

# City of Ipswich **Platypus Recovery Plan**

2020



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# 1. INTRODUCTION

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## 1.1 CONTEXT

The platypus (*Ornithorhynchus anatinus*) is a unique, egg-laying mammal that causes significant local and international curiosity. The species is identified as an iconic species under the Ipswich Nature Conservation Strategy 2015 and Ipswich City Council (council) has been building a database and understanding of the species within the local government area (LGA). This has been done in partnership with the Wildlife Preservation Society of Queensland who have raised growing concerns around the species' conservation status in Queensland, following a noticeable decrease in the number of sightings recorded in recent years.

Council has therefore drafted this recovery plan to ensure long term conservation of the species in the LGA and surrounding catchments. The plan is designed to be action oriented and complement other council catchment and conservation planning initiatives run by council as well as assist with informed development assessment decisions.

## 1.2 KEY PRINCIPLES

This plan was designed in the context of the following three principles:

1. The conservation of platypus should, wherever possible, seek to complement existing conservation strategies and to provide multi-species benefits. Conservation of this iconic species should be integrated with other measures to conserve freshwater habitats, promote biological diversity, and maintain ecosystem processes and services
2. Platypus conservation requires enactment of the principles of ecologically sustainable development, specifically 'the precautionary principle'
3. Recognition that community education and engagement is critical to the conservation of platypus.

## 1.3 DIRECTION AND HOW TO USE THIS PLAN

This plan covers the sub-catchments and waterway within the city that have suitable platypus habitat and/or confirmed records of platypus. Each sub-catchment is further divided into manageable recovery areas with tailored objectives, status, threat analysis and actions.

Actions are also collated into an overall management table and, where possible, ordered sequentially by the recommended completion date.



## 1.4 ALIGNMENT WITH EXISTING COUNCIL PLANS AND STRATEGIES

- Waterway Health Strategy 2020 – references importance of platypus and platypus habitat. Identifies local priorities and themes for catchments
- Nature Conservation Strategy 2015 – identifies platypus as an iconic species requiring conservation investment
- Catchment action plans – detailed catchment plans for waterway health improvements
- Ipswich Integrated Catchment Plan (DRAFT) – identifies opportunities for integration of outcomes for both biodiversity and flood mitigation within the Bremer River Catchment
- Habitat Connections Program – prioritises and delivers riparian vegetation restoration on council land
- Greater Brisbane Fish Barrier Prioritisation – identifies and prioritises waterway barriers
- Stormwater Quality Offsets Program – provides opportunities for remediation of waterways where water quality outcomes can be justified
- Ipswich Planning Scheme – sets desired environmental outcomes and performance indicators for development assessment.

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## 2. VISION

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To have a long term resilient network of high quality platypus habitat with strong connectivity and linkages, allowing platypus populations in Ipswich and the surrounding areas to thrive and grow.

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## 3. OBJECTIVES

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- Identify and stabilise platypus populations in Ipswich
- Increase understanding of drivers for species distribution within Ipswich and neighbouring areas
- Increase habitat quality at known sites, and manage existing threats
- Remove in-stream barriers and reduce threats to maintain sink populations
- Identify locations for establishment of new populations and complete necessary habitat improvements
- Ensure development upstream of known populations contributes a net positive outcomes for platypus
- Create and implement a regular monitoring program for platypus numbers and distribution.



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## 4. PLATYPUS POPULATIONS IN IPSWICH

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### 4.1 WHY CONSERVE PLATYPUS

Platypus are an integral part of the biodiversity of many Australian freshwater ecosystems and are an apex predator in many of their food chains. They are also of exceptional cultural and evolutionary significance given their unique anatomy and life history. This combination makes platypus a crucial species for promoting sustainable management of the waterways in Ipswich and surrounding areas. Platypus are renowned across the world and to have them living amongst people in urban areas is something very special. However these areas are also fragile, prone to many threats and changes and therefore considerable effort should go into identifying and conserving platypus in these environments.

Platypus are also rarely successfully bred in captivity meaning that the conservation of wild populations in existing areas is of critical importance as re-establishment may otherwise be unfeasible.

### 4.2 HABITAT AND BEHAVIOUR

Platypus occupy diverse freshwater habitats. They are present in shallow still waters including lakes and dams where water depths are less than five meters, allowing platypus to forage effectively. Platypus also occupy a wide diversity of creeks, streams and rivers from primary headwater streams to major rivers. Studies from Tasmania indicate that platypus are most commonly found in mid to medium sized streams. The headwaters of catchments are thought to have fewer individuals and present marginal habitat, largely due to competition for limited resources and space.

Habitat requirements have three overarching components:

1. In-stream variables; complex woody debris, organic material and complex substrate all increase the total available food resources, deep pools allow for refuge in drought
2. Banks; provide burrowing opportunities and shelter for platypus. Banks have to be relatively stable and be made of material suitable for creation of dens
3. Connectivity, flow and riparian habitat; waterway barriers increase vulnerability to predation, intact riparian vegetation increases habitat suitability, increases bank stability and allows platypus to traverse longer distances.

### 4.3 CONSERVATION STATUS

The platypus is a protected species in Queensland under the *Nature Conservation Act 1992*. Under the Act, the species is scheduled as 'Special least concern' along with the echidna, meaning that the species is relatively stable, however recognises its importance due to its iconic nature and evolutionary significance.

The platypus holds weight in the Queensland development assessment process through means of the State Planning Policy (SPP). Specifically, several areas of key platypus habitat are mapped under the SPP Wildlife Habitat Mapping.

In 2016, the Wildlife Preservation Society of Queensland identified a decrease in the number of platypus sightings being recorded to state government biodiversity databases. The reasons for this are unclear, however it is likely to be attributable to an overall decline in numbers. While no case are currently being made for the species to receive a threatened listing, it has highlighted the need for increased understanding and better data within Queensland.

### 4.4 KNOWN POPULATIONS

Ipswich City Council and Wildlife Queensland have monitored platypus within the Ipswich local government area for five years prior to the writing of this plan. For three years this has also been completed with the assistance of environmental DNA surveys (eDNA).

Through this work council is aware of several known locations of platypus within and adjacent to the Ipswich LGA. These include:

- Sapling Pocket to Kholo Bridge in the mid-Brisbane River
- Woogaroo Creek and Opossum Creek
- Sandy Creek, Camira through to Bullock Head Creek and Wolston Creek (in Brisbane).

### 4.5 ANECDOTAL RECORDS

Council has some evidence of platypus in several other catchments but only has anecdotal records or one eDNA record. Without repeated eDNA records or evidence of a physical sighting, it is difficult to fully determine platypus presence. In addition it is difficult to determine whether any records are from a permanent or resident platypus, or whether they are more transient.

This is the case for both Bundamba Creek and Six Mile Creek where both have previous anecdotal records from community members as well as an eDNA record at one or more sites. More surveys are required to confirm the presence of platypus in these catchments.

### 4.6 AREAS OF KNOWN HIGH QUALITY HABITAT

Council continues to survey a number of other catchments that have high quality platypus habitat but have no recent anecdotal records or evidence of platypus presence. This includes most of the Bremer catchment, including the Bremer River (west of the Ipswich CBD), Purga Creek and Warrill Creek. It is likely that the absence of platypus in these areas, despite the generally good habitat conditions, is due to a combination of the known drivers impacting their distribution and survivorship. These include the following:

- diminishing availability of high quality habitat
- predation and habitat impacts by introduced species
- impacts associated with recreational fishing practices
- permanent movement barriers have limited the ability of platypus to recolonise after disturbance
- poor water quality from development or pollution resulting in reduced food availability
- the hydrology of the systems has been significantly altered.

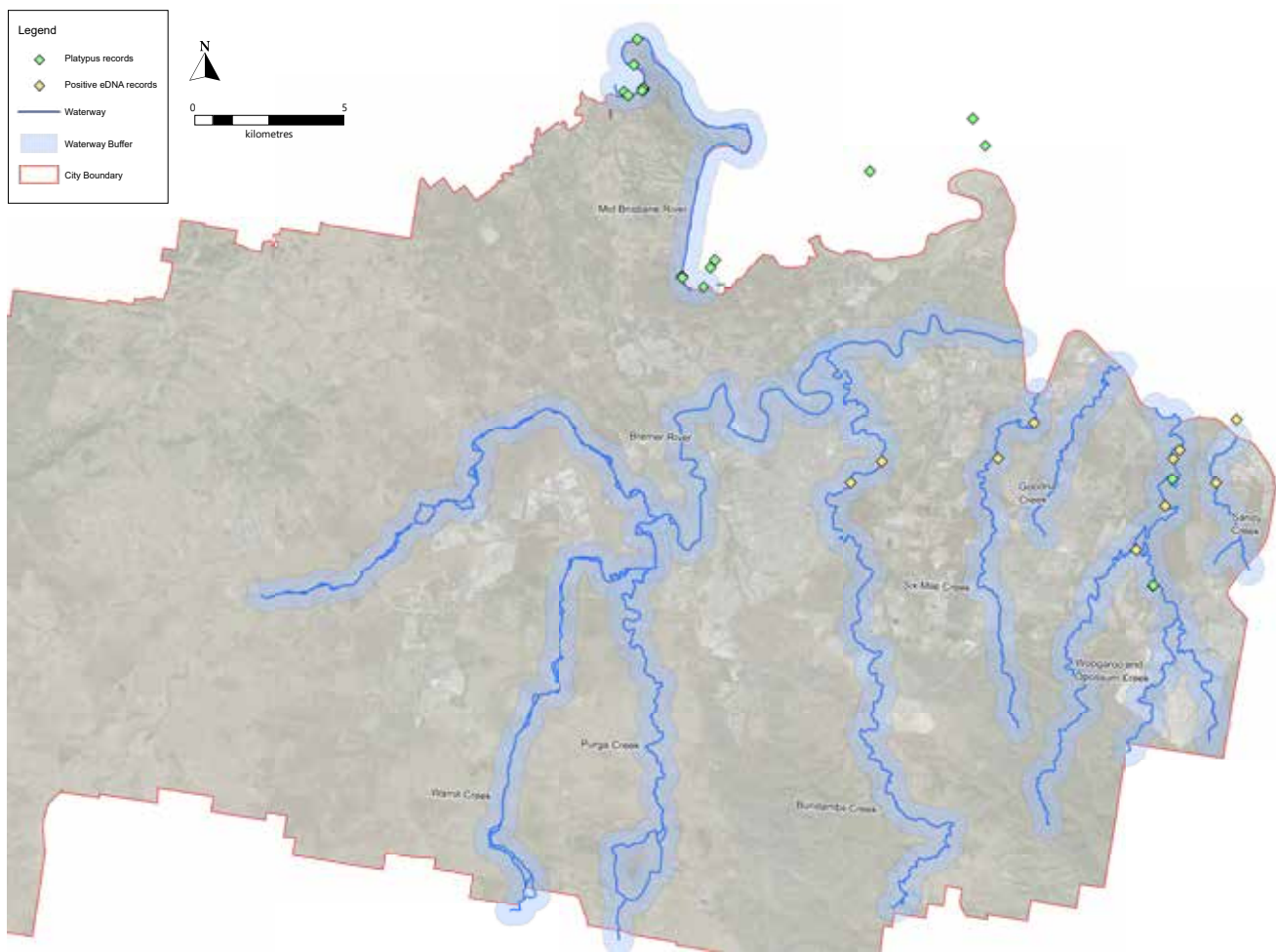


Figure 1: Map of all catchments relevant to this recovery plan. Includes records of known platypus sightings in addition to positive eDNA records.



## 4.7 THREATS AND REASON FOR DECLINE

Table 1: List of threats with ratings of severity, scale of impact and reason for inclusion.

Threat factor	Consequence rating	Extent over which threat may operate	Evidence base
River regulation, changed flow regimes, impoundments and water extraction	Severe	Large	Modification of river flow has direct impact and affects food availability, particularly in summer. Deep water and impoundments are unsuitable for foraging. Waterway barriers (e.g. culverts) increase vulnerability to predation if platypus are required to leave the channel
Degradation of river banks (nesting and resting sites) due to livestock, channel modification, stream crossings and other factors (including clearing of riparian vegetation)	Severe	Large	Platypuses are dependent upon a stable bank environment to provide resting and nesting burrows, riparian clearing, access to stock and resultant erosion reduce these resources. Channel sedimentation resulting from bank erosion degrades platypus foraging habitat
Mortality associated with fishing bycatch	Severe	Large	Fishing nets and traps were responsible for more than half of reported platypus mortalities in Victoria over a 30 year period. Discarded fishing line and hooks can also harm the animals
Climate change	Severe	Large	Habitat availability reduces in drought, breeding cycles are interrupted by flooding. Some suggest available habitat will reduce by 30% under climatic change
Predation by red foxes, wild dogs and domestic dogs	Moderate	Large	Account for 40% of mortalities in Tasmania, and 15% in Victoria. Particular issue when platypus disperse across land
Pollution (degradation of water quality, contamination of sediment with common toxicants)	Moderate	Moderate	Platypus can survive lower water quality, however population viability and density decreases with increased pollution
Isolation and genetic introgression	Currently minor, but predicted to increase with population fragmentation	Currently minor, but predicted to increase with population fragmentation	Some populations are known to have very low genetic variability and population size. Associated risks increase with further fragmentation and isolation
Competition and habitat degradation due to pest fish	Moderate	Moderate	Some evidence suggests high densities of carp can reduce platypus food supply
Road mortality	Minor	Minor	Road kill most likely in poorly connected systems and near waterway barriers
Plastic, rubber and metal litter	Minor	Minor (mainly urban areas, including country towns)	Around 5% of mortalities in Victoria were related to litter entanglement. A large portion of the population carry litter or other discarded materials on their body



## 5. RECOVERY AREAS

### 5.1 RECOVERY AREA OVERVIEW

Catchments which have known platypus populations, form key strategic linkages or contain known suitable habitat, have all been assessed. Each assessed catchment has been further divided into smaller management units called recovery areas. This was selected as a preferred method of setting actions and context for this plan as each catchment is different from top to bottom. It also allows implementation of local and targeted actions.

This section outlines information about each of the platypus recovery areas identified in this plan.

Each recovery area includes information summarised into the following criteria:

- management objectives
- background
- threats (known and potential)
- evidence of platypus
- habitat quality score
- actions.

This section is therefore the primary deliverable of the recovery plan and all actions are extracted into an actions summary table.

### 5.2 LIST OF RECOVERY AREAS

Table 2: List of recovery areas identified.

Catchment	Recovery Areas	ID Code
Sandy Creek	Logan Motorway to powerlines	SC1
	Powerlines to Camira Recreation Reserve	SC2
	Camira Recreation Reserve to : a. Pollard Park b. State land	SC3
Woogaroo Creek	Brisbane River to Eric Street	WG1
	Eric Street to Opossum Creek confluence	WG2
	Opossum Creek confluence to Centenary Highway	WG3
Opossum Creek	Opossum – Woogaroo creeks Confluence to Springfield Greenbank Arterial Road	OP1
Goodna Creek	Brisbane River to Kruger Parade	GD1
	Kruger Parade to Garland Street	GD2
Six Mile Creek	Brisbane River to Redbank Plains Road	SM1
	Redbank Plains Road to White Rock	SM2
Bundamba Creek	Bremer River to Brisbane Road	BU1
	Brisbane Road to Swanbank Road	BU2
	Swanbank Road to Daly's Lagoon	BU3
Bremer River	Bremer River and Bundamba Creek confluence to the rail bridge	BR1
	Rail bridge to Old Toowoomba Road	BR2
	Old Toowoomba Road to Warrill Creek confluence	BR3
	Warrill Creek confluence to Armstrong Park	BR4
Mid-Brisbane River	Sapling Pocket to Kholo Bridge	MB1
Warrill Creek	Bremer River confluence to Cunningham Highway through Amberley Air Base	WR1
	Cunningham Highway to Ten Mile Swamp	WR2
Purga Creek	Warrill Creek confluence to Purga	PG1

### 5.3 HABITAT ASSESSMENT MATRIX

Each recovery area contains at least one sample site where habitat quality has been assessed. These sites will continue to be monitored throughout the duration of the plan and will be used to measure its success. The habitat assessment matrix has been adapted from Grant and Gill (2011).

Table 3: Platypus habitat assessment matrix. Adapted from Grant and Gill (2011).

Habitat variable	Known or potential benefit to platypuses	Score
<b>Bank variables/geomorphology</b>	<b>(Score 0 = none, 1 = &lt;25%, 2 = 25-49%, 3 = 50-74%, 4 = &gt;75%)</b>	<b>/28</b>
Consolidated banks	Maintenance of burrows, reduced in-stream sedimentation	
Large-medium sized trees on banks	Consolidation of banks, organic input to aquatic ecosystem	
Overhanging vegetation <2m above water	Consolidation of banks, organic input to aquatic ecosystem, lower predation risk due to shelter while foraging and entering/leaving burrows	
Earthen banks	Allows construction and maintenance of burrows	
Bank height >1m	Preferred bank morphology for burrows construction and maintenance	
Concave or near vertical banks	Secure access to burrow, hide entrance, lower predation risk	
Absence of erosion	Maintenance of burrows, maintenance of riparian vegetation, reduced in-stream sedimentation	
<b>In-stream variables</b>	<b>(Score 0 = none, 1 = &lt;25%, 2 = 25-49%, 3 = 50-74%, 4 = &gt;75%)</b>	<b>/16</b>
Pool depth (>1m but<5m)	Preferred foraging depth for platypus, lower risk of predation	
Large woody debris (LWD, >10cm diameter)	Habitat and food for benthic invertebrate prey	
Complex benthic substrate (cobbled, gravel)	Favourable habitat for benthic invertebrate prey	
Coarse organic matter – if visible	Favourable habitat for benthic invertebrate prey	
<b>Connectivity and predation</b>	<b>Connected to continual near permanent water/veg cover</b> <b>4 = &gt; 1km m in each direction</b> <b>3 = &gt; 500m in each direction</b> <b>2 = &gt; 250 in each direction</b> <b>1 = &lt; 250m in each direction</b> <b>0 =Single isolated location &lt; 100m in length</b>	<b>/16</b>
Flow water connectivity	Ability to safely access locations/disperse/feed	
Connectivity of riparian corridor to other suitable/ known populations	Ability to move into/disperse from location and for genetic flow	
Major obstructions/barriers	Obstructions to movement between location and known population e.g. major roads 5 = 0 4 = 1 3 = 2 2 = 3 1 = 4 0 = >4	
Risk of predation – domestic dogs or feral animals	Extent of domestic dog interaction with the water course. Likely presence and abundance of feral predators	
<b>Total</b>		<b>/60</b>

## 5.4 SIMPLIFIED HABITAT ASSESSMENT MATRIX

A simplified version of the habitat assessment matrix will be presented in this plan.

Table 4: Simplified version of the platypus habitat assessment matrix.

Habitat variable	Score
Bank variables/geomorphology	/28
In-stream variables	/16
Connectivity and predation	/16
<b>Total</b>	<b>/60</b>

The simplified matrix is colour coded to improve the readability of the data at a glance.

The colour coding is as follows:

Poor	Moderate	Good	Very good
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# SANDY CREEK (CAMIRA)

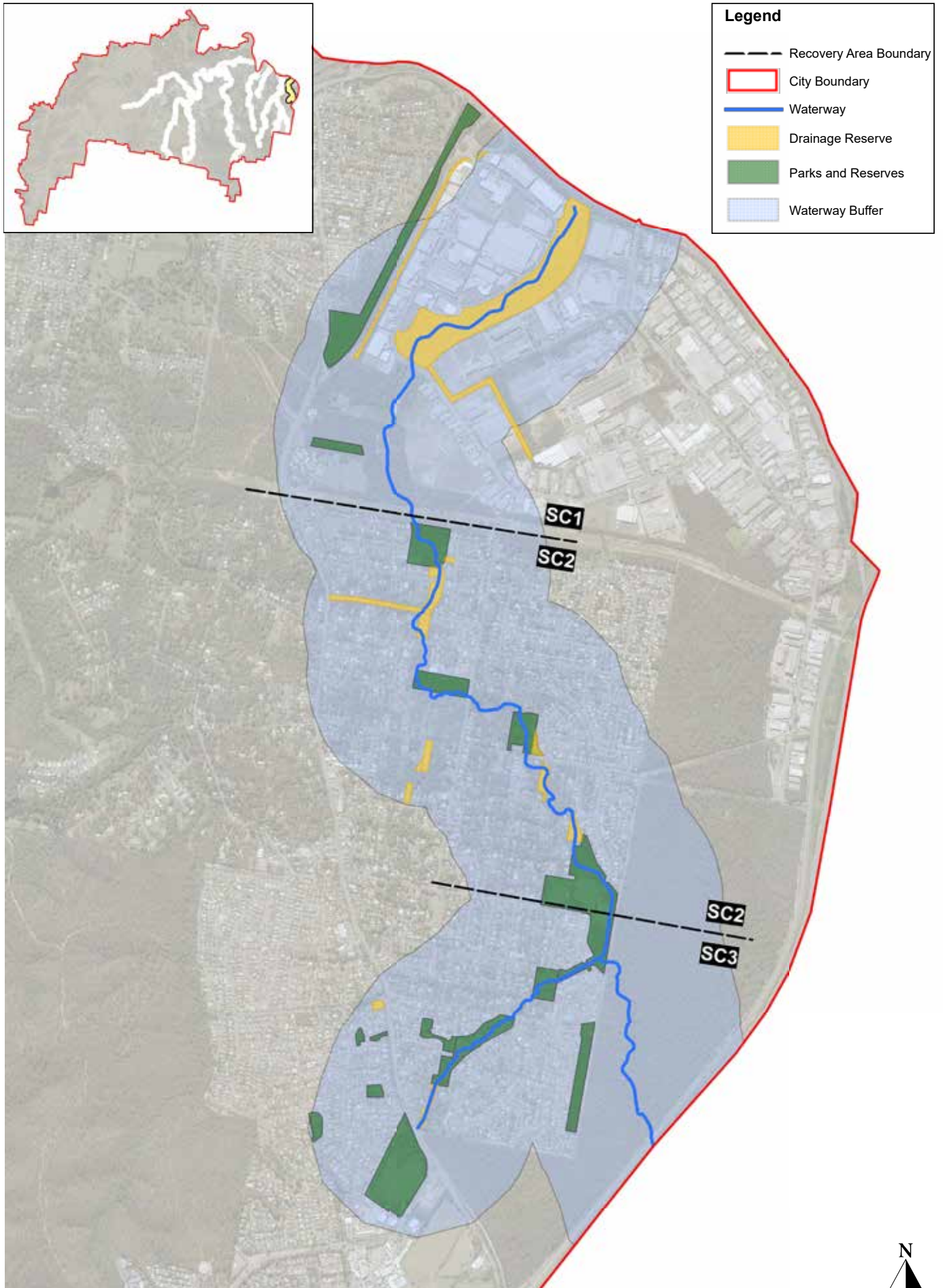


Figure 2: Context map of the Sandy Creek platypus recovery area.

## SC1 – Logan Motorway to powerlines

- Management objectives
  - Improve instream and flow connectivity.
- Background
  - Mostly on council land under various different programs
  - Highly industrial area with the majority of the channel between industrial precincts on either bank
  - Potential waterway barrier just upstream from Progress Road
  - Channel generally very thin with some deeper, wider areas under Campbell Avenue
  - Big outlet pipes under Formation Street forming potential barriers
  - Heavy weed infestation
  - Several large sand slugs on council land
  - Limited tree cover and potential burrowing habitat on the Brisbane side
  - Swampy areas upstream of Mica Street
  - Area behind Camira State School has good habitat quality.
- Threats (known and potential)
  - Poor quality banks for maintaining permanent burrows
  - Several potential barriers to movement under the Logan Motorway and Mica Street
  - Poor flow connectivity and difficult movement with heavy weed infestation and sediment build up
  - Risk of predation in open areas with poorly defined channel
  - Potential run off of pollutants from industrial sites.
- Evidence of platypus
  - One confirmed record of positive environmental DNA.
- Habitat quality score

Table 5: Habitat quality score. Sample taken from Synergy Industrial Area.

Habitat variable	Score
Bank variables/geomorphology	10
In-stream variables	5
Connectivity and predation	8
<b>Total</b>	<b>24/60</b>

- Actions
  - Complete a detailed study of potential movement barriers, their severity, potential solutions and probable cost
  - Complete a full weed survey of the channel and develop a prioritised and feasible weed control program in an attempt to improve flow in the channel
  - Determine origins of the sand slugs, undertake action to mitigate further erosion and investigate feasibility of remediation
  - Create and implement a regular monitoring program for platypus in this recovery area
  - Create a program for baseline assessment of pollutant loads in the adjacent industrial areas and create a regular monitoring program in collaboration with councils Environmental Health Team.

## SC2 - Powerlines to Camira Recreation Reserve

- Management objectives
  - Improve in-stream and longitudinal connectivity
  - Improve in-stream habitat quality
  - Manage threats from domestic dogs.
- Background
  - Stretch from Cochrane Street to Jim Seymour Park is generally high quality habitat
  - Some dense populations of taro in some areas, unclear on the impact this has on platypus populations
  - Substrate quality is variable, often sandy with limited potential for prey species
  - Crossing under Cochrane Street is a potential barrier
  - Flying-fox colony from Cochrane Street through to Ishmael Road. Unclear what impact this may have on platypus populations
  - Very good quality riparian habitat and connectivity from Cochrane Street through to Camira Recreation Reserve
  - In some areas water flow connectivity is poor
  - Bushland areas in Camira Recreation Reserve again highly infested with taro, but with better burrowing opportunities with better tree cover and steeper banks.
- Threats (known and potential)
  - High domestic dog presence in Jim Seymour Park and drainage reserves adjacent to Cochrane Street
  - Heavy weed infestation downstream from Camira Recreation Reserve (mainly taro and Singapore daisy)
  - Poor water connectivity in areas between Pilny Reserve and Mill Reserve
  - Pipe culverts under Cochrane Street.
- Evidence of platypus
  - Several anecdotal community sightings from this stretch of Sandy Creek
  - One confirmed record from an environmental DNA survey.
- Habitat quality score

Table 6: Habitat quality score. Sample taken from Camira Recreation Reserve, Camira.

Habitat variable	Score
Bank variables/geomorphology	17
In-stream variables	5
Connectivity and predation	8
<b>Total</b>	<b>30/60</b>

- Actions
  - Install warning signs about the risk of domestic dogs in key platypus areas
  - Complete a full weed survey of the channel and develop a prioritised and feasible weed control program. Targeted near Camira Recreation Reserve where weed density is highest
  - Increase the number of landholders in conservation partnership with council, specifically targeting platypus outcomes
  - Where feasible and necessary manually install large woody debris to improve in stream habitat quality
  - Create and implement a regular monitoring program for platypus in this recovery area.

### SC3 – Camira Recreation Reserve to Pollard Park

- Management objectives
  - Improve flow connectivity.
- Background
  - Concrete channel from the end of Camira Recreation Reserve to end of Jean Road with a large lip that presents a waterway movement barrier
  - End of Jean Road to Kertes Road has very steep banks and is heavily eroded in sections
  - Mostly soft, sandy banks with limited opportunities for establishing stable burrows
  - Pollard Park undergoing stormwater offset improvements to habitat quality
  - Some areas with thick in stream vegetation predominantly comprised of weeds such as taro
  - Other section of Sandy Creek goes into Commonwealth military land adjacent to the Centenary Highway. From mapping this appears to be high quality habitat, however very little is known about the area.
- Threats (known and potential)
  - Extremely limited burrowing opportunities
  - Large open spaces with little refuge increasing predation risk
  - Highly erosive banks
  - High levels of weed (taro) infestation blocking the main channel
  - Potential domestic dog interactions with platypus.
- Evidence of platypus
  - No evidence recorded.
- Habitat quality score

Table 7: Habitat quality score. Sample taken from Pollard Park, Camira.

Habitat variable	Score
Bank variables/geomorphology	16
In-stream variables	6
Connectivity and predation	5
<b>Total</b>	<b>27/60</b>

- Actions
  - Develop a weed management plan for removal of taro from Camira Recreation Reserve at the end of Moss Road
  - Complete a cost and feasibility analysis for removal of the concrete channel between Moss Road and Brushwood Court. Potentially consider for Stormwater Quality Offsets Program
  - Continue to work on options for stabilising the banks and reducing erosion in Stephen Cook Memorial Park and Pollard Park.

# WOOGAROO CREEK

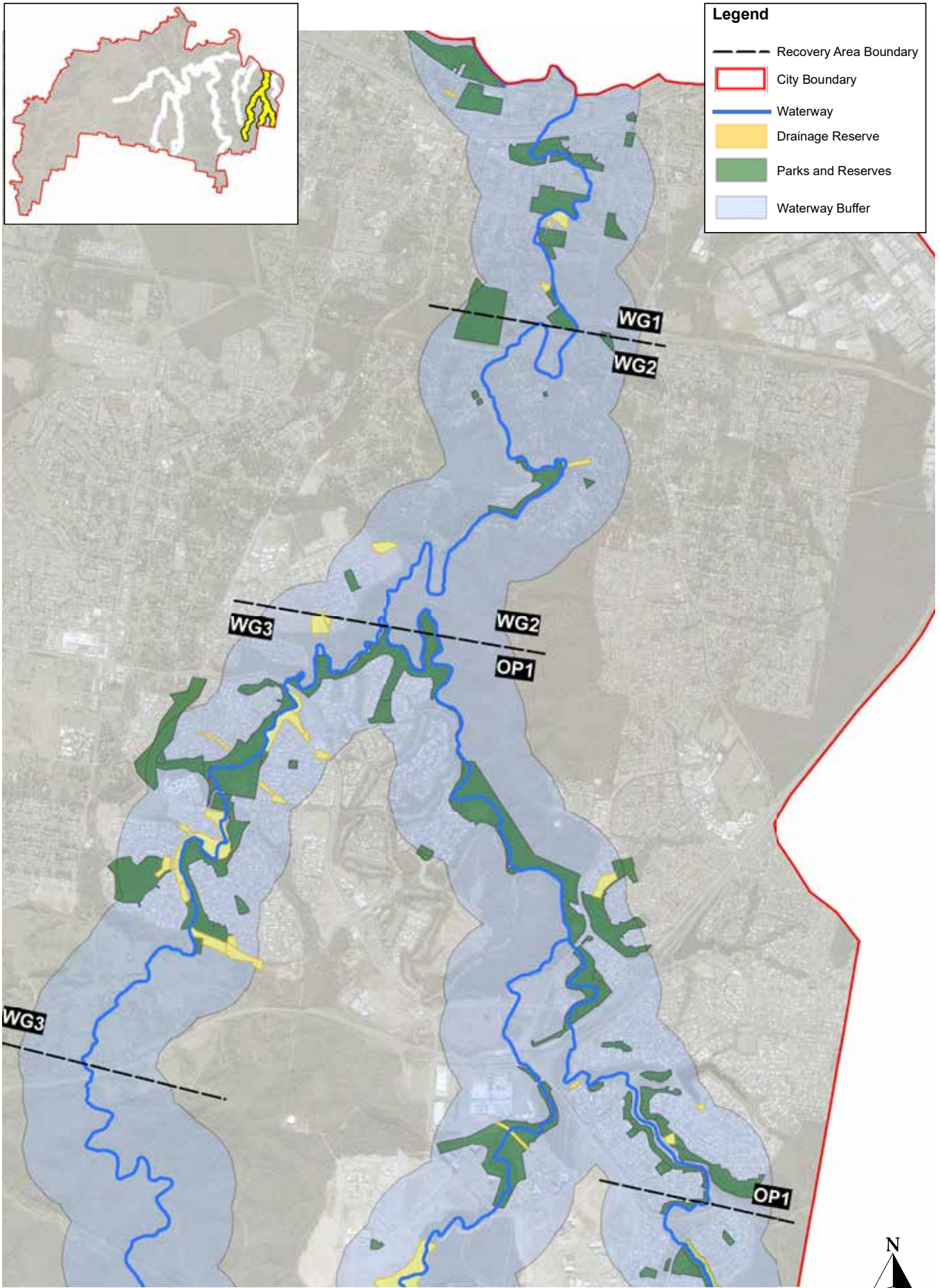


Figure 3: Context map of the Woogaroo and Opossum Creek platypus recovery areas.



## WG1 - Brisbane River to Eric Street

- Management objectives
  - Improve bank stability
  - Increase riparian vegetation cover
  - Improve in stream habitat.
- Background
  - Habitat generally moderate to good quality. Some areas very steep and heavily eroded
  - High level of council ownership along most of the creek
  - Some areas with large amount of riparian vegetation, other with minimal to no riparian vegetation (particularly north of the Ipswich Motorway)
  - Substrate generally very sandy and not ideal for platypus foraging habitat
  - Habitat quality on the banks is very good upstream from Noble Park
  - Water is generally very turbid, likely from development and other erosion upstream
  - Habitat quality at Leslie Park is very poor and would be difficult for platypus to navigate
- Contains the ninth ranked fish barrier requiring rectification in Ipswich within Eric Street Reserve (b). The barrier is a rock weir and requires a rock ramp to be rectified.
- Threats (known and potential)
  - High turbidity and sedimentation
  - Decreased habitat availability during drought
  - Limited shelter habitat and riparian vegetation in some areas
  - Mobile substrate in some areas
  - High domestic dog presence and public access to the creek.
- Evidence of platypus
  - Positive results from environmental DNA at two locations in this area including Kippen Park and Noble Park (2016 and 2018)
  - Anecdotal community sightings.
- Habitat quality score (two samples)

Table 8: Habitat quality score. Sample recorded from Kippen Park, Goodna.

Habitat variable	Score
Bank variables/geomorphology	21
In-stream variables	8
Connectivity and predation	10
<b>Total</b>	<b>39/60</b>

Table 9: Habitat quality score. Sample taken from Noble Park, Gailes.

Habitat variable	Score
Bank variables/geomorphology	28
In-stream variables	10
Connectivity and predation	10
<b>Total</b>	<b>48/60</b>

- Actions
  - Undertake plantings of riparian vegetation on the following council properties:
    - Lot 8SP234916 (64 Brisbane Terrace, Goodna)
    - Lot 9O6G152 (1 Woogaroo Street, Goodna)
    - Martin Coogan Park
    - Lot 2O3SP234923 (65 Mill Street, Goodna)
    - Unnamed Reserve connected to Noble Park
  - Continue planting of riparian vegetation at Kippen Park
  - Develop detailed design, obtain planning approval and implement works to retrofit the fish barrier in Eric Street Reserve (b)
  - Install warning signs about the risk of domestic dogs in key platypus areas
  - Where feasible and necessary manually improve the complexity of in stream substrate
  - Create and implement a regular monitoring program for platypus in this recovery area.

## WG2 - Eric Street to Opossum Creek confluence

- Management objectives
  - Manage impacts from potential future urban development
  - Increase community engagement in platypus conservation.
- Background
  - Riparian habitat and bank structure is generally in good condition, with the exception of a few small areas
  - Some areas on the eastern side of Woogaroo Creek are earmarked for potential urban development
  - The western side of Woogaroo Creek has had recent residential development
  - There is an application for an additional residential development adjacent to Eugene Street Reserve. This block contains a large recreation corridor in the Ipswich Planning Scheme. This area is largely cleared of vegetation and forms grassy floodplain. Large amounts of foreign tree species such as Camphor laurel and Chinese elm
  - On the eastern side of Woogaroo Creek is a large vegetated area. This is also zoned for future residential development with a small recreation zone following the flood affected areas of Woogaroo Creek
- Water is typically quite turbid, likely from development and other erosion upstream
- Records of use of opera house traps in the area resulting in deaths of two water dragons.
- Threats (known and potential)
  - Increased erosion and sedimentation from urban development
  - Increased pollution and recreational activities from urban development
  - Impacts from opera house traps and illegal fishing activities
  - Decreased habitat availability during drought
  - Very sandy substrate in some areas.
- Evidence of platypus
  - Two positive (2016, 2019) and one unequivocal (2018) eDNA result from Eugene Street Reserve
  - One confirmed record from Hayes Avenue (2015).
- Habitat quality score

Table 10: Habitat quality score. Sample taken from Eugene Street Reserve, Bellbird Park.

Habitat variable	Score
Bank variables/geomorphology	23
In-stream variables	8
Connectivity and predation	10
<b>Total</b>	<b>41/60</b>

- Actions
  - Install signage covering appropriate behaviour in platypus habitat, including opera house traps and domestic dogs
  - Increase riparian vegetation cover in the riparian zone through appropriate mechanisms
  - Undertake annual inspections of the recovery area to identify and flag any upcoming or new erosion and sediment control issues from adjacent development sites. Any potential issues should be raised with councils Environmental Health Team
  - Ensure platypus outcomes are a key considerations in any development works undertaken by developers in the recovery area.
- In particular ensuring effective erosion and sediment control and limit construction of new waterway barriers
- Increase the number of landholders engaged in a conservation partnership, targeting Hayes Avenue, Camira
- Increase general awareness of platypus presence within the catchment
- Work with Ipswich Rivers Improvement Trust on riparian rehabilitation programs that support platypus habitat enhancement
- Create and implement a regular monitoring program for platypus in this recovery area.

### WG3 – Opossum Creek confluence to Centenary Highway

- Management objectives
  - Reduce erosion and sedimentation from Springfield and White Rock
  - Improve in stream habitat quality.
- Background
  - Habitat quality is highly variable throughout established urban areas of the recovery area
  - Some areas with heavily incised channel and steep banks unsuitable (near Augusta Parkway)
  - Areas through Augustine Heights still have some level of intact riparian vegetation although generally only narrow buffers
  - Several areas with shallow pools prone to isolation
  - Large amounts of sediment coming from development as well as the powerline easement and service tracks in White Rock-Spring Mountain Conservation Estate. Large sand slug under the Centenary Highway
- Many areas in the upper catchment become completely dry during drought periods
- In many areas the stream morphology is insufficient to support platypus populations.
- Threats (known and potential)
  - Altered hydrology from upstream impacts
  - Increased erosion and sedimentation from urban development and disturbance upstream
  - Increased pollution, domestic dogs and recreational activities from urban development
  - Lack of deep pools for drought refuge.
- Evidence of platypus
  - No evidence to date.
- Habitat quality score (two samples)

Table 11: Habitat quality score. Sample taken in Opossum Creek Wildlife Corridor downstream of Augusta Parkway, Brookwater.

Habitat variable	Score
Bank variables/geomorphology	20
In-stream variables	4
Connectivity and predation	12
<b>Total</b>	<b>36/60</b>

Table 12: Habitat quality score. Sample taken from drainage reserve opposite Jane Gorry Park, Augustine Heights.

Habitat variable	Score
Bank variables/geomorphology	26
In-stream variables	11
Connectivity and predation	10
<b>Total</b>	<b>47/60</b>

- Actions
  - Devise a remediation and sediment management plan for White Rock-Spring Mountain Conservation Estate and the embedded Powerlink assets (this must take in to consideration potential ways to remove existing sediment build up between White Rock and the Centenary Highway)
  - Undertake a detailed analysis of the Woogaroo section of the Opossum Creek Wildlife Corridor and determine any potential and feasible actions to improve in stream habitat variables.

## OPOSSUM CREEK

### OP1 - Opossum – Woogaroo confluence to Springfield Greenbank Arterial Road

- Management objectives
  - Reduce erosion and sedimentation from existing and continued development from greater Springfield area
  - Manage impacts from potential future urban development
  - Improve instream habitat quality.
- Background
  - Habitat quality is generally good but there are a number of potential or emerging threats
  - Areas around Opossum Creek Parklands have high habitat quality with good bank structure and complex overhanging bank vegetation
  - Some areas with heavily incised channel and steep banks
  - Potential impact from off leash dogs within Opossum Creek Parklands
  - Channel is generally shallow and some areas suffer from low water levels and many areas are completely without water in drought
  - The majority of Opossum Creek within the recovery area borders a large vegetated block to the north which is zoned for urban development. This is the same block as in WG2. The area immediately adjacent to Opossum Creek is zoned for recreation due to the area being too flood constrained for urban development
- The upper catchment near Springfield Lakes and Robelle Domain are not deep enough to provide suitable platypus habitat
- Removal of riparian vegetation and creek realignment associated with construction of Eden Station Drive
- Any habitat upstream of Eden Station Drive is considered poor.
- Threats (known and potential)
  - Future urban development
  - Trunk sewer duplication along Opossum Creek
  - Pollution from urban areas
  - Erosion and sedimentation
  - Potential impacts from domestic dogs
  - Lack of deep pools for drought refuge.
- Evidence of platypus
  - Three positive records through eDNA, Mur Boulevard (Opossum Creek Wildlife Corridor) and Opossum Creek Parklands (2017 and 2019)
  - One confirmed record of platypus from Opossum Creek Parklands (2019).
- Habitat quality score (two samples)



Table 13: Habitat quality score. Sample taken from Opossum Creek Wildlife Corridor, Brookwater.

Habitat variable	Score
Bank variables/geomorphology	15
In-stream variables	5
Connectivity and predation	15
<b>Total</b>	<b>35/60</b>

Table 14: Habitat quality score. Sample taken from Opossum Creek Parklands, Brookwater.

Habitat variable	Score
Bank variables/geomorphology	18
In-stream variables	8
Connectivity and predation	9
<b>Total</b>	<b>35/60</b>

■ Actions

- Install signage covering appropriate behaviour in platypus habitat, including opera house traps and domestic dogs
- Ensure future embellishment of the recreation areas on developments sites on the northern banks of the creek have positive outcomes for platypus populations
- Undertake yearly inspections of the recovery area to identify and flag any upcoming or new erosion and sediment control issues coming from adjacent development sites. Any potential issues should be raised with Councils' Regulatory Services Branch
- Create and implement a regular monitoring program for platypus in this recovery area
- Appropriate conditions are implemented by Council on the Opossum Creek trunk sewer duplication for both construction and rehabilitation
- Stabilisation works to reduce bank erosion and re-instate deep pool habitats.



# GOODNA CREEK

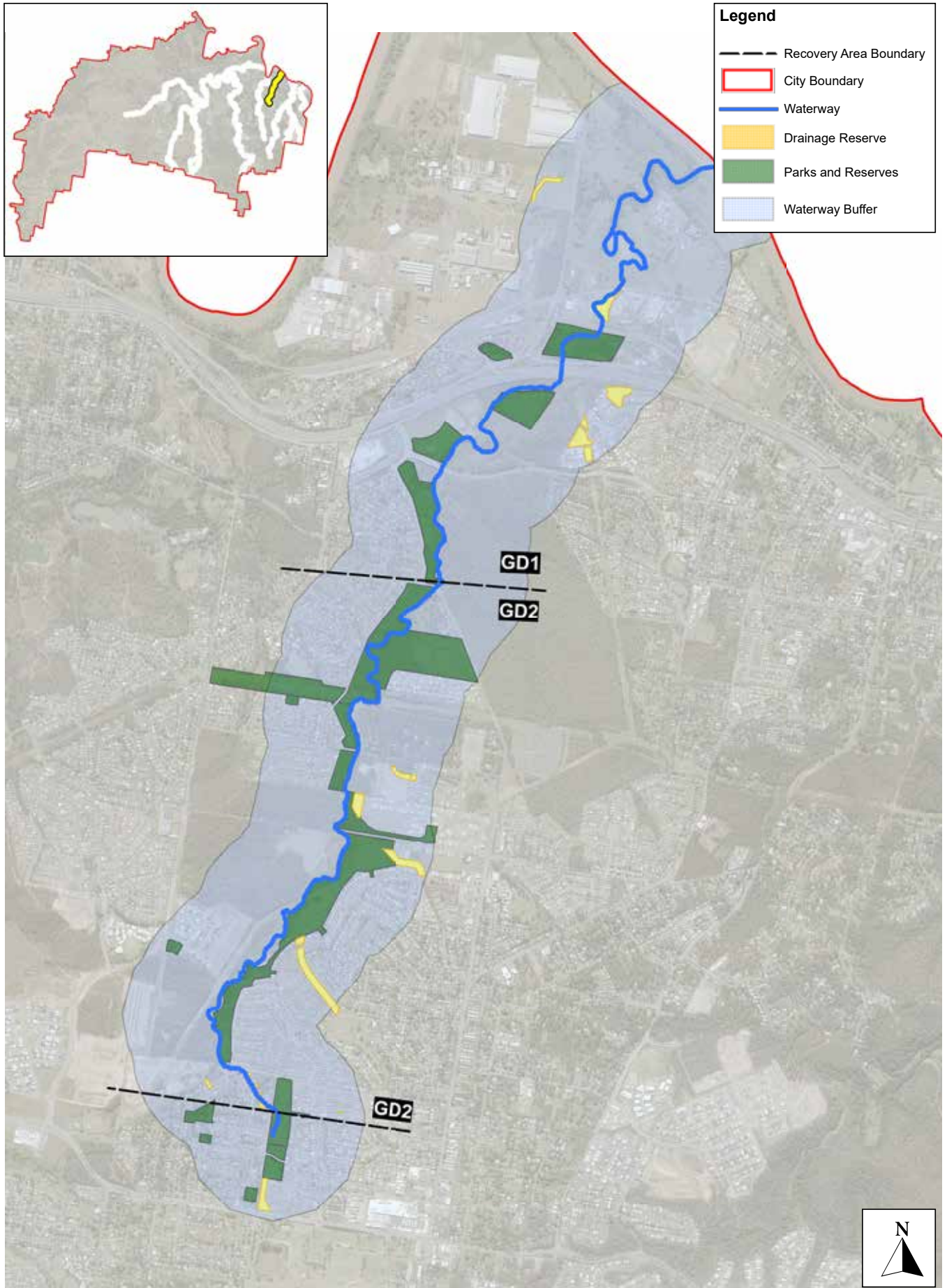


Figure 4: Context map of the Goodna Creek platypus recovery area.

## GD1 - Brisbane River to Kruger Parade

- Management objectives
  - Improve all aspects of habitat quality
- Background
  - Mix of land uses from industrial to conservation land
  - Large stretch of the creek north of the Ipswich Motorway owned by Department of Transport and Main Roads (DTMR)
  - Relatively poor and scattered riparian vegetation north of the Ipswich Motorway
  - Banks north of the Ipswich Motorway are eroded, have low stability and therefore unlikely to constitute quality platypus habitat
  - Main channel is piped under the Ipswich train line with a nearby dry cell culvert to divert high flows. There does not appear to be a continuous flow of water in this area and is likely to present a significant barrier
  - Habitat south of the highway ranges from poor to moderate quality
- There are some deep pools that would provide suitable habitat in Redbank Rifle Range however connectivity under Kruger Parade is poor
- Water is generally turbid
- Large amounts of rubbish and other material that could cause risk of mortality to platypus.
- Threats (known and potential)
  - Poor bank stability and limited burrowing opportunities
  - Poor longitudinal connectivity
  - Waste and pollutants
  - Impacts of domestic dogs
  - Multiple road crossings with a number of potential barriers.
- Evidence of platypus
  - No evidence to date.
- Habitat quality score (two samples)

Table 15: Habitat quality score. Sample taken from Pan Pacific Peace Gardens, Redbank.

Habitat variable	Score
Bank variables/geomorphology	16
In-stream variables	7
Connectivity and predation	6
<b>Total</b>	<b>29/60</b>

Table 16: Habitat quality score. Sample taken from Goupong Park, Collingwood Park.

Habitat variable	Score
Bank variables/geomorphology	10
In-stream variables	6
Connectivity and predation	5
<b>Total</b>	<b>21/60</b>

- Actions
  - Engage with DTMR and other landholders over the land north of the Ipswich Motorway. Explore the potential of increasing riparian vegetation and bank stability along the primary stretch of creek adjoining the Brisbane River
  - Undertake detailed assessment of the various underpasses in this recovery area and scope potential solutions for improving connectivity between the Brisbane River and better quality areas of Goodna Creek
  - Engage with Queensland Rail and devise options for improving flow connectivity under the Ipswich rail line.

## GD2 - Kruger Parade to Garland Street

- Management objectives
  - Manage impacts of future and ongoing urban development.
- Background
  - Banjo Patterson Park has some high quality habitat, although has limited potential considering poor quality habitat downstream
  - Substrate is very sandy and water is quite turbid in parts
  - Banjo Patterson Park contains an off leash dog park and the area in general has a lot of dog walkers
  - Upstream from Banjo Patterson Park the creek gets very shallow during low flows unlikely to contain suitable habitat for platypus in the long term
  - Several major housing developments have been approved or are proposed up stream
  - This development is likely to result in erosion and sediment run off downstream in the better quality habitat areas
  - The creek dissipates into a lower order stream beyond Harry Ratnam Park.
- Threats (known and potential)
  - Increased erosion and sedimentation from urban development
  - Increased pollution and recreational activities from urban development
- Evidence of platypus
  - No evidence to date.
- Habitat quality score

Table 17: Habitat quality score. Sample taken from Banjo Patterson Park, Collingwood Park.

Habitat variable	Score
Bank variables/geomorphology	17
In-stream variables	8
Connectivity and predation	8
<b>Total</b>	<b>33/60</b>

- Actions
  - Undertake annual inspections of the recovery area to identify and flag any upcoming or new erosion and sediment control issues from adjacent development sites. Any potential issues should be raised with councils Regulatory Services Branch.



# SIX MILE CREEK

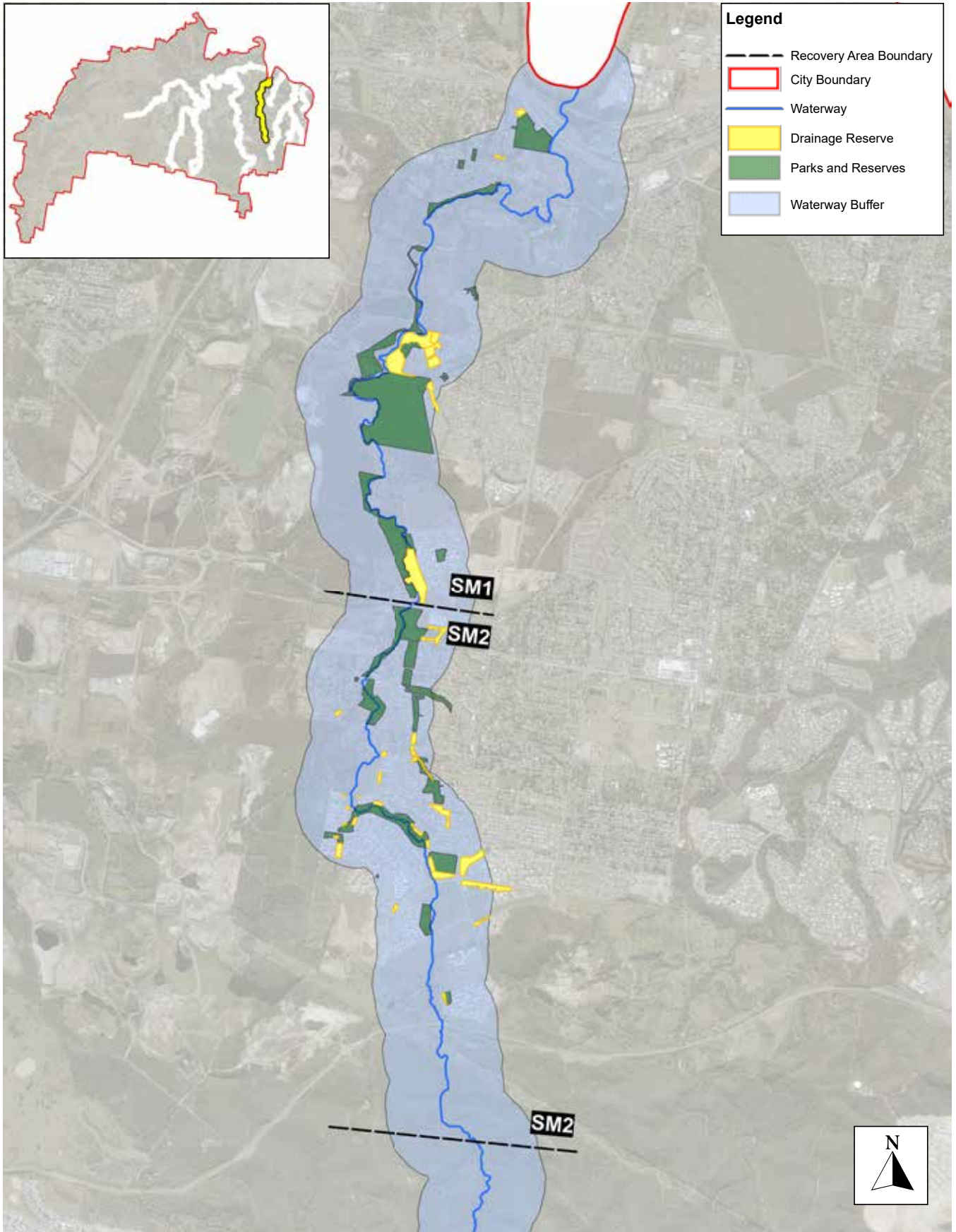


Figure 5: Context map of Six Mile Creek platypus recovery area.

## SM1 - Brisbane River to Redbank Plains Road

- Management objectives
  - Improve bank stability and reduce erosion
  - Remove barriers to movement
  - Increase riparian vegetation cover.
- Background
  - Contains the tenth ranked fish barrier requiring rectification in Ipswich just north of Old Ipswich Road
  - The barrier is a rock weir and requires either a rock ramp or removal for rectification
  - Despite having a large portion of the creek being in council parks and reserve system and being mostly vegetated, the habitat quality is moderate for platypus
  - Some pockets of better habitat amongst other poorer quality habitat
  - Many areas have large erosion issues and poorly formed banks
  - The substrate is generally very sandy
  - Larger intact areas of vegetation like Collingwood Drive Transmission have issues with 4wd vehicles destroying habitat in the riparian areas
  - A number of dams associated with mining activities are in close proximity to the main channel and would connect during high flow events
- The area frequently has wildfires throughout the vegetation areas, notably Bailey Street Reserve and the surrounding area
- Potentially a population of people who walk domestic dogs in the council reserves adjacent to the creek, although no information on numbers.
- Threats (known and potential)
  - Potential pollution from tailing dams and mining voids
  - Sedimentation and erosion
  - Lack of stable banks for burrowing
  - Barrier to platypus movement
  - Proposals from developers in Swanbank to dewater mining voids to Six Mile Creek
  - Interactions with domestic dogs.
- Evidence of platypus
  - Two confirmed records of platypus through eDNA surveys
  - One eDNA record upstream from the Old Ipswich Road fish barrier
  - One eDNA record in Bailey Street Reserve.
- Habitat quality score (two samples)



Table 18: Habitat quality score. Sample taken from Old Ipswich Road, Riverview.

Habitat variable	Score
Bank variables/geomorphology	14
In-stream variables	7
Connectivity and predation	7
<b>Total</b>	<b>28/60</b>

Table 19: Habitat quality score. Sample taken from Six Mile Creek Wildlife Corridor, Collingwood Park.

Habitat variable	Score
Bank variables/geomorphology	20
In-stream variables	10
Connectivity and predation	11
<b>Total</b>	<b>41/60</b>

■ Actions

- Develop detailed design, obtain planning approval and implement works to retrofit the barrier near Old Ipswich Road with a suitable connectivity solution
- Improve erosion and sediment control in Collingwood Drive Transmission Reserve
- Undertake plantings of riparian vegetation on the following Council properties:
  - Six Mile Creek Wildlife Corridor
  - Jumbaljdoo Park
  - Rhonda Road Reserve
  - Collingwood Drive Transmission
  - SM1 - 902SOP242719 (20 Br Ted Magee Drive, Collingwood Park)
  - Conway Street Park
- Assess the water quality and potential impacts (particular in high flow) from the various dams and artificial waterbodies in the recovery area. Where relevant work with the landholders and developers to undertake actions to reduce the risk of contamination, including appropriate development conditions. Where this is not achievable and there are potential contamination issues, raise with councils Regulatory Services Branch
- Create and implement a regular monitoring program for platypus in this recovery area
- Create a program for baseline assessment of pollutant loads in the adjacent disturbed lands and create a regular monitoring program in collaboration with councils Environmental Health Team.



## SM2 - Redbank Plains Road to White Rock

- Management objectives
  - Improve riparian habitat connectivity.
- Background
  - Creek traverses through highly developed parts of Redbank Plains
  - Channel is highly weed infested in certain areas
  - Channel has poorly formed banks in some areas that are not suitable for platypus burrowing
  - Some areas of the waterway appear to have deep pools suitable for drought refuge, but are unlikely to be used without suitable burrowing banks
  - There are a number of potential waterway barriers such as footpaths crossing the creek that are likely to increase the risk of predation
  - Large spanning opportunities for interactions between domestic dogs and platypus
  - Stretch of creek from Fernbrooke Boulevard to the Centenary Highway has almost no riparian vegetation
  - Other areas of good quality riparian vegetation separated by large areas with minimal to no riparian vegetation
- Stretch of creek through White Rock-Spring Mountain Conservation Estate (WRSMCE) is well vegetated
- However the banks in WRSMCE are extremely sandy and prone to collapsing and therefore would not suit platypus.
- Threats (known and potential)
  - Poor bank stability and formation
  - Lack of riparian vegetation and subsequent poor in stream habitat
  - Pollution from urban areas
  - Erosion and sedimentation
  - Potential impacts from domestic dogs.
- Evidence of platypus
  - Anecdotal records of platypus in Sam’s Reserve, south of Redbank Plains Road and near Strollers Cricket Club
  - No successful eDNA records or confirmation of anecdotal records.
- Habitat quality score

Table 20: Habitat quality score. Sample taken from Sam’s Reserve, Redbank Plains.

Habitat variable	Score
Bank variables/geomorphology	16
In-stream variables	6
Connectivity and predation	9
<b>Total</b>	<b>31/60</b>

- Actions
  - Undertake plantings of riparian vegetation on the following council properties:
    - Sam’s Reserve
    - Walden Street Park (and the land adjacent with unclear ownership)
    - SM2 - 941SP288663 (47A Magpie Crescent, Redbank Plains)
    - SM2 - 915SP231997 (26 Fernbrooke Boulevard, Redbank Plains)
    - SM2 - 999SP257092 (8A Fernbrooke Boulevard, Redbank Plains)
    - SM2 - 998SP257092 (8B Fernbrooke Boulevard, Redbank Plains)
    - Blue Gum Park
  - Ensure developers in Redbank Plains increase riparian vegetation cover along the Recreation Zone between White Rock-Spring Mountain Conservation Estate and Grampian Drive
  - Engage with landholders along Verrankamp Road and Griffiths Road regarding platypus conservation and councils Conservation Partnerships Program
  - Create a program for baseline assessment of pollutant loads in the adjacent disturbed lands and create a regular monitoring program in collaboration with councils Environmental Health Team.

# BUNDAMBA CREEK

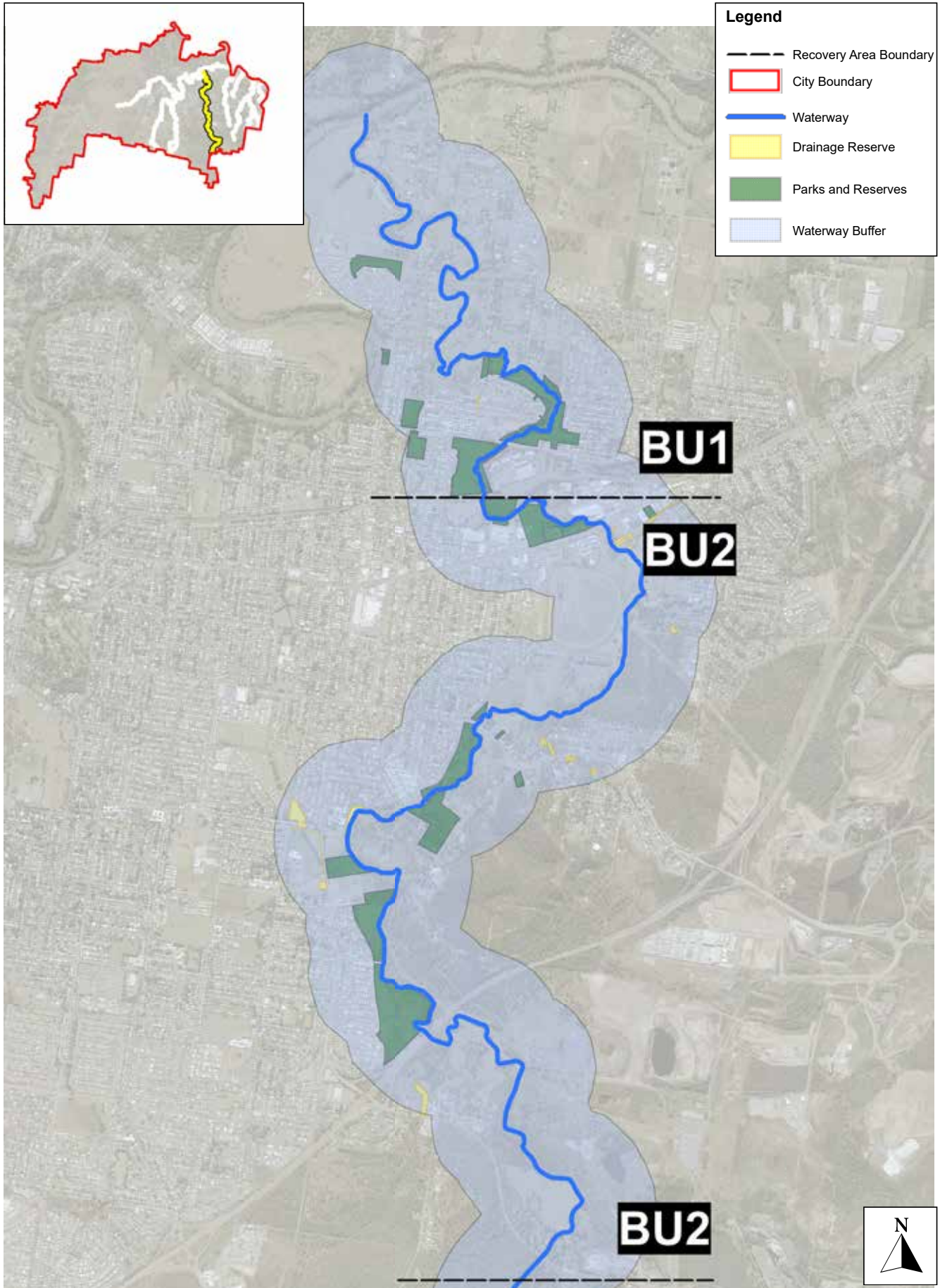


Figure 6: Context map of Bundamba Creek platypus recovery area, northern section.

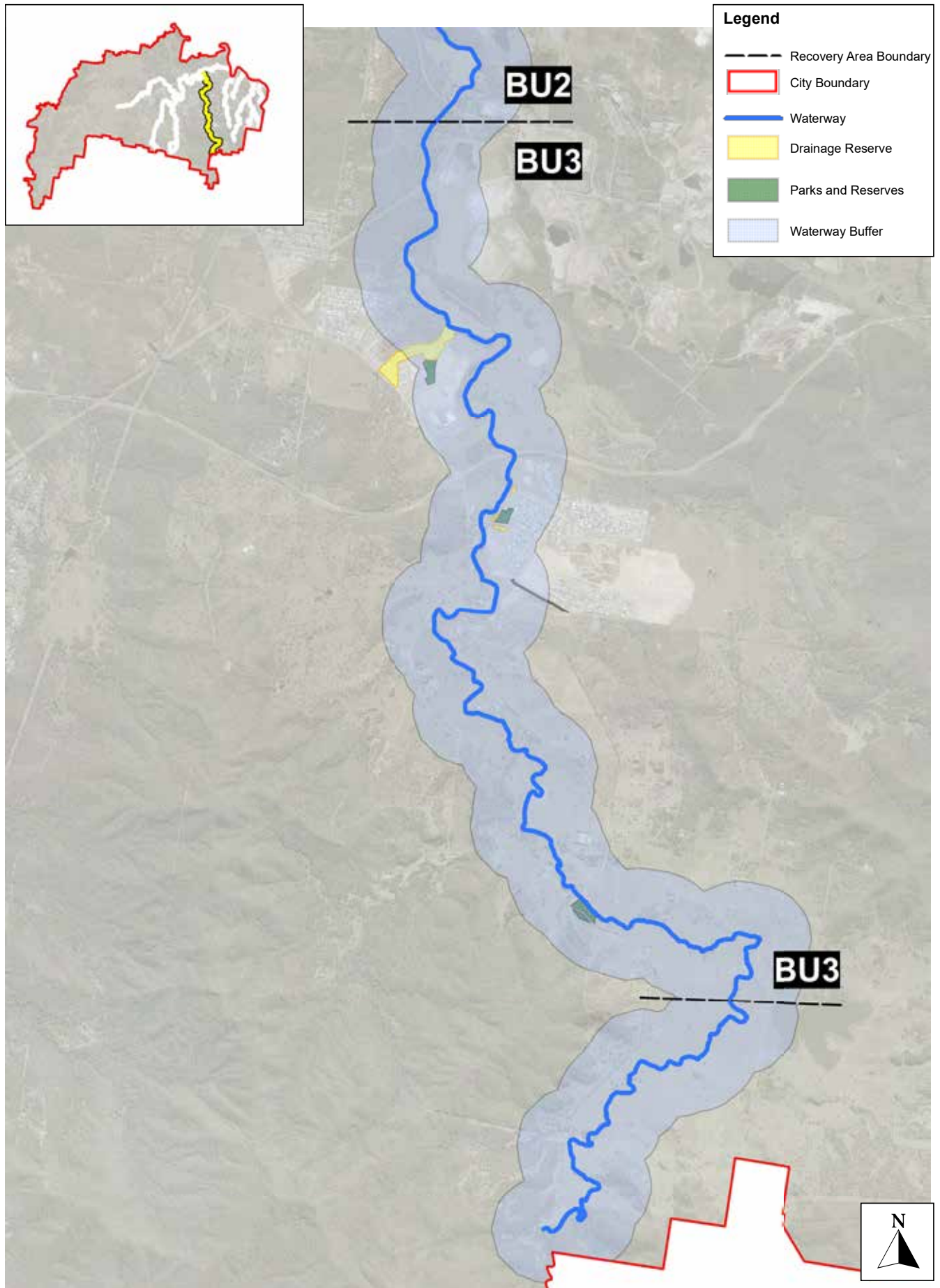


Figure 7: Context map of Bundamba Creek platypus recovery area, southern section.

## BU1 - Bremer River to Brisbane Road

- Management objectives
  - Improve riparian vegetation cover.
- Background
  - Scattered riparian vegetation outside of councils reserves
  - Large number of private landholders along the creek with minimal riparian vegetation
  - Contains some good habitat through areas held in council reserve with high banks and good in-stream habitat
  - Significant debris and rubbish within the channel in some areas
  - Riparian revegetation in Fail Park and Tite Family Park has been planted in the last five years
  - Sandy substrate.
- Threats (known and potential)
  - Poor riparian vegetation cover
  - Waste and pollutants
  - Poor bank stability.
- Evidence of platypus
  - No confirmed evidence of platypus presence.
- Habitat quality score

Table 21: Habitat quality score. Sample taken from Fail Park, Bundamba.

Habitat variable	Score
Bank variables/geomorphology	23
In-stream variables	11
Connectivity and predation	8
<b>Total</b>	<b>42/60</b>

- Actions
  - Undertake plantings of riparian vegetation on the following council properties:
    - David Street Reserve
    - Fail Park
    - Tite Family Park
    - Jack Barkley Park
    - BU1 - 150RP88584 (31 Kirk Street, Bundamba)
    - BU1 - 151RP88584 (33 Kirk Street, Bundamba)
  - Increase the number of landholders engaged in a council Landholder Conservation Partnership, targeting Kirk Street and Keith Street, Bundamba and Lamont Street, North Booval:
    - Kirk Street, Bundamba
    - Keith Street, Bundamba
    - Lamont Street, North Booval
    - Oxford Street, North Booval
    - David Street, North Booval
  - Create a program for baseline assessment of pollutant loads in the adjacent industrial areas and create a regular monitoring program in collaboration with councils Environmental Health Team.

## BU2 - Brisbane Road to Swanbank Road

- Management objectives
  - Improve longitudinal connectivity
  - Improve in stream habitat complexity
  - Infill plant selected areas of riparian vegetation
  - Increase community participation in platypus conservation
  - Manage threats from existing residential development.
- Background
  - High quality habitat in council reserves through Rotary Park to Ipswich Turf Club and George Palmer Park
  - Several parks have footpaths running adjacent
  - All sampled sites generally lack large woody debris and sufficient pool depth
  - Concreted channel and poor quality habitat under the Brisbane Road crossing near Bundamba Bunnings
  - The Ipswich Turf Club side of the bank has minimal riparian vegetation
  - Large areas of remnant vegetation on Blackall Street owned by investors and zoned Special Opportunity. These blocks are heavily constrained with under mining
  - Contains the eighth ranked fish barrier requiring rectification in Ipswich across East Owen Street. The barrier is a pipe causeway and requires new box culverts or a rock ramp for rectification
  - Good habitat through council reserves through Raceview and Blackstone areas, including George Palmer Park, Evelyn Dodds Cultural Reserve and Bremervale Park. Bremervale Park has walking paths
  - Relatively unknown habitat quality on the southern side of the Cunningham Highway.
- Threats (known and potential)
  - Potential impacts from domestic dogs and other direct human activities
  - Potential barriers to platypus movement and instream habitat connectivity
  - Lack of deep pools for drought refuge
  - Potential impacts of frequent flooding
  - Poor instream habitat quality
  - Potential impacts from pollution and waste
  - Potential impacts from recreational fishing.
- Evidence of platypus
  - Anecdotal records of platypus at Rotary Park and behind Llewelyn Toyota in Bundamba
  - Anecdotal records of platypus at Bundamba Bunnings prior to the creek realignment
  - Unsuccessful attempts at obtaining platypus eDNA in Rotary Park, Bundamba
  - One successful survey for eDNA in George Palmer Park, Silkstone
  - One successful survey for eDNA outside Ipswich Turf Club.
- Habitat quality score (three samples)



Table 22: Habitat quality score. Sample taken from George Palmer Park, Silkstone.

Habitat variable	Score
Bank variables/geomorphology	21
In-stream variables	9
Connectivity and predation	7
<b>Total</b>	<b>37/60</b>

Table 23: Habitat quality score. Sample taken from Rotary Park, Bundamba.

Habitat variable	Score
Bank variables/geomorphology	21
In-stream variables	9
Connectivity and predation	8
<b>Total</b>	<b>38/60</b>

Table 24: Habitat quality score. Sample taken from Ipswich Turf Club, Bundamba.

Habitat variable	Score
Bank variables/geomorphology	22
In-stream variables	8
Connectivity and predation	12
<b>Total</b>	<b>42/60</b>

▪ Actions

- Install signage covering appropriate behaviour in platypus habitat, including opera house traps and domestic dogs
- Develop detailed design, obtain planning approval and implement works to retrofit the fish barrier across East Owen Street
- Create and implement a regular monitoring program for platypus in this recovery area
- Where feasible and necessary manually install large woody debris and deep pools to improve in stream habitat quality
- Establish a relationship with Ipswich Turf Club regarding platypus conservation
- Create a program for baseline assessment of pollutant loads in the adjacent industrial areas and create a regular monitoring program in collaboration with councils Environmental Health Team.

### BU3 - Swanbank Road to Daly's Lagoon

- Management objectives
  - Minimise impacts from urban development on more viable habitat downstream.
- Background
  - Variety of land uses including heavy industry and waste facilities between the Cunningham Highway and Centenary Highway
  - Western side of the creek through the same area is predominantly remnant vegetation
  - Habitat quality through much of the Swanbank area is relatively unknown due to site inaccessibility
  - High density urban development through Ripley Valley and South Ripley
  - Developers through the Ripley Valley Priority Development Area (PDA), developers are required to revegetate or otherwise achieve a 50m buffer to Bundamba Creek
  - Developments have filled in several wetlands and altered the hydrology of the upper Bundamba Creek catchment
  - There is likely to be ongoing issues with sedimentation as a result of activities in Ripley Valley
  - In the very upper catchment near Daley's Lagoon the creek is shallow and doesn't contain sufficient deep pools to maintain a platypus population long term.
- Threats (known and potential)
  - Altered hydrology from urban development
  - Erosion and sedimentation
  - Pollution and waste from urban areas.
- Evidence of platypus
  - No evidence of platypus.
- Habitat quality score

Table 25: Habitat quality score. Sample taken Ripley Road Bridge, South Ripley.

Habitat variable	Score
Bank variables/geomorphology	20
In-stream variables	8
Connectivity and predation	6
<b>Total</b>	<b>34/60</b>

- Actions
  - Ensure platypus outcomes are key considerations in any development works undertaken by developments in Ripley Valley. In particular ensuring effective erosion and sediment control and limit construction of new waterway barriers
  - Undertake annual inspections of the recovery area to identify and flag any upcoming or new erosion and sediment control issues coming from adjacent development sites. Any potential issues should be raised with councils Regulatory Services Branch.

## BREMER RIVER

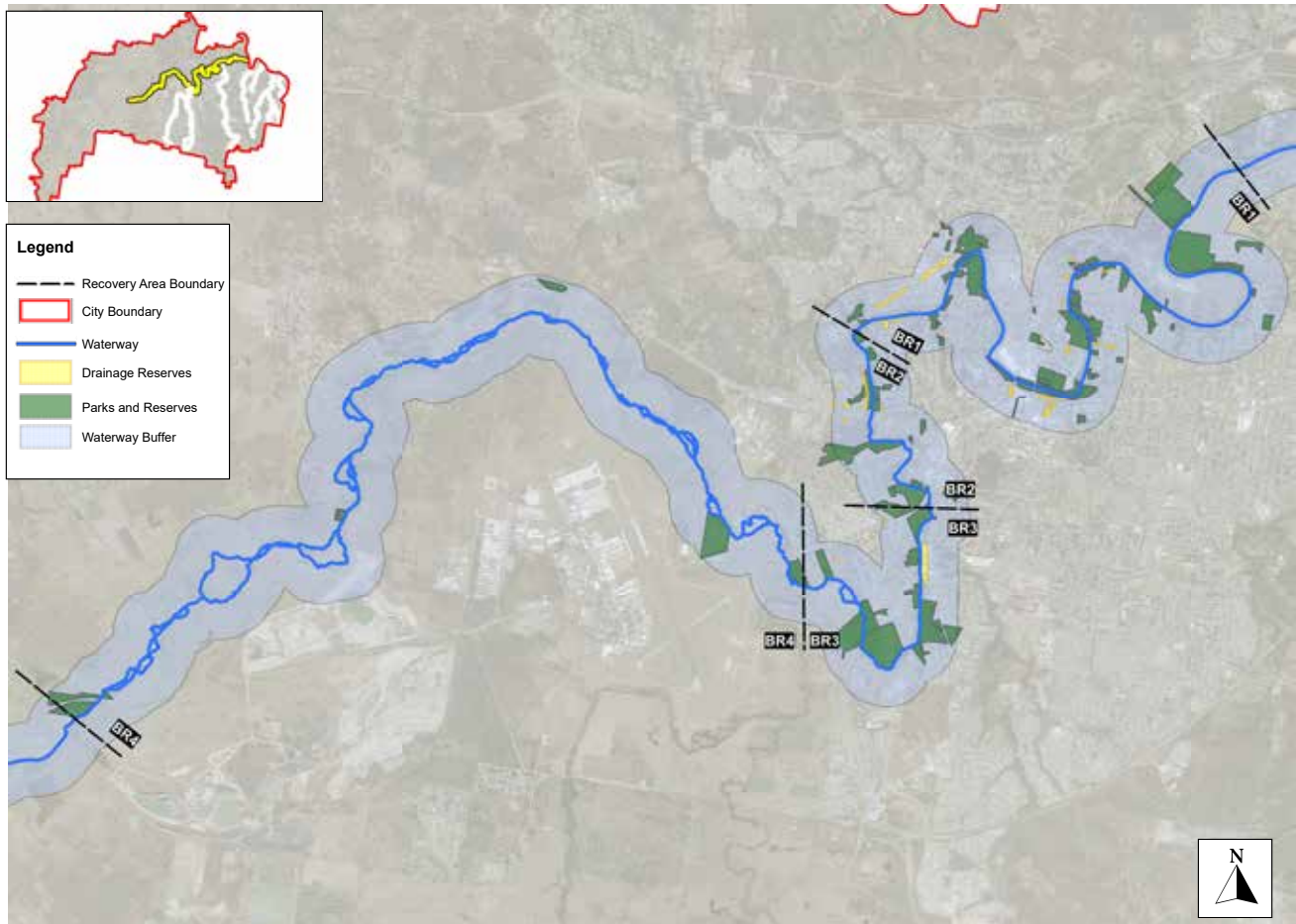


Figure 8: Context map of Bremer River platypus recovery area.



## BR1 - Bremer River and Bundamba Creek confluence to Shapcott Park

- Management objectives
  - Maintain high quality platypus habitat
  - Improve riparian vegetation cover
  - Increase community participation in waterway conservation
  - Continue to search for evidence of platypus.
- Background
  - East of the Ipswich CBD has poor riparian vegetation cover with a number of prime locations for riparian revegetation
  - Downstream of the Bundamba and Bremer River confluence is not suitable for platypus long term as it is tidal and saline. However, platypus may move through this area to disperse from one catchment to another
  - The Bremer River is tidal up to approximately the Riverlink Shopping Centre
  - Several landholders in the recovery area with a conservation agreement with council, many targeted specifically at waterway health
  - Much of the catchment has had impacts to its hydrology following major flooding events in 2011 and several floods since
- The frequency of flooding can have impacts on the longevity of platypus populations in certain areas
- West of the Riverlink Shopping Centre has some good platypus habitat with defined banks and woody riparian vegetation, woody debris and deep pools
- Despite seemingly good habitat, good macroinvertebrate records and fish diversity (at least west of the CBD) no records of platypus have been confirmed in this section of the Bremer River.
- Threats (known and potential)
  - Poor water quality
  - High turbidity and sedimentation
  - Lack of riparian vegetation cover
  - Large flooding events.
- Evidence of platypus
  - Anecdotal of records from private residents in the Woodend area.
- Habitat quality score

Table 26: Habitat quality score. Sample taken from Shapcott Park, Woodend.

Habitat variable	Score
Bank variables/geomorphology	24
In-stream variables	12
Connectivity and predation	11
<b>Total</b>	<b>47/60</b>

- Actions
  - Undertake plantings of riparian vegetation on the following council properties:
    - Unnamed Reserve off Oxford Street, North Booval:
    - Permaculture Park
    - McLeod Street Park
    - Bremer Parade Reserve
    - Woodend Park.
  - Increase the number of landholders engaged in a Landholder Conservation Partnerships, targeting Williams Street West, Blackall Street and between Jacaranda Street and North Station Road.

## BR2 – Shapcott Park to Old Toowoomba Road

- Management objectives
  - Determine reason for current platypus absence
  - Continue to search for evidence of platypus
  - Maintain high quality platypus habitat.
- Background
  - Bank stability and riparian vegetation is well connected and high quality
  - Mixture of wider and deeper pools at semi regular intervals throughout the recovery area
  - A number of council reserves provide protection of riparian habitat
  - Fish surveys in Shapcott Park indicate very high fish diversity including bass and lungfish
  - Several bridge crossings that still maintain habitat connectivity
  - Most reserves have limited opportunities for public and domestic pet access directly to the waterway. This is with the exception of Jim Finimore Park
  - Despite high quality habitat in most areas, no platypus have been confirmed within the area
  - Healthy waterways reports cards consistently score the Bremer River as having poor water quality. However, this is not necessarily a good indicator of platypus presence. Especially considering other species like fish appear to be relatively successful in the Bremer River.
- Threats (known and potential)
  - Potential impacts of large flooding events
  - Potential impacts of domestic pets and feral predators
  - Potential pollution impacts from upstream and other water quality issues
  - Potentially disconnected from a source population.
- Evidence of platypus
  - No current evidence of platypus populations
  - Multiple unsuccessful eDNA surveys at Avon Street Reserve, Leichhardt
  - Multiple unsuccessful eDNA surveys at Jim Finimore Park, One Mile.
- Habitat quality score (two samples)

Table 27: Habitat quality score. Sample taken from Avon Street Reserve, Leichardt.

Habitat variable	Score
Bank variables/geomorphology	28
In-stream variables	7
Connectivity and predation	11
<b>Total</b>	<b>46/60</b>

Table 28: Habitat quality score. Sample taken from Jim Finimore Park, One Mile.

Habitat variable	Score
Bank variables/geomorphology	25
In-stream variables	9
Connectivity and predation	9
<b>Total</b>	<b>43/60</b>

- Actions
  - Continue to survey for presence of platypus
  - Conduct further investigations into the potential reasons for the absence of platypus in the Bremer River.

### BR3 - Old Toowoomba Road to Warrill Creek confluence

- Management objectives
  - Reduce potential pollutant run off
  - Maintain high quality banks and geomorphology
  - Continue to search for evidence of platypus.
- Background
  - Bank stability and riparian vegetation of generally high quality
  - Recovery area is primarily following council land either in reserve or drainage reserve
  - Some areas have been observed as drying out fairly rapidly during drought periods resulting in poor water flow connectivity and increased predation risk. For example, Oakhill Street Park
  - A series of drainage reserves back onto the creek behind industrial areas along Lobb Street
  - Some areas along Lobb Street have large waterbodies outside of the main channel. These are entirely on private land behind a car yard
  - The riverine area of George and Eileen Hastings Sports Centre formerly contained Berry's Weir which has since been retrofitted with a fishway providing aquatic connectivity. It does not present a barrier to platypus movement
  - Fairly limited community access to the river through this recovery area
- Churchill Abattoir sits on the southern bank of the river and is fairly devoid of riparian vegetation
- There is a large dam area next to the abattoir that is directly connective to the main channel
- Sample from Georgette Street indicates that there is relatively poor coarse woody debris. However analysis through aerial photographs suggests that this under estimates the total woody debris across the catchment.
- Threats (known and potential)
  - High effluent run-off, nutrient run-off and other potential pollutants from adjoining landuse
  - Potential impacts of large flooding events
  - Potential impacts of feral predators
  - Potential pollution impacts from upstream and other water quality issues
  - Potentially disconnected from a source population.
- Evidence of platypus
  - No evidence of platypus presence to date.
- Habitat quality score

Table 26: Habitat quality score. Sample taken from Shapcott Park, Woodend.

Habitat variable	Score
Bank variables/geomorphology	27
In-stream variables	7
Connectivity and predation	9
<b>Total</b>	<b>43/60</b>

- Actions
  - Continue to survey for presence of platypus
  - Continue to monitor water quality downstream of the Churchill abattoir
  - Investigate the potential for real time monitoring of water quality for rapid response to pollution events
  - Work with councils Environmental Health Team and the Department of Environment and Science to respond to any pollution events.

## BR4 - Warrill Creek confluence to Armstrong Park

- Management objectives
  - Reduce potential pollutant run off
  - Maintain high quality banks and geomorphology
  - Continue to search for evidence of platypus
  - Increase community participation in waterway conservation.
- Background
  - High to moderate quality riparian vegetation. Thin riparian areas or scattered vegetation in a number of areas
  - Relatively free of urban impacts, primarily rural landscape
  - Main channel splits and converges again in a number of locations
  - Recovery area follows the length of the Amberley RAAF base
  - Known area where use of PFAS firefighting chemicals has occurred
  - PFAS chemicals have an unknown but potential impact on prey items of platypus. This may in turn have secondary impacts on platypus through contamination of freshwater food chains. Platypus as an apex predator are especially vulnerable to secondary contamination impacts
  - Contains the equal first ranked fish barrier requiring rectification in Ipswich. Barrier is a V notch gauging weir and requires a cone (first ridge) or rock ramp to rectify
- West of the RAAF base the river runs along the boundary of the former coal mine at Jeebropilly
- This mine has recently ceased operation and is under rehabilitation
- The large area adjacent to the river has not been mined but has run cattle. This has resulted in removal of much of the vegetation. The edge of the mine comes close to the river in one location and may have resulted in some historic and ongoing contamination issues
- Pedestrian and general public access to the river is relatively limited
- Large fish and turtle kills have been recorded at Armstrong Park, Thagoona.
- Threats (known and potential)
  - Impacts from contamination events from adjoining landuse
  - Potential impacts of PFAS
  - Potential impacts of large flooding events
  - Potential impacts of feral predators
  - Impacts of stock in waterways
  - Potentially disconnected from a source population.
- Evidence of platypus
  - No evidence of platypus to date
  - Numerous unsuccessful eDNA survey results in Armstrong Park, Thagoona.
- Habitat quality score

Table 26: Habitat quality score. Sample taken from Shapcott Park, Woodend.

Habitat variable	Score
Bank variables/geomorphology	20
In-stream variables	9
Connectivity and predation	12
<b>Total</b>	<b>41/60</b>

- Actions
  - Target increased engagement in Landholder Conservation Partnerships west of the Amberley RAAF Base. Target actions at riparian vegetation and bank stability, including removing stock from waterways
  - Instigate or support research into the impact of PFAS contamination on platypus
  - Collaborate with relevant stakeholders regarding the future of the former mine site. Explore opportunities for improving riparian vegetation cover adjacent to the river either through potential acquisition or partnership
  - Continue to survey for presence of platypus including expanding scope of surveys to new properties where possible
  - Develop detailed design, obtain planning approval and implement works to retrofit the fish barrier within the recovery area in partnership with the private landowner
  - Investigate the potential for real time monitoring of water quality for rapid response to pollution events
  - Work with councils Environmental Health Team and the Department of Environment and Science to respond to any pollution events.

# MID BRISBANE RIVER

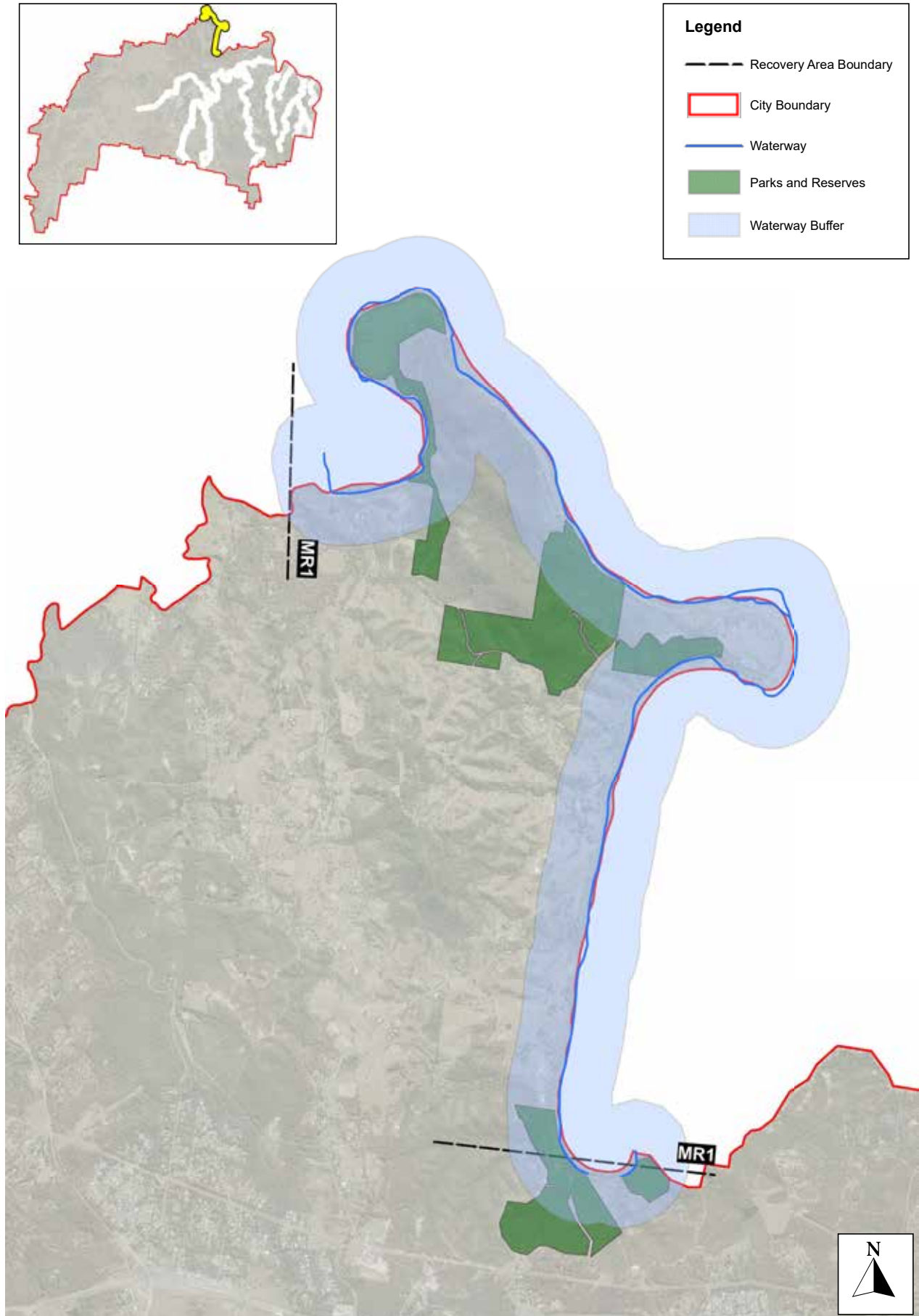


Figure 9: Context map of the mid-Brisbane River platypus recovery area.



## MR1 - Sapling Pocket to Kholo Bridge

- Management objectives
    - Monitor vine weed presence along the banks of the mid-Brisbane River and implement control programs to maintain tree and bank integrity
    - Maintain high quality platypus habitat
    - Reduce the potential impacts of future impacts of nature-based recreation and other embellishment
    - Continue to increase riparian vegetation on council land
    - Reduce impact of stock in the waterway
    - Increase the scope of platypus conservation in the mid-Brisbane River beyond the Ipswich LGA border.
  - Background
    - Known platypus populations with evidence of breeding and multiple generations
    - Follows a large stretch of the Brisbane River wrapping around most of the suburb of Pine Mountain
    - Variety of protected land including three council reserves and a State-owned nature refuge
    - Habitat is high quality with a complex series of deep pools, rock riffles and large woody debris on the banks
    - Large number of private landholders with a conservation agreement with council along Riverside Drive
    - Stock (cattle and deer) occasionally cross from the Brisbane side of Kholo across to Cameron's Scrub. This can cause erosion, turbidity, and destruction of bank habitat
  - From councils Pest Animal Management Program, wild dogs and foxes live in the flat areas of Sapling Pocket along the river
  - Cats claw creeper is a major threat to the vine scrub communities and riparian vegetation. Several programs are underway attempting to control cats claw in a number of areas however the scale of infestations requires targeted action to preserve the high quality areas
  - Previous records of platypus being caught in opera house traps at Kholo Gardens
  - Potential future embellishment of the recovery area for recreational activities such as kayaking and camping.
- Threats (known and potential)
    - Vine weeds destroying vegetation on the riverbanks
    - Potential predation from feral predators
    - Destruction of habitat by stock
    - Potential impact of increased visitors and associated infrastructure
    - Potential threats from poor fishing practices.
  - Evidence of platypus
    - Known population in the recovery area
    - Evidence of multiple individuals including breeding and juvenile platypus
    - Records from Sapling Pocket, Kholo Bridge and Kholo Gardens.
  - Habitat quality score (two samples)

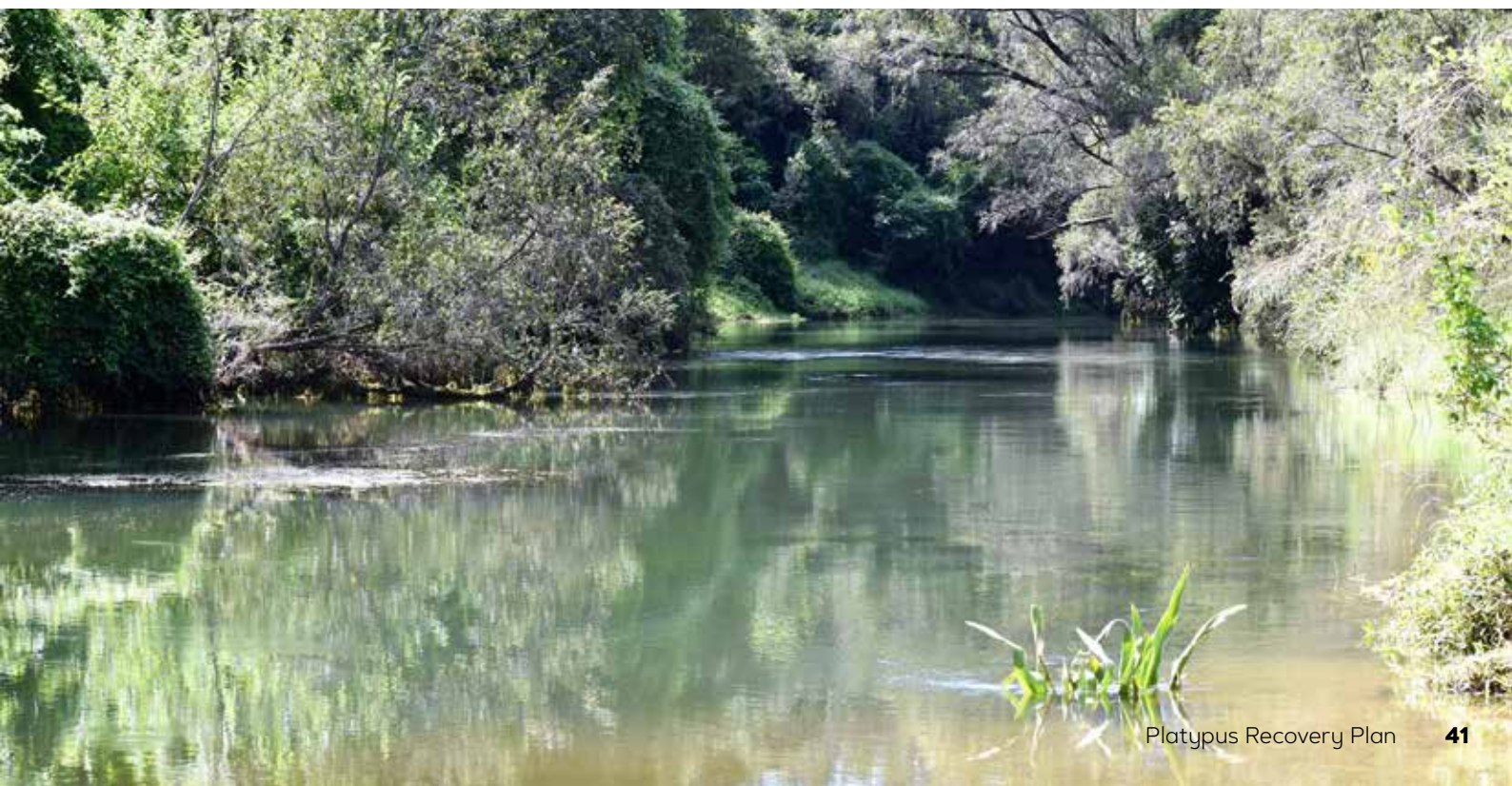


Table 31: Habitat quality score. Sample taken from Sapling Pocket, Pine Mountain.

Habitat variable	Score
Bank variables/geomorphology	24
In-stream variables	15
Connectivity and predation	14
<b>Total</b>	<b>53/60</b>

Table 32: Habitat quality score. Sample taken from Cameron’s Scrub, Pine Mountain.

Habitat variable	Score
Bank variables/geomorphology	24
In-stream variables	15
Connectivity and predation	14
<b>Total</b>	<b>55/60</b>

■ Actions

- Continue existing programs and invest in new works to control vine weeds such as cats claw creeper where there is an identified risk to bank stability. Conduct a full audit of the recovery area where there is not already sufficient data or understanding
- Install signage covering appropriate behaviour in platypus habitat, including opera house traps and domestic dogs
- Ensure platypus are carefully considered when undertaking future recreational embellishment of Pine Mountain
- Consider limiting the number and type of recreational users to protect platypus populations
- Investigate ways to limit stock crossing the river
- Continue to monitor and control feral predators within council owned and managed reserves
- Continue to work with private residents along Riverside Drive on waterway conservation and bank stability
- Potential opportunities to create a regular platypus monitoring program along Riverside Drive or in council reserves in partnership with WPSQ and conservation agreement landholders.



# WARRILL CREEK

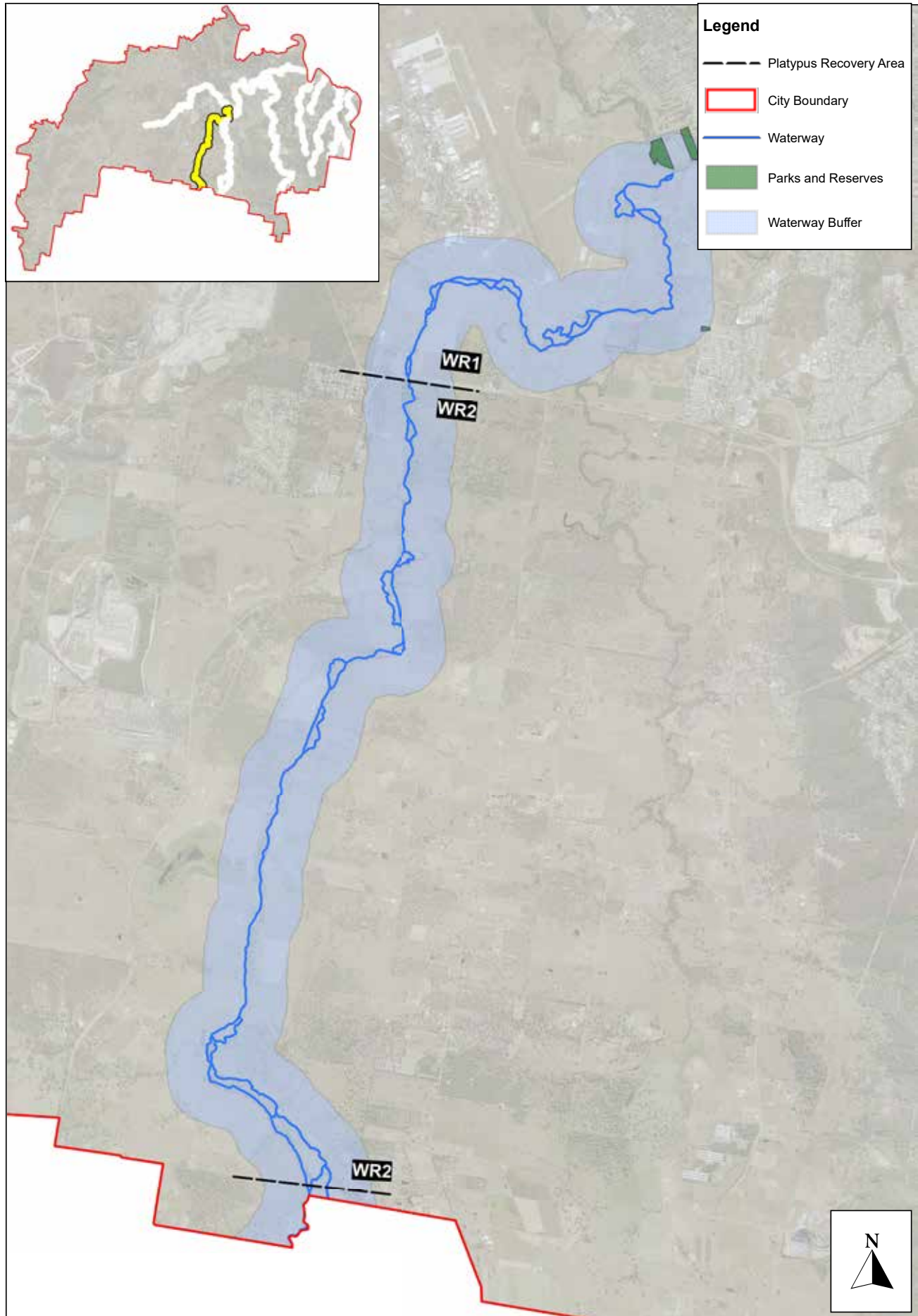


Figure 10: Context map of the Warrill Creek platypus recovery area.

## WR1 - Bremer confluence to Cunningham Highway through Amberley Air Base

- Management objectives
  - Reduce potential pollutant run off
  - Increase community participation in waterway conservation
  - Continue to search for evidence of platypus
  - Increase understanding of platypus and platypus habitat in the recovery area.
- Background
  - Creek winds along the eastern and southern boundaries of Amberley RAAF Base
  - Creek line is consistently but narrowly vegetated
  - Away from the creek line the landscape is predominantly cleared pastoral land
  - Landholders a mix of private landholders, RAAF Amberley, and pastoralists
  - Relatively unknown habitat quality given lack of accessibility to the creek bank
  - Known historic contamination events from the RAAF base including lead spills
  - Known area where use of PFAS firefighting chemicals has occurred. PFAS chemicals have an unknown but potential impact on prey items of platypus.
- Threats (known and potential)
  - Stock access to the waterway
  - Potential impacts of PFAS
  - Potential impacts of feral predators
  - Potentially disconnected from a source population.
- Evidence of platypus
  - No evidence to date.
- Habitat quality score

Table 33: Habitat quality score. Sample taken from Cunningham Highway, Purga.

Habitat variable	Score
Bank variables/geomorphology	21
In-stream variables	8
Connectivity and predation	8
<b>Total</b>	<b>37/60</b>

- Actions
  - Instigate or support research into the impact of PFAS contamination on platypus
  - Investigate the potential for real time monitoring of water quality for rapid response to pollution events
  - Work with councils Environmental Health Team and the Department of Environment and Science to respond to any pollution events
  - Target landholders along Warrill Creek in the Yamanto and Amberley suburbs for potential Landholder Conservation Partnership with council.

## WR2 - Cunningham Highway to Ten Mile Swamp

- Management objectives
  - Increase community participation in waterway conservation
  - Continue to search for evidence of platypus
  - Increase in-stream connectivity.
- Background
  - Connectivity to ten mile swamp which is the largest swamp in Ipswich LGA
  - Creek meanders through mostly grazing properties and other rural purposes
  - Riparian vegetation is typically present, however the majority is only a thin strip directly adjacent to the channel
  - The main channel diverges and reconnects at a number of points
  - Public access to the creek is limited and thus relatively little is known about the habitat quality throughout most of the creek
  - Contains the equal first ranked fish barrier in Ipswich. This is a weir owned by DNRM and a cone (first ridge) or rock ramp is required to rectify
  - Contains the third ranked fish barrier in Ipswich. This is a weir with a sheet pile and gabion basket. It requires complete removal.
- Threats (known and potential)
  - Stock access to the waterway
  - Potential impacts of feral predators
  - Potentially disconnected from a source population
  - Numerous high risk barriers to connectivity.
- Evidence of platypus
  - No evidence to date.
- Habitat quality score (two samples)

Table 34: Habitat quality score. Sample taken from Cunningham Highway, Purga.

Habitat variable	Score
Bank variables/geomorphology	21
In-stream variables	8
Connectivity and predation	8
<b>Total</b>	<b>37/60</b>

Table 35: Habitat quality score. Sample taken from Cherish the Environment Koala property, Mutdapilly.

Habitat variable	Score
Bank variables/geomorphology	25
In-stream variables	10
Connectivity and predation	13
<b>Total</b>	<b>48/60</b>

- Actions
  - Develop detailed design, obtain planning approval and implement works to retrofit the fish barriers within the recovery area in partnership with the private landowner
  - Target landholders in Willowbank, Mutdapilly and Purga for potential Landholder Conservation Partnerships with council.

# PURGA CREEK

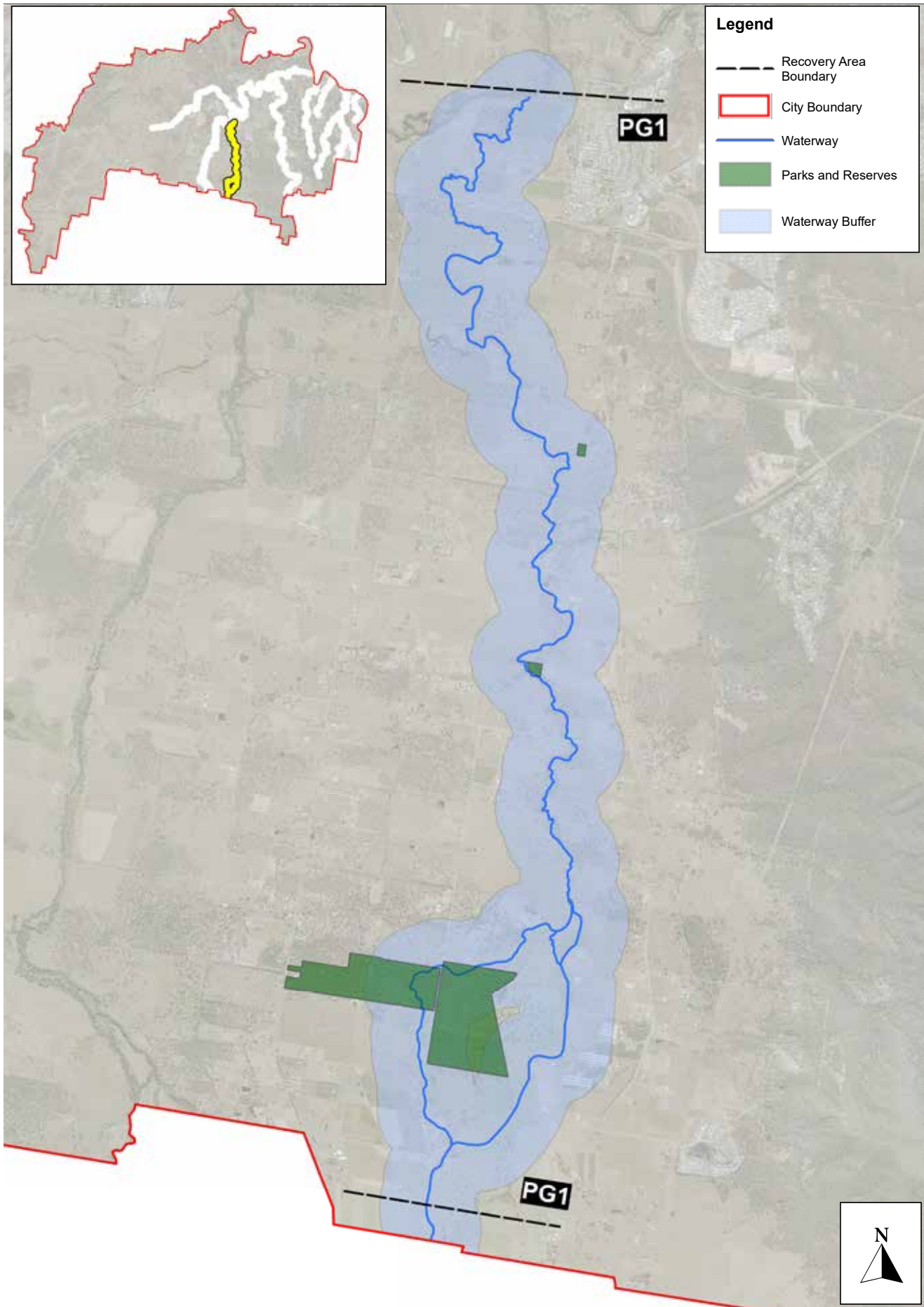


Figure 11: Context map the Purga Creek platypus recovery area.

## PG1 - Warrill confluence to Purga School Road

- Management objectives
  - Increase community participation in waterway conservation
  - Continue to search for evidence of platypus.
- Background
  - Main channel mostly vegetated although very thinly in most areas
  - Majority of the land use is cattle grazing with some areas of retained vegetation. This is mostly as result of significant numbers of threatened *Melaleuca irbyana* and endangered regional ecosystem 12.3.3
  - Very little council land in the catchment
  - Small number of landholders with Conservation partnerships with council
  - Creek becomes less defined around Purga Nature Reserve and the channel is not deep enough or have suitable banks for platypus to burrow.
- Threats (known and potential)
  - Stock access to the waterway
  - Potential impacts of feral predators
  - Potentially disconnected from a source population.
- Evidence of platypus
  - No evidence to date.
- Habitat quality score

Table 36: Habitat quality score. Sample taken from Purga School Road, Purga.

Habitat variable	Score
Bank variables/geomorphology	25
In-stream variables	9
Connectivity and predation	7
<b>Total</b>	<b>38/60</b>

- Actions
  - Target landholders in the Purga area for potential conservation partnerships with council.



## 6. IMPLEMENTATION

### 6.1 COLLECTIVE LIST OF ACTIONS

Note that some actions have been summarised and included in a relevant action in this table. Many of the original actions have further detail in their relevant recovery area subsection.

Table 37: Summarised list of common actions and corresponding recovery areas.

Action	Recovery area	Measure of success	Responsible officer(s)
Complete a detailed study of potential movement barriers, their severity, potential solutions and probable cost. Remove existing identified barriers	SC1, GD1, WG1, SM1, BU2, BR4, WR2	Completion of study. Removal and remediation of barriers	Waterway Health Officer
Complete a full weed survey of the channel and develop a prioritised and feasible weed control program in attempt to improve flow in the channel	SC1, SC2, SC3	Creation of monitoring program and reinstatement of flows	Planning Officer (Biodiversity)
Determine origins of the sand slugs, undertake action to mitigate further erosion and investigate feasibility of remediation	SC1, WG3	Sand slugs removed and causes suitably mitigated	Waterway Health Officer and Environmental Engineer
Create a program for baseline assessment of pollutant loads and create a regular monitoring program in collaboration with councils Environmental Health team	SC1, SM1, SM2, BU1, BU2	Baseline data attained	Planning Officer (Biodiversity) and Environmental Health Team
Create and implement a regular monitoring program for platypus	SC1, SC2, WG1, OP1, SM1, BU2, MR1	Monitoring program established in all listed recovery areas	Planning Officer (Biodiversity)
Install warning signs about the risk of domestic dogs in key platypus areas	SC2, WG1, WG2, OP1, BU2, MR1	Signs installed in listed recovery areas	Planning Officer (Biodiversity)
Where feasible manually install large woody debris to improve in-stream habitat quality	SC2, WG1, BU2	Improved in-stream habitat quality in listed recovery areas	Waterway Health Officer
Target landholders for potential involvement in councils Landholder Conservation Partnerships Program	SC2, WG2, SM2, BU1, BU2, BR1, BR4, WR1, WR2, PG1	Number of partners along waterways in listed recovery areas increased	Program Officer (Natural Environment)
Investigate options for stabilising banks and improving in stream habitat	SC3, WG3, BU2, MR1	Improved bank stability/geomorphology score in listed recovery areas	Waterway Health Officer
Undertake riparian plantings on council land	WG1, WG2, GD1, SM1, SM2, BU1, BR1	Improved connectivity score in listed recovery areas	Waterway Health Officer
Undertake yearly inspections of the recovery area to identify and flag any upcoming or new erosion and sediment control issues coming from adjacent development sites	WG2, OP1, GD2, BU3	Annual inspection undertaken	Planning Officer (Biodiversity) and Environmental Health Team



Action	Recovery area	Measure of success	Responsible officer(s)
Devise a remediation and sediment management plan for council land	WG3, SM1	Relevant works included in councils Capital Works Program	Planning Officer (Biodiversity), Environmental Engineer and Waterway Health Officer
Ensure platypus outcomes are duly considered in development assessment and imposed conditions	WG2, OP1, SM2, BU3	No measure available	Planning Officer (Biodiversity) and Environmental Assessment Team
Assess the water quality and potential impacts (particular in high flow) from the various dams and artificial waterbodies in the recovery area	SM1	Assessment undertaken	Waterway Health Officer
Continue to survey for presence of platypus	BR2, BR3, BR4	Data collected annually	Planning Officer (Biodiversity) and Waterway Health Officer
Conduct further investigations into the potential reasons for absence of platypus in the Bremer River	BR2	Data collected annually	
Investigate potential for real time monitoring of water quality for rapid response to pollution events	BR3, BR4, WR1	No measure available	Planning Officer (Biodiversity) and Waterway Health Officer
Instigate or support research into the impact of PFAS contamination on platypus	BR4, WR1	No measure available	Planning Officer (Biodiversity) and Waterway Health Officer
Continue programs to control vine weeds where they pose a risk to bank stability	MR1	Area treated for cats claw creeper or similar vine weeds within the recovery area	Waterway Health Officer
Ensure that platypus management is carefully considered in any recreational embellishment of Pine Mountain	MR1	Continued platypus presence in key areas within the recovery area	Planning Officer (Biodiversity) and Waterway Health Officer
Investigate methods to stop stock access into the river	MR1	Stock absence from council reserves within the recovery area	Planning Officer (Natural Environment)
Continue to monitor and control feral predators on council land	MR1	As per councils Pest Animal Management Program	Pest Management Officer
Expand monitoring to include baseline data of macroinvertebrate density in all catchments where budget allows	All	Baseline data attained	Waterway Health Officer

## 6.2 PRIORITIZATION AND SCHEDULED LIST OF ACTIONS

This subsection sets out the actions contained in Table 37 on a year-by-year basis. This forms the implementation plan for this recovery plan. Note that the implementation plan is subject to change depending on the success or learnings from certain actions. The implementation plan will also be reviewed formally every two years to ensure continued alignment with the objectives of this plan.

### Year 1 – 20/21 financial year

- Install warning signs about the risk of domestic dogs and illegal recreational fishing practices in key platypus areas (SC2, WG1, WG2, OP1, BU2, MR1) – Key action
- Complete a full weed survey of the channel and develop a prioritised and feasible weed control program in attempt to improve flow in the channel (SC1, SC2, SC3) – Key action
- Undertake riparian plantings on council land (WG1, WG2, GD1, SM1, SM2, BU1, BR1)
- Investigate methods to stop stock access into the river (MR1)
- Investigate potential for real time monitoring of water quality for rapid response to pollution events (BR3, BR4, WR1).

### Year 2 – 21/22 financial year

- Determine origins of sediment build ups, undertake action to mitigate further erosion and investigate feasibility of remediation (SC1, WG3) – Key action
- Complete a detailed study of potential movement barriers, their severity, potential solutions and probable cost (SC1, GD1)
- Create a program for baseline assessment of pollutant loads and create a regular monitoring program in collaboration with councils Environmental Health Team (SC1, SM1, SM2, BU1, BU2)
- Undertake riparian plantings on council land (WG1, WG2, GD1, SM1, SM2, BU1, BR1)
- Detailed design, obtain planning approval and retrofit fish barriers (WR2).

### Year 3 – 22/23 financial year

- Investigate options for stabilising banks and improving in stream habitat (SC3, WG3, BU2, MR1) – Key action
- Where feasible and necessary manually install large woody debris to improve in stream habitat quality (SC2, WG1)
- Target landholders for potential conservation partnerships with council (SC2, WG2, SM2, BU1, BU2, BR1, BR4, WR1, WR2, PG1)
- Undertake riparian plantings on council land (WG1, WG2, GD1, SM1, SM2, BU1, BR1)
- Devise a remediation and sediment management plan for council land (WG3, SM1)
- Detailed design, obtain planning approval and retrofit fish barriers (BR4).

### Year 4 – 23/24 financial year

- Undertake riparian plantings on council land (WG1, WG2, GD1, SM1, SM2, BU1, BR1)
- Assess the water quality and potential impacts (particularly in high flow) from the various dams and artificial waterbodies in the recovery area (SM1) – Key action
- Conduct further investigations into the potential reasons for absence of platypus in the Bremer River (BR1)
- Detailed design, obtain planning approval and retrofit fish barriers (WR2)
- Undertake riparian plantings on council land (WG1, WG2, GD1, SM1, SM2, BU1, BR1).

### Year 5 – 24/25 financial year

- Detailed design, obtain planning approval and retrofit fish barriers (BU2, WG1, SM1)
- Undertake riparian plantings on council land (WG1, WG2, GD1, SM1, SM2, BU1, BR1).

## All years and ongoing

- Expand monitoring to include baseline data of macroinvertebrate density in all catchments (all recovery areas) where budget allows
- Create and implement a regular monitoring program for platypus (SC1, SC2, WG1, OP1, SM1, BU2, MR1) – Key action
- Continue to survey for presence of platypus (BR2, BR3, BR4)
- Undertake annual inspections of the recovery area to identify and flag any upcoming or new erosion and sediment control issues coming from adjacent development sites (WG2, OP1, GD2, BU3) – Key action
- Instigate or support research into the impact of PFAS contamination on platypus (BR4, WR1)
- Continue programs to control vine weeds where they pose a risk to bank stability (MR1)
- Continue to monitor and control feral predators on council land (MR1).

## As needs

- Ensure that platypus management is carefully considered in any recreational embellishment of Pine Mountain (MR1)
- Ensure platypus outcomes are duly considered in development assessment and imposed conditions (WG2, OP1, SM2, BU3) – Key action.



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## 7. MONITORING SCHEDULE

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A number of elements are required to be monitored in order to determine the ongoing success of this recovery plan. Monitoring is split into two main components:

1. Monitoring of biophysical aspects and populations
2. Monitoring of the plan's implementation.

### 7.1 RECOVERY AREA MONITORING

The monitoring associated with biophysical and population aspects of each recovery area is to be multifaceted.

#### Environmental DNA surveys

To continue to track and monitor presence of platypus in marginal catchments and in a consistent manner across the entire LGA, it is recommended that eDNA surveys be undertaken every year during the winter months which correspond with breeding season where shed of environmental DNA is most likely. The following creeks should all be monitored at regularly monitored sites:

- Sandy Creek (Camira)
- Woogaroo Creek
- Opossum Creek
- Six Mile Creek
- Bundamba Creek
- Bremer River.

The estimated cost of eDNA platypus monitoring is between \$4000 and \$5000 each year.

#### Annual habitat assessments

Habitat assessments should be conducted every year in accordance with Table 3. All recovery areas referenced in this document should be monitored annually at the same locations referenced throughout the document. Where possible these should be coordinated to align timings with eDNA surveys.

Surveys can be conducted by council staff or by Wildlife Queensland. Costs are factored into officer time or into eDNA monitoring costs.

#### Live platypus surveys

A requirement for a program of live surveys was identified as an action for recovery areas in:

- Sandy Creek
- Woogaroo Creek
- Opossum Creek
- Six Mile Creek
- Bundamba Creek
- Mid Brisbane River.

This can be conducted by council officers, community members, consultants or contractors or a combination of several of these.

Council will look to engage the community in this process either through an expression of interest process or through calls for volunteers. Community members should contact council directly should they wish to assist in platypus surveys prior to proactive establishment of a monitoring program. Surveys will also be conducted in partnership with Wildlife Preservation Society of Queensland.

### 7.2 MONITORING AND REPORTING ON ACTIONS

Reporting on the completion of actions will be completed as per Table 37. Actions completed and the findings from the recovery areas monitoring will be compiled into a report every two years when the action tables are reviewed.

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## 8. EVALUATION

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The plan is set for a five-year implementation period with reviews of the action tables based on new information every two years. A full review of the plan will occur after five years of implementation.

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## 9. REFERENCES AND SUPPORTING DOCUMENTS

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Australian Platypus Conservancy website: <https://platypus.asn.au/>

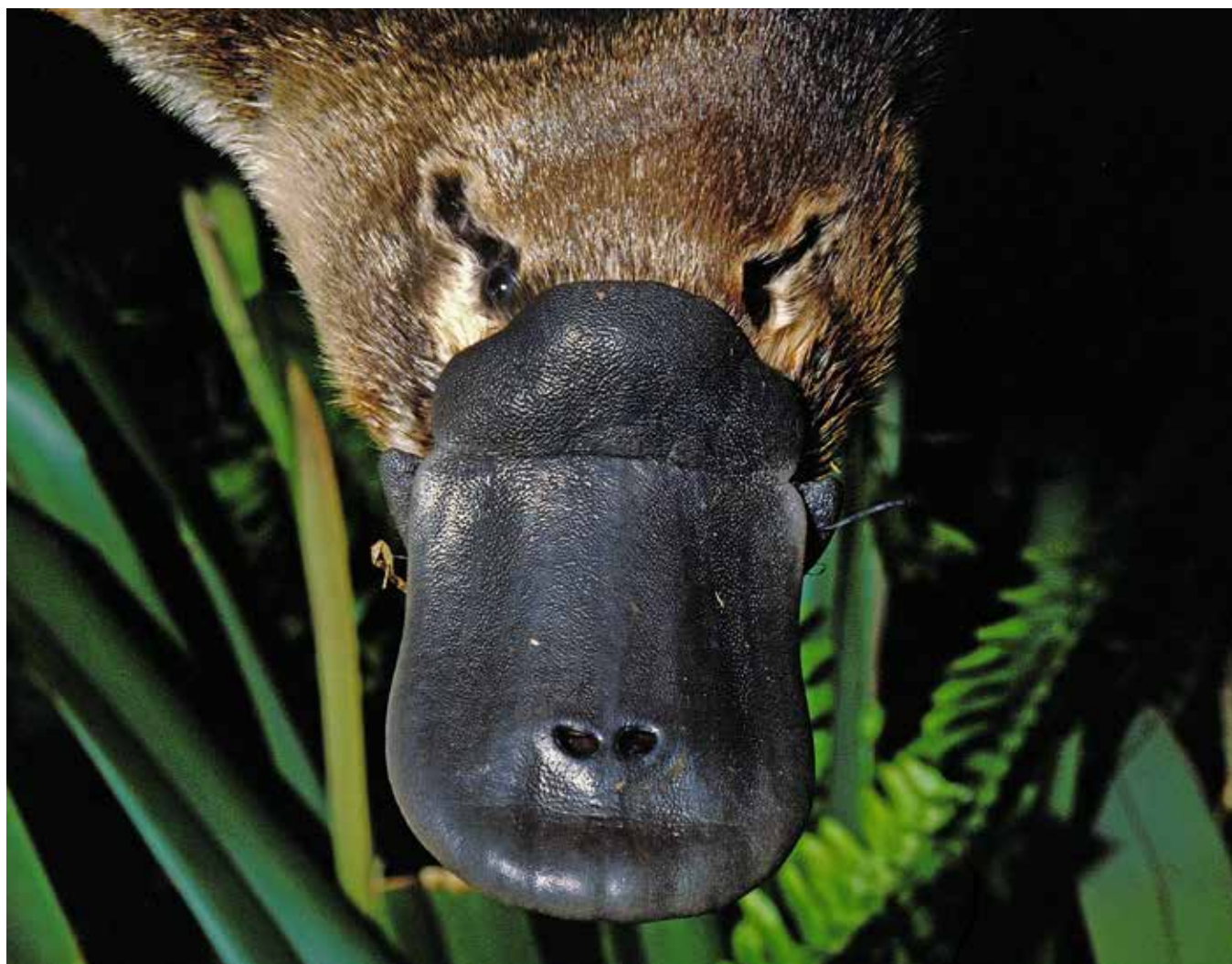
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