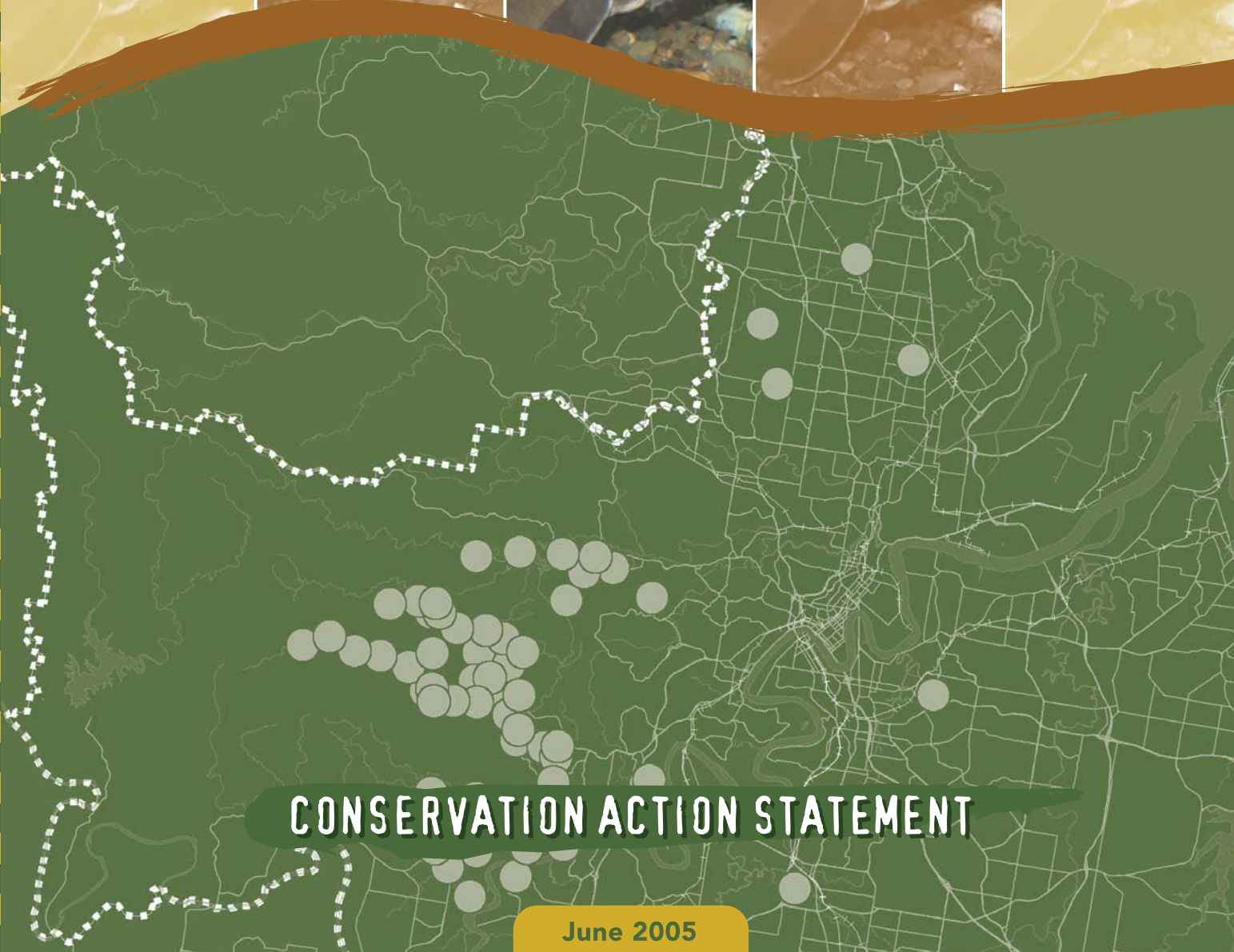


PLATYPUS



CONSERVATION ACTION STATEMENT

June 2005



Dedicated to a better Brisbane

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PLATYPUS



1.0 Introduction

Brisbane is recognised as one of the most biologically diverse capital cities in Australia, supporting some 1500 plant species, 523 vertebrate animal species and innumerable invertebrate species.

Brisbane is also part of one of the fastest growing urban regions in Australia. This growth is placing significant pressure on the ecosystems and wildlife of the city. Population pressures and urban development, resulting in the loss and fragmentation of habitat, continue to be the greatest threats to the protection of biodiversity (Brisbane SOE 2001). Since 1990 the rate of clearing has decreased markedly. However, even with no further loss of habitat, some existing flora populations within the city are at risk of local extinction because the small, isolated, remaining habitat areas cannot support them. Other significant threats include pest animals and plants and inappropriate fire regimes. The challenge is to maintain and restore the city's biodiversity while accommodating urban growth.

Brisbane City Council has responded to this challenge with the Brisbane City Biodiversity Strategy, an important part of Council's *Living in Brisbane 2010* vision for a clean and green city. The strategy outlines a range of initiatives designed to secure the long-term conservation of the city's outstanding biodiversity values using available public, community and industry resources. Conservation Action Statements are among these initiatives.

Conservation Action Statements clearly state Council's management intent for the city's most threatened species, and outline key strategies and actions for their management in Brisbane.

This Conservation Action Statement addresses the platypus (*Ornithorhynchus anatinus*), which is identified as a significant species within Brisbane as per Council's Natural Assets Planning Scheme Policy (Brisbane City Council 2000, *Brisbane City Plan*, vol 2, schedule 4).

This Conservation Action Statement will be updated every two to five years to reflect new information and progress on conservation actions. For more information about this or any other Conservation Action Statement, visit Council's website at www.brisbane.qld.gov.au or phone Council on 3403 8888.

1.0 Introduction continued...

Aims

This Conservation Action Statement details Council’s management intent for long-term protection and conservation of the platypus within Brisbane by:

- collating **existing information** on the distribution, ecology and management requirements of this species within Brisbane and surrounds
- identifying **key threats** that significantly impact upon this species within Brisbane
- identifying **gaps in existing knowledge** of the habitat and management requirements of this species and research priorities
- detailing **practical and affordable strategies and actions** that support the long-term protection and conservation of this species within Brisbane.

2.0 Conservation Status

The conservation status of a species will influence how it is managed. ‘Threatened’ species are typically accorded a more stringent management regime than ‘common’ species. Various conservation registers identify the status of fauna species at local, state and national levels. The current status of the platypus is provided in **Table 1**.

Table 1: Official Conservation Status of Brisbane City’s Platypus

Species	Brisbane City ¹	Queensland ²	National ³
Platypus	Significant	Common	Not Listed

¹ Brisbane City Council 2000, *Brisbane City Plan 2000*, Natural Assets Planning Scheme Policy, vol. 2

² *Queensland Nature Conservation (Wildlife) Regulations 1994* under the *Nature Conservation Act 1992*

³ *Environment Protection Biodiversity Conservation Act 1999*

3.0 Distribution¹

National/State

- East coast of Australia from Cooktown in Queensland through to the Victorian-South Australian border.
- Also sighted throughout Tasmania (Stone 1983; Carrick 1995).
- Sparse in South Australia (Serena 1995; Grant 1991).
- In September 2001, *PlatySearch* recorded over 400 sightings from more than 100 Queensland waterbodies (QPWS 2001).

3.0 Distribution¹ continued...

Local

The platypus is usually spotted in the west of the city; records for the eastern and southern waterways are few and largely unconfirmed. However, there are records of the platypus in the waterways throughout all districts of Brisbane. The 2001 *PlatySearch* survey also recorded 26 sightings of the platypus in the greater Brisbane area, including the Caboolture and North Coast regions (QPWS 2001).

The platypus has been recorded from a number of locations across Brisbane:

West

- Brisbane River (particularly within the upper reaches), Enoggera Creek and Enoggera Reservoir, Ithaca Creek, Fish Creek, Cubberla Creek, Farm Creek, Pullen Pullen Creek, Moggill Creek, Gold Creek and Gold Creek Reservoir and Kholo Creek.

North

- Cabbage Tree Creek, Albany Creek, South Pine River, Nundah Creek, Downfall Creek and Upper Kedron Brook.

South

- Norman Creek, Scrubby Creek (within Karawatha Forest), Oxley Creek and tributaries, Mt Ommaney Creek and Jindalee Creek.

East

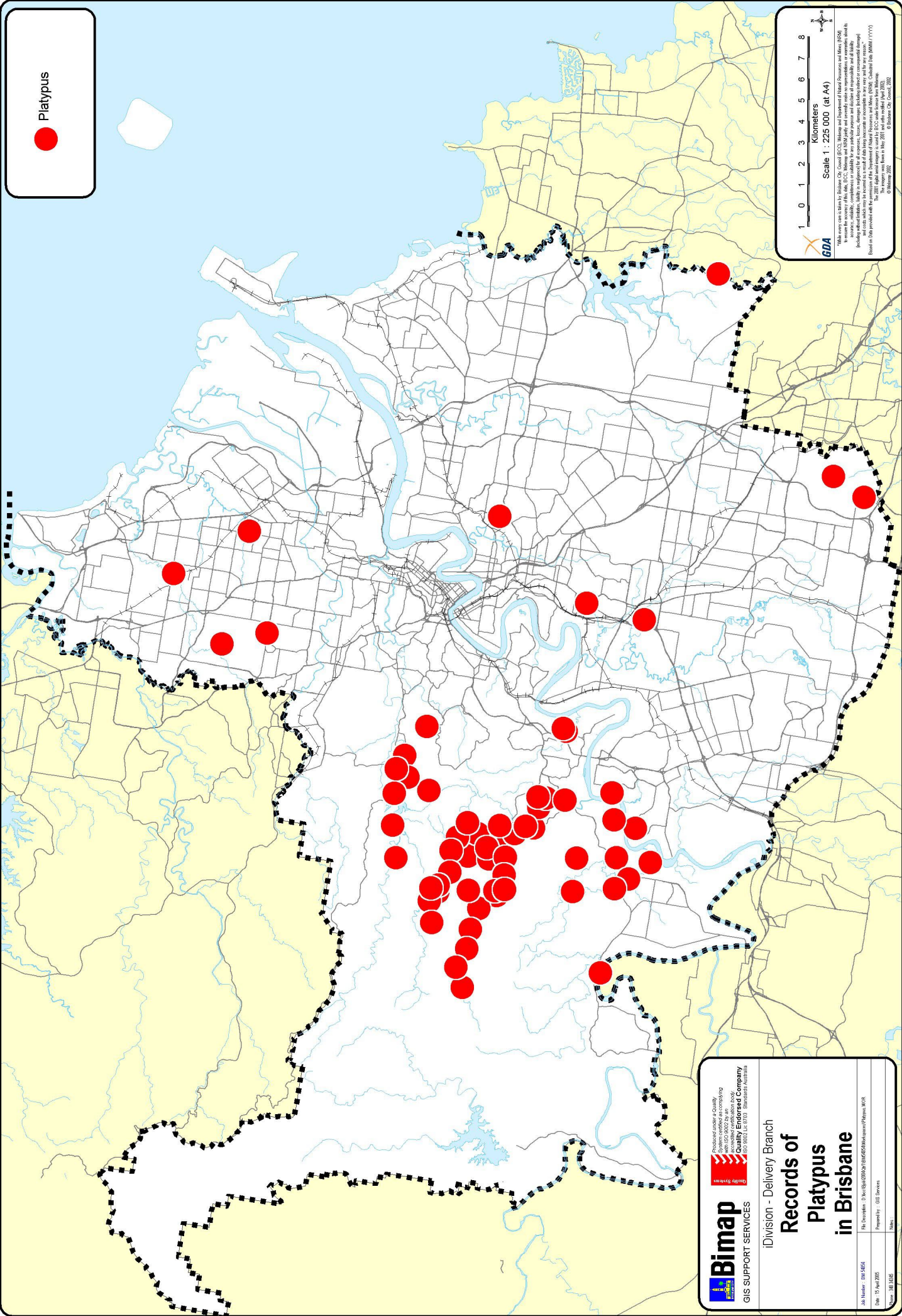
- Tingalpa Creek; significantly restricted and limited in numbers in the eastern suburbs due to the general degradation of waterways within this area.

Verified platypus records for Brisbane are shown on **Map 1**.

4.0 Ecology²

Habitat

- Occupies a variety of permanent waters but may also use temporary or man-made water bodies particularly when these are linked to permanent natural streams or rivers (Williams and Serena 1999; QPWS 2001).
- Occurs in fast, slow-flowing and still waters (Low 1993).
- Predominantly freshwater species and rarely seen in brackish and salt water (Qld DEH 1992).
- Prefers flowing river or stream waters; habitat may include a series of pools typically over five metres in depth (with little accumulated sand in the pools), connected by cobbled riffle areas of shallow water.
- Prefers waterways with relatively steep earth banks (greater than 1m in height) in which to build burrows (Williams and Serena 1999). Male and female platypuses build and sometimes share 'resting' burrows. Burrows extend at a shallow depth (50 centimetres below ground) for up to 30 metres (Grant, 1995). Several burrows may be used over a designated home range.
- Requires long sections of healthy riverine habitat for its long-term survival; isolated patches of suitable waterway are unlikely to sustain a population in the long term (Williams and Serena 1999).
- Preferred banks may include overhanging riparian vegetation which provides some shelter and food for benthic (bottom-dwelling) organisms on which the platypus feeds.



● Platypus

GDA
 Scale 1 : 225 000 (at A4)
 Kilometers
 1 0 1 2 3 4 5 6 7 8

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GIS SUPPORT SERVICES
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Records of Platypus in Brisbane

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 Date: 15 April 2025
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4.0 Ecology² continued...

Diet

- An opportunistic, carnivorous predator.
- Feeds predominantly on benthic organisms (eg. crayfish, shrimp, worms, freshwater molluscs) and the larval and adult forms of many insects (eg. caddisflies, stoneflies, mayflies, dragonflies, damselflies, beetles and bugs). Benthic organisms are usually associated with large woody debris, undercut banks and a coarse particulate substrate (eg. cobble, gravel, pebbles) (Serena et al. 2001a).
- Feeds incidentally on nektonic (free-swimming) animals (eg. small fish, insects, frog and fish eggs).
- Typically feeds for 8-14 hours in any 24-hour period; usually forages through the night but may feed during daylight, particularly on overcast days.
- Consumes about 15-30% of its body mass in food per day (Serena et al. 2001a).
- Forages by searching along and digging into undercut banks. It also forages along shallow riffle waters and dives into the deeper waters of pools (Serena et al. 2001b). When diving, the platypus stores small food items temporarily in special cheek pouches. The platypus grinds up the food in these pouches when surfacing between dives.

Reproduction

- Mates between July and October (earlier in the northern areas of their range) (**Table 2**).
- Females move to self-excavated nesting burrows to incubate their eggs and subsequently stay in, or close to, these burrows to suckle young for a three to four month period before emerging with the young early in the new year. Nesting burrows may extend as far as 30 metres from the water's edge.
- Females may choose not to breed annually; this is assumed to be a response to unsuitable environmental conditions.
- Difficult to define interbreeding populations as habitat is largely continuous.

Table 2: Breeding Seasons (green shading indicates breeding months)

Species	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Platypus*												

* Breeding season occurs earlier in the northern areas of their range

Movement Patterns

- Essentially sedentary and solitary.
- Home ranges of male may extend over seven kilometres; males known to travel more than 15 kilometres during and prior to the breeding season.
- Females may forage up to 10 kilometres (Williams and Serena 1999).
- Typically travels over at least one quarter of home range length during one foraging period, typically 8-14 hours per day (Gardner and Serena 1995).
- Juvenile males disperse but the territories of males may overlap.
- Males believed to move into more defined and separated core areas during the breeding season.

5.0 Threats³

Waterway Modifications

- Engineering works (eg. construction of dams, bank grading, channelisation, piping, weirs and culverts) can limit available habitat.
- Concentrated discharge of stormwater to creeks causes scouring, siltation and turbidity, which destabilise burrows and degrade instream habitat (Carrick and Grimley 1994).
- Localised pumping reduces water levels below that which can sustain benthic fauna on which the platypus feeds.
- Deposition of gravel reduces water levels below that which can sustain benthic fauna.
- Vegetation loss destabilises platypus burrows and reduces instream shelter, habitat and food for benthic fauna.
- Vegetation loss permits direct flow of stormwater and associated pollutants into the waterway, reducing the habitat for benthic fauna.

Poor Water Quality

- Use of pesticides and chemicals reduces water quality and the amount and type of food available for the platypus (Grant and Carrick 1978).

Predation

- Potential predators include eels, water rats and crocodiles (Grant 1995), as well as raptors, owls, foxes, dogs and cats.
- Carpet pythons, goannas and water rats may attack the eggs and young of the platypus while in burrows (Williams and Serena 1999).

Recreational Access

- Tracks too close to watercourses contribute to bank erosion and may encourage predation by domestic pets (eg. dogs and cats).

Litter

- Broken glass, metal, wire, fishing line, fishing hooks, elastic bands, plastic jar seals and rings may wrap around the limbs, necks and chests of the platypus impeding its movement and ability to feed.
- The platypus drowns easily in fishing nets, submerged drum or eel nets and unattended nightlines (Williams and Serena 1999).

6.0 Conservation

Several Brisbane City Council biodiversity initiatives are contributing to the protection and management of the platypus and its habitat across the city. Key initiatives include:

- **Bushland Acquisition Program:** Through this program more than 1900 hectares of the city's most significant lowland habitats have been purchased and protected to date.
- **Conservation Partnerships:** More than 240 private properties have established conservation partnerships with Council, covering some 750 hectares of principally lowland habitats in significant platypus areas.
- **Conservation Reserve Estate:** More than 12,500 hectares of parkland including 7000 hectares of bushland and wetland reserves are managed and protected. This reserve network provides habitat for Brisbane's significant species.
- **Natural Assets Local Law:** Under the Natural Assets Local Law 42% of the city area is now better protected from pre-emptive clearing.
- **Brisbane City Council City Plan:** The City Plan designates a green space system throughout the city to recognise and protect the contribution of open space areas to ecological functions. The City Plan's Waterway Code, Biodiversity Code and supporting Ecological Assessment Guidelines provide performance criteria and acceptable solutions to protect significant biodiversity values on, or adjacent to, proposed development. The City Plan also includes statutory schedules of flora and fauna species considered significant in Brisbane, recognising species significant at a city-wide or regional level.

7.0 Research

The *Great Queensland PlatySearch*, planned and coordinated by the Queensland Environmental Protection Agency, was undertaken to gather high quality data on the platypus' distribution (QPWS 2001). This was a very successful project, with 405 sightings throughout Queensland; 173 of these were from the greater Brisbane area. Recommendations arising out of the *PlatySearch* survey are to:

- repeat the survey in two to five years to further investigate waterbodies with known platypus populations as well as to collect new information
- focus NatureSearch volunteers on surveying waterbodies not surveyed in 2001, with particular attention to areas east of the Great Dividing Range, from which no records were received.
- Brisbane City Council is working on collaboration with the Wildlife Preservation Society of Queensland in mapping the distribution of the species in Brisbane and working with catchment groups in determining the presence and abundance of platypus in local waterways (Burnett 2005 pers. comm.).

8.0 Management Intent

Strategies

Brisbane City Council intends to contribute to the long-term conservation of the platypus in the city by:

- adopting and encouraging innovative voluntary and statutory mechanisms that protect important habitats and movement corridors
- ensuring appropriate ecological assessment, reporting and survey procedures are adopted in the development, planning and management activities
- encouraging land management practices that avoid, or minimise, direct and indirect impacts on platypus and their habitat on both public and private lands
- ensuring the timely availability of accurate, adequate and contemporary information for policy, planning and management decisions
- facilitating research that targets priority information gaps and contributes positively to the conservation of Brisbane's platypus and their habitat
- providing the Brisbane community with appropriate information and opportunities to contribute in a practical way to better understanding and protecting Brisbane's platypus.

8.0 Management Intent continued...

Actions

Table 3 describes priority conservation actions that Brisbane City Council will pursue with its partners to address the stated strategies. These priority actions have been drawn from studies undertaken for Council by recognised platypus experts and from consultation with a range of stakeholders. Actions will be undertaken as funds become available through Council's budgetary process. It should be recognised that Council must consider the timing of these actions against other priorities across the whole of the city.

Table 3: Management Actions

Management Aspect	Action	Timing	Lead Agent and Key stakeholders
Habitat Protection	Conserve and protect important platypus habitat on privately owned land within Brisbane, through Council acquisition of significant habitat (Bushland Acquisition Program) and through conservation partnerships (Voluntary Conservation Agreements and Land for Wildlife).	Ongoing	Brisbane City Council (BCC)
	Investigate and identify cross-catchment platypus movement corridors.	Commence 2005	BCC; Queensland Parks and Wildlife Service (QPWS); Community conservation groups
Habitat Management	Prepare platypus habitat management guidelines for land owners.	2006	BCC; QPWS; Community conservation groups
Information Management	Establish a long-term monitoring program of Brisbane's platypus population.	2006	BCC; QPWS; Universities; Community conservation groups
	Identify and map significant waterway reaches for platypus in Brisbane.	Commence 2005	BCC
Community Involvement	Support a biennial community-based platypus survey event.	Commence 2006	BCC; Community conservation groups

8.0 Management Intent continued...

Guidelines

The habitat protection and management guidelines detailed in **Table 4** are provided to better assist land owners, land managers, the development industry and the broader community in planning and undertaking land use activities that otherwise may disturb the platypus or its habitat. These guidelines are preliminary and will be refined as more information about this species and its habitat requirements become available.

Table 4: Habitat Management Guidelines

Issue	Guideline	Explanatory Notes
Habitat Disturbance	Waterways that are known to support the platypus are to retain a vegetated buffer of at least 50 metres.	The platypus is sensitive to a range of activities. Retaining a vegetated buffer against the waterway will help to reduce erosion, provide opportunities for burrows, buffer the habitat against noise and light impacts, and reduce feral or domestic animal interference.
	Bank and bed stabilisation activities are to consider impacts to flows, water depths and burrow location.	While it is essential in urban environments to prevent large-scale and destructive erosion of waterways, the type of structure constructed to solve the problem may actually exacerbate erosion elsewhere or change water flows and depths. The alteration of these parameters, along with excess sedimentation, can affect the suitability of habitat for the platypus and its prey.
	Where grazing is conducted on land adjacent to a waterway harbouring platypus, consider fencing and off-stream watering points to protect banks and streams from cattle and horses.	Cattle foul water and both horses and cattle are known to trample banks and burrows. Fencing the waterway and providing alternative sources of water will protect platypus burrows and help maintain adequate water quality.
Mortality	Platypus-friendly fishing techniques.	Nets and baited hooks (left overnight) are potentially lethal to the platypus. The exclusion of these activities from known platypus habitat will reduce the chances of the platypus being killed by these methods.
	Domestic pet management.	When young, the platypus is vulnerable to dogs and cats. Exclusion of these animals is near impossible; however, retaining dense vegetation will make access difficult for predators and improve cover for the platypus. Access tracks should be placed away from waterways and viewing platforms, and jetties should be constructed where the banks are steep and water is deep.

continued over page >>

8.0 Management Intent continued...

Guidelines continued...

Table 4: Habitat Management Guidelines continued...

Issue	Guideline	Explanatory Notes
Mortality continued...	If fencing across waterways, ensure fences are platypus-friendly.	Platypus are susceptible to drowning or injury through collisions/entanglement with inappropriately designed or installed fences. Platypus-friendly fencing should be clear of water and free of barbed wire.
	Cover water pump intakes with mesh or a grille.	Platypus are susceptible to being sucked into water pump intakes. Protecting the inlet will prevent this.
	Culverts and tunnels should be a minimum of 20 centimetres in diameter.	Platypus are capable of traversing tunnels and culverts for short distances. If one end of the tunnel or culvert becomes blocked platypus require a minimum diameter of 20 centimetres to turn around. As the platypus' burrows extend as much as 55 metres into the riverbank, the length of culvert is not too critical. However, the shorter the culvert the better.
Habitat Features	Retain snags, stumps and woody debris in waterways that support the platypus.	Snags, stumps and trees provide shelter for the platypus as well as its prey. Retention of these structures will assist in providing suitable habitat.
	Retain well-vegetated banks; rehabilitate denuded banks with a diverse range of native ground covers trees and shrubs.	Dense vegetation on banks protects burrow entrances, reduces erosion, filters runoff and contributes to supply of macroinvertebrate prey. While weedy banks may not be optimal, any weed management program should ensure that banks remain protected and stabilised by an appropriate amount of cover.
Water Quality	Prevent contamination from pollutants.	The platypus and its prey are susceptible to a wide range of pollutants. To avoid polluting waterways, farm chemicals, oils and fuels, and pesticides should be mixed away from waterways, used appropriately and disposed of suitably. In urban areas, certain types of SQIDs (Stormwater Quality Improvement Devices) such as swales and bio-retention basins can be installed to remove pollutants from stormwater prior to it entering the waterway.

9.0 Further Information

Agencies

- Australian Platypus Conservancy (www.platypus.asn.au)
- Brisbane City Council (www.brisbane.qld.gov.au)
- Department of Environment and Heritage (www.deh.gov.au)
- Environmental Protection Agency/Queensland Parks and Wildlife Service (www.epa.qld.gov.au)
- Queensland Museum (www.qmuseum.qld.gov.au)

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