

**Eurobodalla Flying-fox Management Plan
Planned Management Actions 2023 and onwards**

Strategy	Action	Details	Location	Timeframe	Evaluation measure
Level 1 Management					
Community engagement and awareness programs	<ul style="list-style-type: none"> • Ensure clear and up to date information available regarding legislation and human and animal health 	<ul style="list-style-type: none"> • Follow a Communications (Comms) Strategy for education and awareness, and review for future management actions. • Communications Strategy is revised five-yearly (last revision 2022). • Ensure the community is aware of legislation around flying-foxes, and that management affecting flying-foxes is illegal without relevant approvals. • Education materials to mitigate risk of disease includes up to date information on simple measures that the community can implement. • Education materials and updating of platforms (Council website, handouts, signage at camps) are developed, updated and relevant. • Council will liaise with relevant government agencies (eg, NSW Health) to ensure information is available to the community. • Continue to engage with the community to inform education and engagement programs. • Run community stakeholder survey to assess level of understanding and engagement to compare with results of previous survey. 	<ul style="list-style-type: none"> • Eurobodalla wide 	<ul style="list-style-type: none"> • Ongoing Comms Strategy continues to be implemented 	<ul style="list-style-type: none"> • Education program: community informed and engaged.

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	<ul style="list-style-type: none"> Keep community informed of flying-fox numbers, monitoring trials and upcoming management. 	<ul style="list-style-type: none"> Engagement platforms including Facebook, websites, media release and digital/hard copy mail utilised to maintain awareness and keep the community updated and informed. 	<ul style="list-style-type: none"> Eurobodalla wide 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Up to date information readily available for the community.
	<ul style="list-style-type: none"> Develop education material regarding odour masking plants 	<ul style="list-style-type: none"> Potentially suitable native species, which are unlikely to attract flying-foxes, are listed in Appendix 8. Investigated feasibility (ie, plant a trial hedge somewhere) for a more realistic indication of usefulness, and to ensure we are not communicating a falsehood, considering: <ul style="list-style-type: none"> Is the fragrance strong enough to mask the odour at the time most needed? How long does the fragrance last? Ensure the flowers/fruits of suggested plants do not attract foraging flying-foxes. Consideration of full growth parameters and maintenance required for hedging. Plant potential to aggravate allergies. Flammability. Approximation of cost. If successful, develop educational materials to distribute in suitable circumstances. 	<ul style="list-style-type: none"> All known camps Eurobodalla wide 	<ul style="list-style-type: none"> Investigate feasibility – short term 	<ul style="list-style-type: none"> List of locally suitable odour masking plants available for the community.
	<ul style="list-style-type: none"> Provide ongoing community 	<ul style="list-style-type: none"> Allocate annual budget for a dedicated Council Flying-fox Officer. 	<ul style="list-style-type: none"> Eurobodalla wide 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Part-time Council Flying-fox Officer role continued

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	engagement and support	<ul style="list-style-type: none"> In 2022, some adaptation of roles will occur to encompass other NRM activities during periods of low flying-fox populations. 			
Impact mitigation	<ul style="list-style-type: none"> Investigate property modification/ service subsidies 	<ul style="list-style-type: none"> Investigate distance-scaled subsidies program for communities affected by flying-fox camps. Subsidy programs should be evaluated and reviewed annually, or as necessary to ensure feasibility/research updates and maintain a list of successful programs so funding may be applied for when opportunities arise. Research (including in Appendix 10) shows residents favour long-term solutions. Continue Cocos Palm Removal Project if funding can be accessed. Continue input to subsidies data sheet. Record resident feedback - include in any survey to assist in evaluation. 	<ul style="list-style-type: none"> All known camps 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Subsidies program investigated and implemented if feasible. Data showing a strong case for the continuation of successful programs (seek further funding).
	<ul style="list-style-type: none"> Maintain buffers where required on Council-managed land 	<ul style="list-style-type: none"> Buffers through vegetation management on Council-managed lands to be maintained for affected residents (initial works completed under licence). Costs of buffer maintenance will be resourced by Parks and Gardens' budget in 2022. 	<ul style="list-style-type: none"> Water Gardens Catalina 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Buffers maintained when flying-foxes are absent.
	<ul style="list-style-type: none"> Camp monitoring 	<ul style="list-style-type: none"> Ensure regular (at least quarterly) monitoring of all active flying-fox camps within the Eurobodalla as part of the National Flying-fox Monitoring Program (NFFMP), including records of camp spatial extents. 	<ul style="list-style-type: none"> All known camps 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Regular monitoring undertaken at all Eurobodalla camps as part of the NFFMP managed by CSIRO.

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					<ul style="list-style-type: none"> Local counts undertaken by Council Flying-fox Officer and used to inform management.
	<ul style="list-style-type: none"> Trial and refine the decision support tool 	<ul style="list-style-type: none"> Consult with relevant experts and other land managers as required (eg, for camps outside the Eurobodalla) to refine the decision support tool. Seek opportunities to enhance and improve the decision support tool. Currently, the main advice on camp management from State and Federal level threatened species managers is to focus on education and communication. Consider further refining of dispersal level 'trigger point' detail such as: above a certain population; sustained for a period of how many weeks; combined with number of complaints; seriousness of complaints; frequency of events; potential of funding; proximity to sensitive receptors. Refining of mitigation of any new urban camps - are there any actions we can do to mitigate formation of a new camp? Follow up on effectiveness of trials (in NSW and QLD) to move camps from town centres by creating an alternative attractive camp space nearby. 	<ul style="list-style-type: none"> Catalina Water Gardens Occupied camps outside the Eurobodalla 	<ul style="list-style-type: none"> Underway 	<ul style="list-style-type: none"> Baseline monitoring locations and stakeholders identified. Support tool informed by monitoring data and refined as required.
	<ul style="list-style-type: none"> Liaise with relevant authorities to provide advice and further research 	<ul style="list-style-type: none"> Consult with and seek further information from NSW and Commonwealth Governments on topics outlined in Section 7.1. 	<ul style="list-style-type: none"> Eurobodalla wide 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Updates on relevant topics shared with the community and incorporated into management, as relevant.

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		<ul style="list-style-type: none"> Update and review topics in Section 7.1 in next EFFMP review. Complaints throughout 2016– 2022 during high flying-fox populations reveal some people believe respiratory conditions are exacerbated by high numbers of flying-foxes – potential to seed some research on this (universities). 			
Impact mitigation and conservation	<ul style="list-style-type: none"> Notify Moruya Airport 	<ul style="list-style-type: none"> Moruya Airport is aware of the Moruya camps and manages strike risk. Council notifies DPE and they ensure airport managers are aware of any changes that may change the flying-fox strike hazard. Airport managers are on the Council camp monitoring report email list, so they are aware of relevant camp population changes. 	<ul style="list-style-type: none"> All camps within 13km 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> Airport managers notified by the NSW DPE
Avoiding future conflict	<ul style="list-style-type: none"> Appropriate land-use planning 	<ul style="list-style-type: none"> Measures to avoid future conflict between camps and the community will be considered when assessing development applications. Identify potential buffers areas to zone as flying-fox management areas to mitigate impacts to residents. Consider habitat protection measures (zoning, Biodiversity Agreements) for flying-fox camps. Investigate measures that could be integrated to mitigate (known) camp impacts during building or renovations process: zoned information packages for residents. 	<ul style="list-style-type: none"> All known camps and Eurobodalla wide 	<ul style="list-style-type: none"> Long-term 	<ul style="list-style-type: none"> Flying-fox camp management areas incorporated into planning instruments.

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		<ul style="list-style-type: none"> • Comment from Council Planning: Council can only enforce design requirements that are in a policy, Code of Practice (CoP), planning legislation etc. • Discuss with Strategic Planning and see if mitigation measures can be incorporated via a Development Control Plan or a CoP where they can be enforced. 			
	<ul style="list-style-type: none"> • Participate in flying-fox monitoring and research 	<ul style="list-style-type: none"> • Support research, particularly projects which will assist in understanding local flying-fox movements and ways to mitigate impacts on the community. • See Section 7.1 for priority research projects to assist flying-fox management in Eurobodalla. • Revise Section 7.1 in the next update of EFFMP to remove what has been done, is not relevant, and any new focus. 	<ul style="list-style-type: none"> • Eurobodalla wide 	<ul style="list-style-type: none"> • Ongoing 	<ul style="list-style-type: none"> • Council up to date on contemporary research and relevant outcomes incorporated into the management framework.
Avoiding future conflict, conservation	<ul style="list-style-type: none"> • Protocols to management incidents 	<ul style="list-style-type: none"> • Continue to build on current protocols (Appendix 12 and 13). • Collaborate with wildlife rescue and care organisations to monitor potential heat stress events during predicted hot weather. • Encourage wildlife groups to adopt industry recognised best practices during heat stress events (Appendix 14). • The Council Heat Stress Plan should be reviewed and updated before every summer, as this is a field where there is new research occurring, so latest advice should be integrated. 	<ul style="list-style-type: none"> • All known camps 	<ul style="list-style-type: none"> • Every summer 	<ul style="list-style-type: none"> • Heat Stress Event Response Plan is updated and reviewed before each summer.

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		<ul style="list-style-type: none"> Participants and locations need reviewing/updating for plan to remain relevant in an emergency. Contact DPE for their input. They were developing a generic best practice manual (in 2021). 			
	<ul style="list-style-type: none"> Consult with energy and telecommunications providers, as required 	<ul style="list-style-type: none"> Council will continue to consult with energy and telecommunication providers when required to implement measures as required to minimise the potential for flying-foxes to strike infrastructure. Usually only an issue when there are many (>60,000) flying-foxes in the urban camps. Maintain relevant contacts for energy providers and procedures for when this action needs enactment. Communicate to the public, information on what to do should you find an injured or dead flying-fox. Liaison with energy/telecommunications providers and wildlife carers necessary for informed evaluation. 	<ul style="list-style-type: none"> All known camps 	<ul style="list-style-type: none"> Ongoing – when necessary 	<ul style="list-style-type: none"> Flying-fox mortality and associated interruptions to power/mobile reception maintained at a low level
Conservation	<ul style="list-style-type: none"> Undertake routine camp management with consideration to flying-fox habitat and welfare. 	<ul style="list-style-type: none"> Ensure all management actions at camps is considerate of flying-fox habitat and welfare requirements (including mid-storey for protection during extreme weather, weed treatment and removal, and appropriate mowing regimes when flightless young are present). Monitor for this when doing routine camp monitoring. Toolbox talks with staff/contractors who work near the camps should be 	<ul style="list-style-type: none"> All known camps 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> All camps to have mid-storey vegetation for protection during extreme weather and flying-fox welfare is maintained during works.

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		undertaken periodically to refresh protocol content (seasonally/every two years/on change of staff)?			
Level 2 Management					
Impact mitigation	<ul style="list-style-type: none"> • Buffers through vegetation management (trimming/removal) 	<ul style="list-style-type: none"> • Liaise with landholders regarding the potential for buffers on Council-managed land, or support in obtaining approval for activities on private land. • Arborist advice for tree trimming on private land. • Requires one-off funding source to implement formation of new buffer zones. • Requires ongoing funding source to manage weeds, post-clearing. 	<ul style="list-style-type: none"> • Any camp creating conflict 	<ul style="list-style-type: none"> • As soon as possible and then determined by decision support framework. 	<ul style="list-style-type: none"> • Advice provided to affected residents. • Existing buffers maintained.
	<ul style="list-style-type: none"> • Canopy mounted sprinklers 	<ul style="list-style-type: none"> • Trial of canopy-mounted sprinklers finished at the Water Gardens. • Not feasible or necessary at other camp locations; requires funds to set up and implemented, and only appropriate at certain times of the flying-fox season. • Maintain action as a useful tool to give residents some relief at the beginning of the season, and when the camp extends beyond the core camp area. • Requires funding to maintain regular presence of staff in the early mornings and maintenance of sprinkler system. • Only able to be utilised at certain times of the season, as per flying-fox protocols. • Once the camp has already spilled beyond the reach of the sprinklers, not able to be used with success. Pre-empting that point is not very easily done. 	<ul style="list-style-type: none"> • Water Gardens 	<ul style="list-style-type: none"> • Ongoing, when necessary 	<ul style="list-style-type: none"> • Continue use of sprinklers at Water Gardens as required and when feasible.

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	<ul style="list-style-type: none"> Odour neutralising trial (misting systems), such as those used at landfills and abattoirs, allow for the control of large or diffuse odours. Odour management systems work by diluting an active ingredient then either misting or vaporising the solution into the air to reach the nuisance (odour). 	<ul style="list-style-type: none"> Continue investigating odour neutralising system. Council worked with consultants Ecosure to run a trial in a Sunshine Coast Council (camp) over 2020/2021. Although the trial was completed, results were ultimately not definitive with regards to effectiveness odour reduction of residents near the camp. Council owns the odour neutralising machine but have so far not used it in Council camps. Running the above trial has been approved (DPE/ethics/scientific licensing) and could be run in 2022/23 if flying-fox populations/resident participation permits. If odour neutralisation is feasible (according to the second trial at Council camp), work with odour neutralising company to explore development of a smaller, more individualised machine. If feasible, develop a plan for use of the machine in Eurobodalla camps to help provide odour relief around Council camps. 	<ul style="list-style-type: none"> Water Gardens 	<ul style="list-style-type: none"> Medium-term 	<ul style="list-style-type: none"> Trial undertaken at Council camp. If feasible, independent odour neutralising systems available.
Conservation	<ul style="list-style-type: none"> Consider the values of a site prior to undertaking Level 2 or Level 3 management. 	<ul style="list-style-type: none"> An up to date assessment of all values of a site (cultural, ecological and amenity) will be undertaken prior to any camp management, and results will be used to inform appropriate management options. It would be best not to be doing this at the last minute should, for example, a dispersal be decided to action. 	<ul style="list-style-type: none"> All known camps 	<ul style="list-style-type: none"> Prior to any Level 2 or Level 3 management action 	<ul style="list-style-type: none"> Cultural, ecological and amenity values of camp sites are protected.

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Level 3 Management					
Impact mitigation	<ul style="list-style-type: none"> Nudging 	<ul style="list-style-type: none"> Nudging may be considered, as informed by the decision support tool. Level 3 management options require State, and potentially Commonwealth, approval and will be dependent on sufficient Council resources being available. 	<ul style="list-style-type: none"> Eurobodalla wide 	<ul style="list-style-type: none"> As required 	<ul style="list-style-type: none"> Nudging assessed if required
	<ul style="list-style-type: none"> Dispersal 	<ul style="list-style-type: none"> Dispersal may be considered, as informed by the decision support tool. Early intervention dispersal may also be considered if a new camp appears to be forming in an undesirable location. Level 3 management options require State, and potentially Commonwealth, approval and will be dependent on sufficient Council resources being available. 	<ul style="list-style-type: none"> Eurobodalla wide 	<ul style="list-style-type: none"> As required 	<ul style="list-style-type: none"> Dispersal assessed if required