

I Management directions and purposes

I.1 Management directions

Indooroopilly Island Conservation Park is home to one of Brisbane's most important flying fox colonies. The park covers an area of about 6.34 hectares and is situated on the Brisbane River at Longpocket, adjacent to Indooroopilly Golf Course, about 7 kilometres west of the Brisbane GPO.

Management will aim to protect the park's resident flying fox colony by implementing weed control and site rehabilitation programs and by developing interpretive signage for the site. Key interest groups such as the Brisbane City Council, the neighbouring Indooroopilly Golf Club and flying fox researchers from University of Queensland will be encouraged to participate in the park's management.

I.2 Purposes

The major purposes of management will be to ensure that:

- the flying fox colony and habitat is protected;
- fire and weed management maintains the diversity of natural vegetation communities;
- Brisbane City Council and community groups are involved in the management of the park including special projects such as site rehabilitation and weed control;
- opportunities are provided for scientific research and environmental education; and
- the Queensland Parks and Wildlife Service (QPWS) Good Neighbour Policy is implemented.

2 Basis for Management

2.1 Regional and management context

Indooroopilly Island Conservation Park is dedicated under the *Nature Conservation Act 1992* and must be managed under s 20 of the Act to:

- conserve and present the area's cultural and natural resources and their values,
- provide for the permanent conservation of the area's natural condition to the greatest possible extent, and;

- ensure that any commercial use of the area's natural resources, including fishing and grazing is ecologically sustainable.

The requirements of other legislation will be met where necessary.

Indooroopilly Island Conservation Park was gazetted as a conservation park in 1995 and protects littoral mangrove vegetation and a small section of open forest with forest red gum *Eucalyptus tereticornis*. The park will be managed to conserve the flying fox campsite situated on and near Indooroopilly Island. The area is used by three of the four species of flying fox on mainland Australia, and is recognised as one of five significant maternity campsites in the Brisbane Region. It is therefore important to flying fox survival. Flying fox numbers are decreasing as their natural habitat is cleared for agriculture and urban development.

2.2 Values of Indooroopilly Island Conservation Park

Plants and animals

Siltation of the Brisbane River since the 1974 floods has led to the linkage of Indooroopilly Island Conservation Park to the river bank at low tide. The dominant mangrove species on the park are the grey mangrove *Avicennia marina* and the river mangrove *Aegiceras corniculatum*. Mangroves protect the site from erosion and provide important nursery habitat for several estuarine fish species. A small area is dominated by forest red gum *Eucalyptus tereticornis*. Both the mangroves and forest red gum are used by the flying foxes for roosting. The flying foxes defoliate their roosting trees and this degrades the natural vegetation in the park and surrounding area. Severe weed invasion by a variety of invasive species such as molasses grass and siratro is preventing the canopy trees from regenerating.

Flying foxes roost in trees by day usually in congregations known as camps. Campsites are very important for the survival of the flying fox as this is where they are born, grow, form relationships and learn to survive. The area needs to be large so the flying foxes can choose alternative trees as defoliated roosting trees recover. Indooroopilly Island is known as a 'traditional camp' because the black flying fox

Pteropus alecto and grey headed flying fox *P. Poliocephalus* occupy the site on a permanent basis. Numbers fluctuate between 3000 and 200 000 depending on the availability of flowering eucalypt and melaleuca species. The park is an important breeding site for the black and the grey-headed flying foxes and peak numbers usually coincide with the birth of young between August and December. The little red flying fox *P. Scapulatus* occupies the campsite on a seasonal basis generally between October and March. Their numbers range from 1000 to 100 000 although they do not occupy the campsite every year.

The Indooroopilly Island campsite is one of five maternity campsites in the Brisbane region. The campsite is especially important because it is isolated from the general public due to the buffering effect provided by the golf course. Consequently, the problems associated with flying fox campsites situated close to residential development, including noise, smell and perceived health risks have been minimised. In addition the flying foxes themselves are subject to minimal disturbance. The importance of Indooroopilly Island increases as other flying fox colonies in south-east Queensland are disturbed or destroyed.

Small bird species such as the white browed scrub wren *Sericornis frontalis*, red-backed wren *Malurus melanocephalus* and double-barred finch *Taeniopygia bichenovii* use the park's dense understorey of lantana *Lantana camara* and grass as habitat and for protection from aggressive birds such as the noisy miner *Manorina melanocephala* which is common in the surrounding open areas.

Cultural heritage

The island is a significant site for the Turrbal people. A native title claim which covers Indooroopilly Island Conservation Park has been lodged with the National Native Title Tribunal on behalf of the Turrbal people.

Scenic and aesthetic

At its summer peak the flying fox colony may contain several hundred thousand individuals. The camp is easily viewed from the river by boat with minimal disturbance to the animals. At sunset the bats fly out to commence their nocturnal foraging. The sight of thousands of bats flying into the sky is impressive and familiar to many Brisbane residents.

3 Management strategies

Current situation	Desired outcomes	Proposed policies, guidelines and actions
<p>Native plants</p> <p>The canopy species present on the park include the grey and river mangroves and forest red gum. These species have been denuded by the flying foxes. Regeneration of canopy species is inhibited by a dense ground cover of weeds. Climbing weeds threaten the survival of established tree species.</p>	<p>The biological diversity and integrity of the natural ecosystems are conserved in the long term.</p> <p>Flying fox habitat is protected.</p>	<p>A rehabilitation plan for Indooroopilly Island Conservation Park will be developed. This should incorporate surrounding areas as much as possible. Therefore, it will be prepared in connection with Brisbane City Council, Department of Natural Resources, the Indooroopilly Golf Club, Turrbal people (Native Title claimants), University of Queensland and local community groups. It will focus on the requirements of the flying fox colony and aim at restoring a canopy. It will include:</p> <ul style="list-style-type: none"> • research into the needs of flying foxes and their sensitivity to disturbance; • research into appropriate rehabilitation methods and suitable species for planting; • investigating funding sources for rehabilitation and weed control projects; and • a weed control component.
<p>Native animals</p> <p>Apart from the three species of flying foxes inhabiting the park, a variety of bird species including the brush turkey <i>Alectura lathamii</i>, and snakes such as the carpet python <i>Morelia spilota variegata</i> have been recorded on the park.</p> <p>Local naturalists have compiled a comprehensive bird list for the area including Indooroopilly Island.</p> <p>NatureSearch records are also available for the general area.</p>	<p>Knowledge of the fauna using the park and surrounding habitat is improved.</p> <p>The flying fox colony is protected.</p>	<p>Identify native and introduced fauna species utilising the park.</p> <p>Collate existing research and information on animal species occurring on the park and in the surrounding area.</p> <p>Monitor the flying fox campsite including its movement and the effects of weeds and other disturbances.</p>
<p>Introduced plants and animals</p> <p>Weeds are a major problem on the park. Invasive grasses and other ground covers such as molasses grass, <i>Melinis minutiflora</i> and siratro <i>Macroptilium atropurpureum</i> are preventing native species, including canopy trees, from regenerating.</p> <p>Climbing weeds, including morning glory <i>Ipomoea indica</i> and climbing asparagus fern <i>Protoasparagus plumosus</i>, are weakening and destroying the canopy.</p> <p>Chinese elm <i>Celtis sinensis</i> is dominating the canopy on the river bank and the Indooroopilly Golf Club is to commence an eradication program for this weed.</p>	<p>The impacts of introduced plants and animals on the park's natural biodiversity is minimised.</p>	<p>As part of a long term rehabilitation plan for Indooroopilly Island a weed control strategy will be prepared. It will include:</p> <ul style="list-style-type: none"> • mapping weeds and recommending priorities for control and appropriate control methods; • undertaking weed clearing that minimises erosion, reinfestation and enables natural regeneration; • ensuring that weed control is designed to maximise opportunities for regeneration and recovery of roosting trees. • undertaking any revegetation immediately after weeding to prevent reinfestation; • undertaking weed control at times that cause least disturbance to the flying foxes; • informing people conducting weed control about working around the flying fox camp, especially in relation to the Australian Bat Lyssavirus (ABL); • involving Brisbane City Council, Department of Natural Resources, Indooroopilly Golf Club, the Turrbal people and local community groups in weed management; • initiating a public education campaign for park neighbours and other interest groups on environmental weeds and their threats to natural vegetation; and • reference to the South East Queensland Environmental Weeds Strategy being developed by the Rural Lands Protection Board.
<p>Fire management</p> <p>It is important that rubbish dumping does not become a fire hazard on the conservation park. The build-up of weeds such as molasses grass in the understorey increases the risk of wildfire.</p>	<p>Fire does not threaten the park's native flora and fauna.</p>	<p>Develop a fire management plan for the park which includes:</p> <ul style="list-style-type: none"> • liaising with Brisbane City Council, Indooroopilly Golf Club, Department of Natural Resources and flying fox experts; • ensuring that fire management such as prescribed burning does not threaten the flying fox colony; • locating adequate fire access points around the boundary; • detailing emergency response procedures and methods of early fire detection; • reducing fuel load build-up through rubbish removal and weed control; • notifying the Turrbal people and FAIRA;
<p>Cultural heritage</p> <p>The island is a significant site for the Turrbal people. A native title claim which covers Indooroopilly Island Conservation Park has been lodged with the National Native Title Tribunal on behalf of the Turrbal people.</p>	<p>Any native title rights are not compromised by management actions.</p>	<p>Aboriginal groups or individuals will be provided with opportunities to participate in the management of the park.</p>
<p>Recreation and tourism</p> <p>It is recognised that the flying fox colony may move from the park if disturbed, therefore no recreational facilities such as viewing platforms or boardwalks will be developed. Because access is gained primarily through private property, recreational opportunities are limited. The Wildlife Preservation Society of Queensland periodically conduct Batty Boat Cruises which enable the public to view flying foxes from the Brisbane River. This causes minimal disturbance to the bats.</p>	<p>Recreational and educational activities have minimal impact on the native fauna of the park.</p>	<p>No facilities will be developed on the park. Recreation on the park will not be encouraged. It is noted that interpretive boat cruises are undertaken outside the protected area.</p>
<p>Education, interpretation and research</p> <p>There is no interpretive signage on the park. It is recognised that there is a need for the park location and status to be identified through conservation park signs and for general interpretive signage to be erected. This will enable the public, particularly golfers, to become more aware of the conservation significance of the flying fox colony.</p> <p>Indooroopilly Island Conservation Park is an important flying fox research site for scientists from both the University of Queensland and Department of Primary Industries.</p>	<p>People's understanding and appreciation of the park's values are increased resulting in more sympathetic use of natural areas.</p> <p>Management continues to be assisted by flying fox research.</p>	<p>An interpretation plan will be developed for the park and will include:</p> <ul style="list-style-type: none"> • developing interpretive signage and an information brochure after liaison with Brisbane City Council, the Indooroopilly Golf Club and experts from the University of Queensland. Interpretation will provide information on: <ul style="list-style-type: none"> • the importance of the flying fox colony; • the association between flying foxes and <i>Equine morbillivirus</i> (EMV) and Australian Bat Lyssavirus (ABL); • action to take when finding dead, injured or orphaned flying foxes; and • this information will be included in a brief delivered to any people involved in site rehabilitation on the island; and • installation of conservation park signs. <p>The conservation park continues to be an important site for flying fox research with research causing minimal disturbance to the animals.</p>
<p>Complementary management of adjoining areas</p> <p>The Indooroopilly Golf Course provides a buffer of sympathetic land use between the park and nearby residential development. Members of the club include a number of keen naturalists who actively support the conservation of the flying fox colony and are knowledgeable of the area's native flora and fauna. The club has accessed lists of the area's original indigenous species and is planting these trees along course fairways.</p>	<p>Surrounding land use buffers and complements the conservation values of the park.</p>	<p>Liaise and work closely with the Indooroopilly Golf Club and Brisbane City Council regarding management of Indooroopilly Island and the surrounding area.</p>
<p>Plan implementation and monitoring</p> <p>The park is to be managed primarily to conserve the flying fox colony and associated park habitat. The management plan will be implemented by District staff based at Moggill with assistance from QPWS Regional staff.</p>	<p>The management plan is successfully implemented and desired outcomes achieved.</p>	<p>Develop an implementation schedule for the plan which will consider available staff and resources and prioritise management actions. This will be linked to annual budget allocations. Priorities for management will include:</p> <ul style="list-style-type: none"> • investigation of joint park management approaches with the Brisbane City Council; • liaison with University of Queensland researchers regarding flying fox management; • removal of rubbish from the park and surrounds; • development of interpretive signage; • preparation and implementation of a rehabilitation program which includes weed control ; and • liaison with the Turrbal people, Brisbane City Council, Indooroopilly Golf Club, Department of Natural Resources, University of Queensland and local conservation groups regarding the development of a rehabilitation plan for the park.
<p>References</p> <ol style="list-style-type: none"> 1. Birt, P. (1997) <i>Flying Foxes</i> (information brochure), University of Queensland, Brisbane. 2. Poole, S. et. al. (1996) <i>Wild places of Greater Brisbane</i>, Queensland Museum, Brisbane. 3. Martin, L. (1990) <i>Flying foxes of the Brisbane River</i>, in P. Davie et. al. (eds.) (1990) <i>The Brisbane River - a source-book for the future</i>, Australian Littoral Society Inc. in association with the Queensland Museum, Brisbane. 		<p>Set timeframes to enable monitoring of plan implementation and effectiveness of management strategies.</p> <p>Review the management plan within ten years of approval in accordance with s125 of the <i>Nature Conservation Act 1992</i>.</p>