also aim to investigate the efficacy of new, innovative management technique, such as odour-neutralising technology. Further research and knowledge sharing at local, regional, and national levels will enhance our understanding and management of flying-fox roosts.	Appraisal: Adopt. New research should be reviewed at least annually and incorporated into flying-fox management where appropriate. Research can be used to identify native flowering events in the area and how this can impact flying-fox movements and roosting preferences. Council should continue liaising with other SEQ Councils to share ideas and discuss efficacy of trialled management options.
Appropriate land-use planning	Land-use planning should be used to ensure adequate distances are maintained between future residential developments and existing or historical flying-fox roosts. While this management option will not assist in the resolution of existing conflict, it is critical to avoiding future conflict. Incorporating roost locations into the planning scheme and property documentation would also assist avoiding future conflict.	Appraisal: Adopt. Incorporate planning controls where possible to avoid new development applications being built on/near known roosts / suitable roosting habitat. This may include requirements for buffers, noise attenuating building materials, covered car parks and clotheslines, bedrooms and outdoor areas positioned furthest from the roost, and lawn or gardens over hard surfaces to reduce cleaning.
Property acquisition	Property acquisition may be considered if negative impacts cannot be sufficiently mitigated using other measures. This option will generally be cost prohibitive but may be considered.	Appraisal: Not suitable. This option would likely be cost prohibitive and unlikely to be acceptable to the community, therefore is not considered suitable for this site.
Fire break as a flying-fox buffer	Maintaining a fire break can provide a buffer in between roosting vegetation and surrounding dwellings/buildings/properties. The width of the fire break is highly dependent on the rating of the area and the risk of a bushfire.	Appraisal: Adopt. Council should continue to maintain the fire trail as required and in line with the fire rating of the Park. There are currently no exemptions in legislation to clear vegetation specifically for flying-fox management. Given the Park is core koala habitat and is a high-risk area for protected plants, gaining an exemption to create a flying-fox buffer is highly unlikely.
Buffers without vegetation	Permanent or semi-permanent deterrents can be used to make buffer areas unattractive to flying-foxes for roosting, without the need for vegetation removal. This is often an attractive option where vegetation has high	Appraisal: Investigate.

Management option	Brief description	Suitability for Pinaroo Park
removal	ecological or amenity value. Buffer options include visual deterrents, noise emitters, smell deterrents, canopy-mounted sprinklers, and screening plants. Sprinklers are the most commonly implemented and effective of these options, however, are not always suitable for every site.	Council should investigate the option of permanent or semi-permanent deterrents such as noise or visual deterrents with consideration to current research, Council funding and resident consultation.
Buffers through vegetation removal	Vegetation removal can be used to create a buffer between residential properties and roosting flying-foxes to reduce noise, smell, and visual impacts. Vegetation removal aims to alter the area of the buffer habitat sufficiently so that it is no longer suitable to roost in. The amount required to be removed varies between sites and roosts, ranging from some weed removal to removal of most of the canopy vegetation.	Appraisal: Not suitable. Creating a buffer larger than what is already established in the Park as a fire trail is likely not feasible given the legislative protection of core koala habitat, and there are no legislative exemptions for vegetation removal to create a flying-fox buffer.
Noise attenuation fencing	Noise attenuation can be installed adjacent to residential properties to reduce noise and potentially odour where the roost is close to residents. Although expensive to install, this option could negate the need for habitat modification, maintaining the ecological values of the site, and may be more cost-effective than ongoing management. Perspex fencing could be investigated to assist fence amenity.	Appraisal: Not suitable. Due to the proximity of tall roosting vegetation to backyards, noise attenuating fencing would have to be as tall as the trees adjacent to the property boundaries, which is not feasible.
Early intervention before a new roost is established	This management option involves monitoring potentially suitable areas and investigating community feedback for signs of flying-foxes beginning to roost (in the daylight hours) and then managing habitat (e.g. weed removal) or otherwise deterring a permanent roost from establishing.	Appraisal: Not suitable. Not applicable for this site, as this site is an established roost.
Nudging using low intensity disturbance	Noise and other low intensity active disturbance restricted to certain areas of the roost can be used to encourage flying-foxes away from high conflict areas. This technique aims to actively 'nudge' flying-foxes from one area to another, while allowing them to remain at the roost site. Unless the area of the roost is very large, nudging should not be done early in the morning as this may lead to inadvertent dispersal of flying-foxes from the entire roost site. Disturbance during the day should be limited in frequency and duration (e.g. up to four times per day for up to 10 minutes each) to avoid welfare impacts. As with dispersal, it is also critical to avoid periods when dependent young are present (as identified by a flying-fox expert).	Appraisal: Not suitable. Nudging is not currently considered suitable at this site. However, nudging may be considered in some circumstances, such as if flying-foxes are roosting in backyard/s and there is space available in the remainder to the Park for them to relocate to. Nudging should be strategic and should not be done on a large scale, as this could nudge flying-foxes into other conflict areas or cause inadvertent dispersal.
Passive dispersal	Passive dispersal involves the removal of some or all the roosting vegetation at a given roost site, with the intention to decommission the roost. To be successful, this often involves removal of a significant amount of	Appraisal: Not suitable. Given the risk of the roost splintering into other

Management option	Brief description	Suitability for Pinaroo Park
through vegetation removal	vegetation (often >70%). This is often highly expensive, results in a diminishing of the natural and ecological values and is often unacceptable to the community. Passive dispersal is likely less stressful on flying-foxes if done in a staged way compared to active dispersal, but the risks as per active dispersal with additional impacts of losing native vegetation.	high conflict areas, and other ecological and amenity values (e.g. core koala habitat), passive dispersal is not suitable.
Active dispersal through disturbance	Multiple studies show that dispersal is rarely successful, especially without significant vegetation removal (not suitable for this site) or high levels of ongoing effort and significant expenditure (e.g. several years of daily works and over $1M for Sydney Botanic Gardens). Flying-foxes will almost always continue to roost in the area (generally within 600 m, Roberts and Eby 2013), and often splinter into several locations which may result in more widespread impacts.	Appraisal: Not suitable. Active dispersal is very resource intensive and costly, with highly unpredictable outcomes that can often worsen human-wildlife conflict (as demonstrated by previous dispersals across the state). Dispersals are very rarely effective long-term (as demonstrated with previous attempts across the state) and can cause splintering of roosts into other high conflict locations. Active dispersal often requires months of sustained dispersal efforts early in the morning or late at night and can cause increase disturbance to nearby residents. The surrounding community is also unlikely to support this action. For these reasons, active dispersal is not supported at this site.

Revision History

Revision No.	Revision date	Details	Prepared by	Reviewed by	Approved by
00	13/09/2024	Pinaroo Park Flying-fox Management Plan 2024 DRAFT	Tegan Dinsdale, Fauna Ecologist	Jess Baglin, Senior Environmental Scientist	Jess Bracks, Principal Wildlife Biologist
01	14/10/2024	Pinaroo Park Flying-fox Management Plan 2024 R1 DRAFT	Tegan Dinsdale, Fauna Ecologist	Jess Baglin, Senior Environmental Scientist	Heather Richards, Senior Environmental Scientist

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