

Meeting Date: Tuesday 29 June 2021
Location: Council Chambers, Level 1A, 1 Pope Street, Ryde and Online
Time: 7.00pm

ATTACHMENTS FOR COUNCIL MEETING

Item		Page
7	OUTCOMES FROM DOG OFF-LEASH TRIAL	
	Attachment 1 2021-04 Dog Off Leash Trial - Consultation Report.....	1
	Attachment 2 Kissing Point Park avifauna study report - InSight Ecology - 28 January 2021	25

ITEM 7 (continued)

ATTACHMENT 1

**DOG OFF-LEASH
TRIAL**

Kissing Point Park
Marsfield Park
Memorial Park
Monash Park
Moore Park



STAGE 2
COMMUNITY CONSULTATION REPORT
APRIL 2021

ITEM 7 (continued)

ATTACHMENT 1



CITY OF RYDE | Dog Off-Leash Trial – Stage 2 Community
Consultation Report
April 2021© City of Ryde

DISCLAIMER

While every reasonable effort has been made to ensure that this document is correct at the time of printing, the City of Ryde, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance or upon the whole or any part of this document.

COPYRIGHT NOTICE

If you wish to reproduce, alter, store or transmit material appearing in this submission document for any purpose, requests for formal permission should be directed to the General Manager, City of Ryde.

ITEM 7 (continued)

ATTACHMENT 1

DOG OFF-LEASH TRIAL

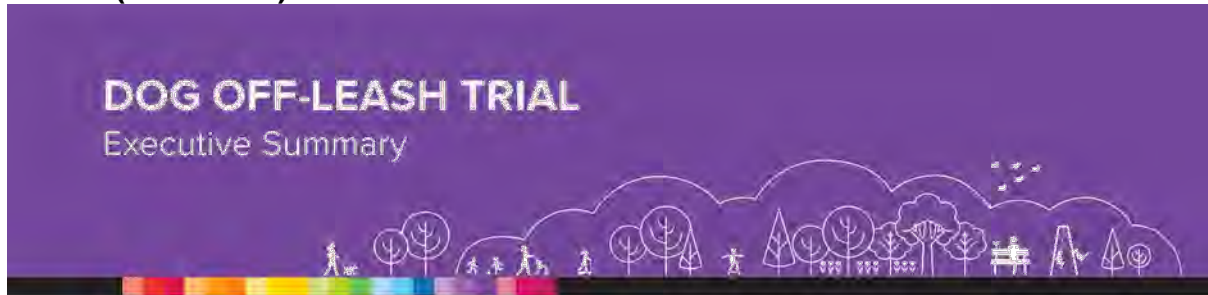
Contents

Executive Summary	3
Background	4
Community Consultation Timeline	5
Community Consultation Methodology	6-7
Community Consultation Results	8-13
Appendices	
• Website	14
• Have Your Say eNewsletter	15
• A4 Flyer	16
• Park Signage	21
• Newspaper Ad	22
• Facebook Ad	23
• Your City News	24



ITEM 7 (continued)

ATTACHMENT 1



On 26 May 2020, Council endorsed the Dog Recreation Needs Study which recommended the creation of new dog off-leash areas within the City of Ryde to meet the changing needs of our growing community.

Following these recommendations, Council proposed 7 new off-leash areas improve the distribution, diversity and accessibility of off-leash site across the City of Ryde and asked the community for their feedback. These sites included Fontenoy Park Kissing Point Park (Putney), Marsfield Park (Marsfield), Memorial Park (Meadowbank), Moore Park (Eastwood), Monash Park (Gladesville), Waterloo Park (Marsfield).

Stage 1 community consultation was conducted from 24 August to 13 September 2020 during which the community could provide feedback on the proposed Dog Off-Leash Trial Areas via an online survey or at a registered phone session with Council staff. This was promoted through City of Ryde's Have Your Say website, flyers to surrounding residents, an eNewsletter to stakeholders, signage in the parks, social media and an advertisement in the local newspaper.

Following community feedback from Stage 1, Council commenced community consultation on 5 parks during a six-month trial of 4 proposed dog off-leash areas. The proposed parks on trial were Kissing Point Park (Putney), Marsfield Park (Marsfield), Memorial Park (Meadowbank) and Monash Park (Gladesville). Moore Park (Eastwood) site was open for feedback during the trial period as a proposed future dog off-leash area however, was not included as part of the six-month trial due to the fencing requirements.

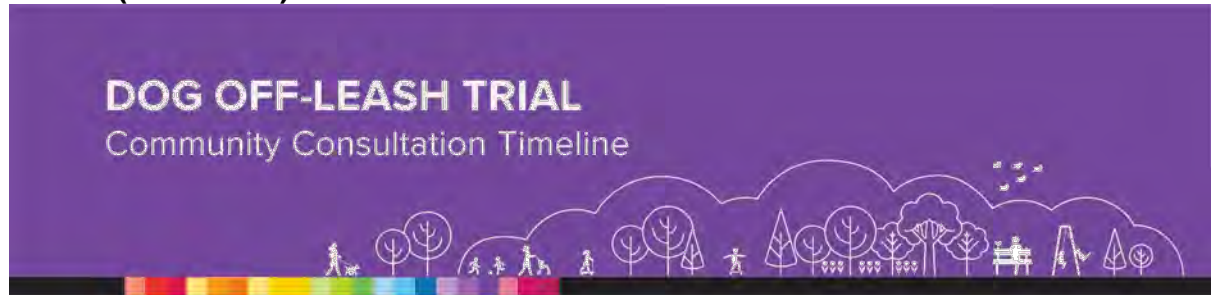
The City of Ryde's internal community engagement team conducted Stage 2 community consultation to gather feedback from the community on the proposed dog off-leash facilities, what they like and any ideas or suggestions for improvement.

Stage 2 community consultation was conducted from 19 October 2020 to 11 April 2021, during which the community could provide comments and suggestions via an online survey. This was promoted through City of Ryde's Have Your Say website, flyers to surrounding residents, an eNewsletter to stakeholders, signage in the park, social media and an advertisement in the local newspaper

In total 289 comments were received from the community with 270 from the online survey, 19 email submissions and 1 phone submissions. In addition to the feedback collected and presented in this dashboard, 1 petition was received during the consultation period in objection to the Kissing Point Park trial dog off-leash area.

ITEM 7 (continued)

ATTACHMENT 1

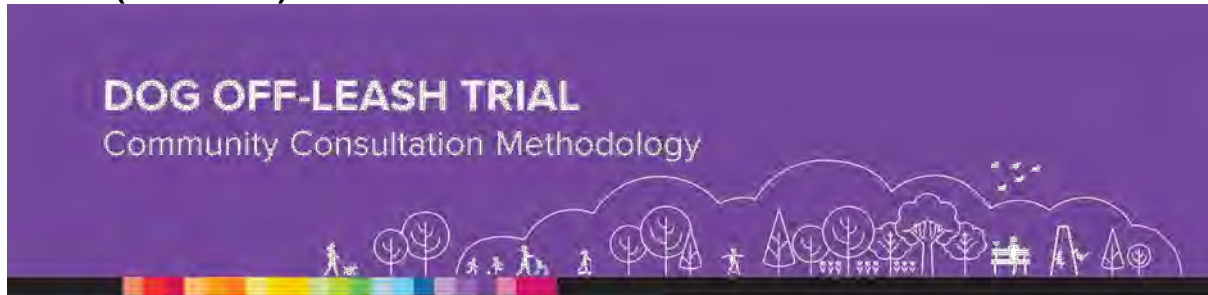


DOG OFF-LEASH TRIAL
Community Consultation Timeline



ITEM 7 (continued)

ATTACHMENT 1



Date	Tool	Stakeholders	Overview	Engagement
Mon 19 Oct 2020 to Sun 11 Apr 2021	Have Your Say Website	Website users	A project webpage with background information, online survey and project updates.	680 page views and 607 unique visits
Mon 19 Oct 2020 to Sun 11 Apr 2021	Online Survey	Website users	An online survey where stakeholders could provide comments and suggestions on the site. This was accessed through Council's Have Your Say webpage.	270 online respondents
Mon 19 Oct 2020 to Sun 11 Apr 2021	Park Signage	Park users	Park signage was placed to promote the project and feedback opportunities for park users and interested stakeholders.	3 signs at entry points of each park (Total 14 signs)
Mon 19 Oct 2020 to Sun 11 Apr 2021	A4 Flyer	Surrounding residents – adjacent to each park (150m radius)	An A4 flyer was letterbox dropped to promote the project and feedback opportunities for surrounding local residents.	1,650 flyers approximately
Mon 19 Oct 2020	Have Your Say eNewsletter	Internal and external stakeholders, sports clubs and community groups	A targeted eNewsletter was sent to relevant community stakeholders to provide an opportunity to give their feedback.	668 eNewsletters distributed 481 eNewsletters opened
Mon 19 Oct 2020 to Sun 11 Apr 2021	Open Community Consultations Ad Northern District Times	Newspaper subscribers	Weekly newspaper advertisements to promote the project and consultation opportunities for all stakeholders.	38,000 total print readership

ITEM 7 (continued)

ATTACHMENT 1



Date	Tool	Stakeholders	Overview	Engagement
Thu 29 Oct to Wed 4 Nov 2020	Facebook Ad	Online Facebook users	Social media advertisement to promote the project and consultation opportunities for all stakeholders.	7,000 users reached 538 users engaged
Mon 8 Mar to Sun 28 Mar 2021	Information phone line and email	All Stakeholders	The City of Ryde main phone and email address was provided for the project and was open for feedback from the community.	19 submissions received



ITEM 7 (continued)

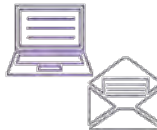
ATTACHMENT 1



268
SURVEY
RESPONSES



17
EMAIL
SUBMISSIONS



2
EMAIL SUBMISSION
& SURVEY RESPONSE



1
PHONE
SUBMISSION

SURVEY DEMOGRAPHICS (n=221-257)

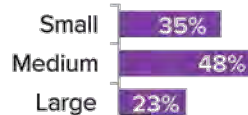
Are you a dog owner?



Number of dog(s):

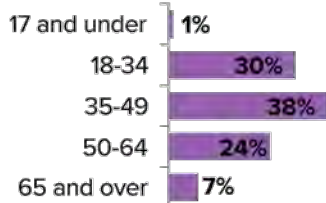


Size of dog(s):

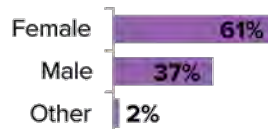


Note: Respondents could select multiple options, hence total does not add to 100%

Age:



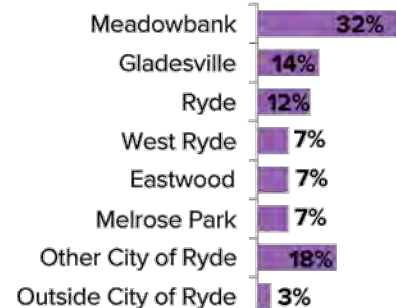
Gender:



Language(s):



Suburb:

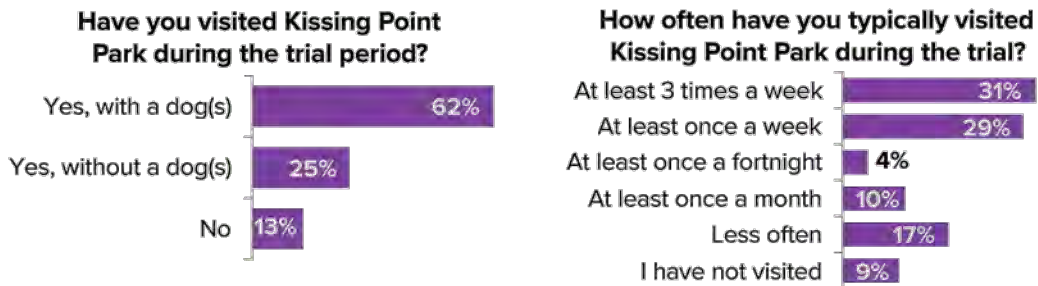


ITEM 7 (continued)

ATTACHMENT 1



KISSING POINT PARK, PUTNEY (at high tide only)



Please indicate whether you support or do not support the trial dog off-leash area at Kissing Point Park (at high tide only) to become permanent? (n=49)



Most liked about the trial dog off-leash area: (n=43)



Ideas/suggestions to improve the trial dog off-leash area: (n=37)



Further comments/suggestions: (n=29)



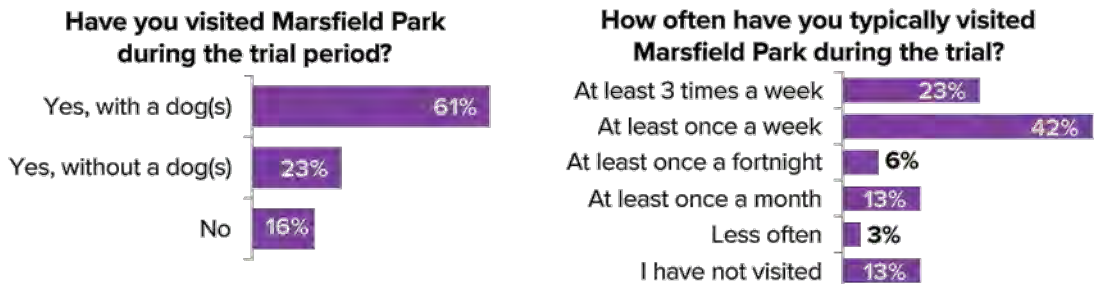
Note: Size is representative of theme frequency, reflecting themes ranging between n=2 and n=20.

ITEM 7 (continued)

ATTACHMENT 1



MARSFIELD PARK, MARSFIELD (when not in use for organised sport)



Please indicate whether you support or do not support the trial dog off-leash area at Marsfield Park (when not in use for organised sport) to become permanent? (n=32)



Most liked about the trial dog off-leash area: (n=25)



Ideas/suggestions to improve the trial dog off-leash area: (n=20)



Further comments/suggestions: (n=12)



Note: Size is representative of theme frequency, reflecting themes ranging between n=2 and n=11.

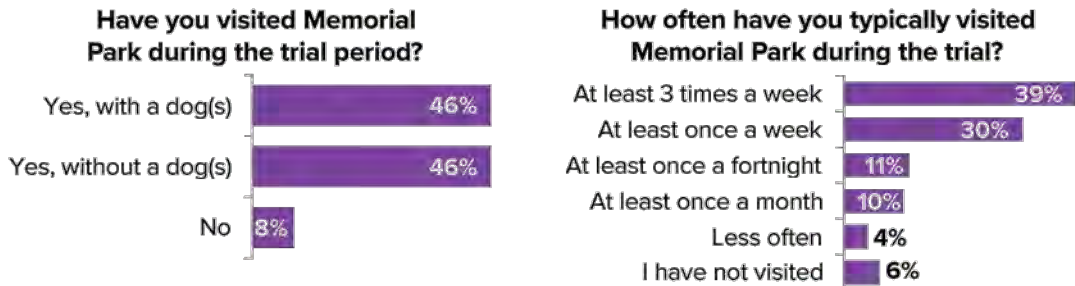
ITEM 7 (continued)

ATTACHMENT 1



DOG OFF-LEASH TRIAL
Community Consultation Results

MEMORIAL PARK, MEADOWBANK



Please indicate whether you support or do not support the trial dog off-leash area at Memorial Park to become permanent? (n=174)



Most liked about the trial dog off-leash area: (n=154)



Ideas/suggestions to improve the trial dog off-leash area: (n=142)



Further comments/suggestions: (n=97)



Note: Size is representative of theme frequency, reflecting themes ranging between n=2 and n=45.

ITEM 7 (continued)

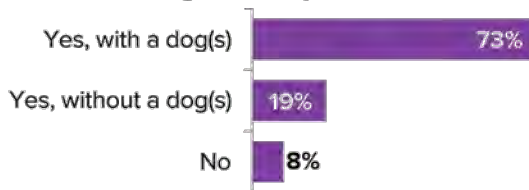
ATTACHMENT 1



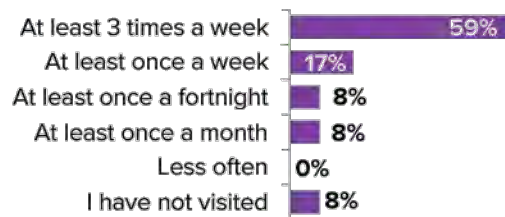
DOG OFF-LEASH TRIAL
Community Consultation Results

MONASH PARK, GLADESVILLE (when not in use for organised sport)

Have you visited Monash Park during the trial period?



How often have you typically visited Monash Park during the trial?



Please indicate whether you support or do not support the trial dog off-leash area at Monash Park to become permanent? (n=65)



Most liked about the trial dog off-leash area: (n=54)



Ideas/suggestions to improve the trial dog off-leash area: (n=45)



Further comments/suggestions: (n=31)



Note: Size is representative of theme frequency, reflecting themes ranging between n=2 and n=18.

ITEM 7 (continued)

ATTACHMENT 1



DOG OFF-LEASH TRIAL
Community Consultation Results

MOORE PARK, EASTWOOD (not included in trial, but open for feedback)

Please indicate whether you support or do not support Moore Park as a future dog off-leash area (requiring fencing)? (n=26)



Further comments/suggestions: (n=18)



Note: Size is representative of theme frequency, reflecting themes ranging between n=2 and n=8.

DOG OFF LEASH TRIAL, OVERALL

Comments/suggestions regarding the Dog Off-Leash Trial: (n=116)



Note: Size is representative of theme frequency, reflecting themes ranging between n=2 and n=19.

ITEM 7 (continued)

ATTACHMENT 1



HAVE YOUR SAY WEBSITE

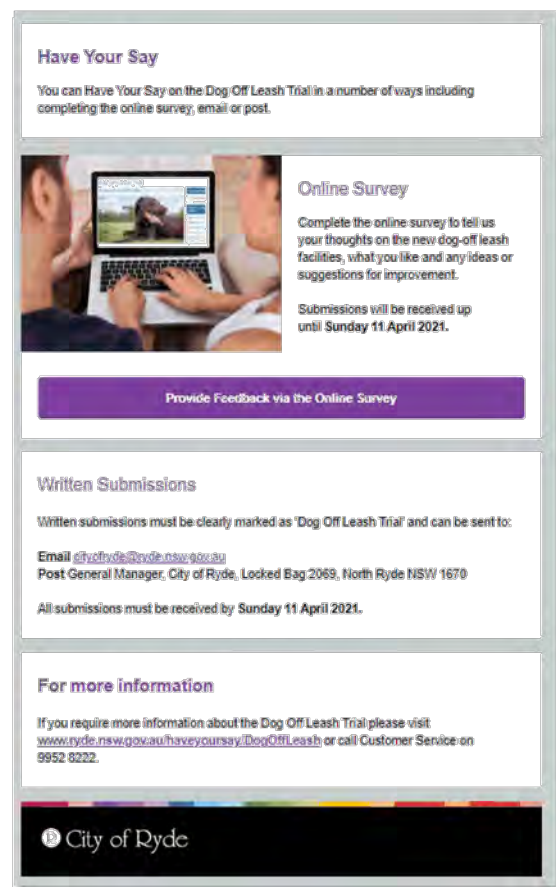
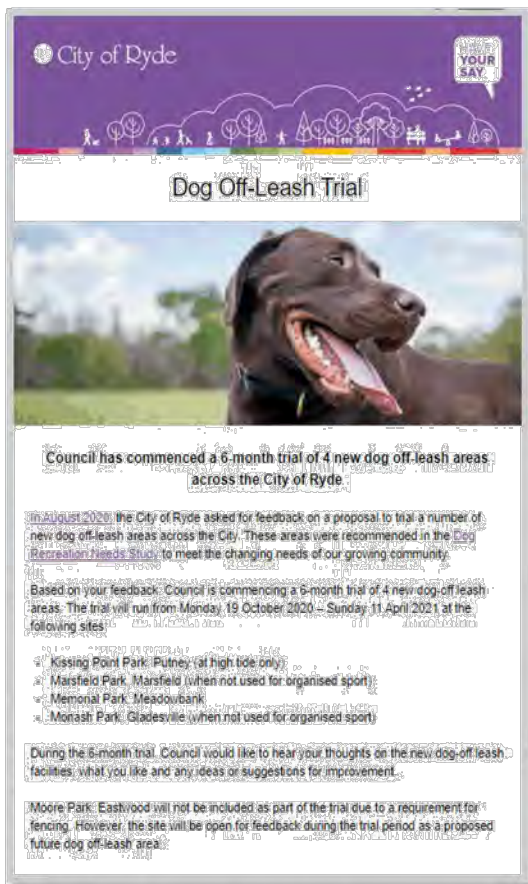


ITEM 7 (continued)

ATTACHMENT 1

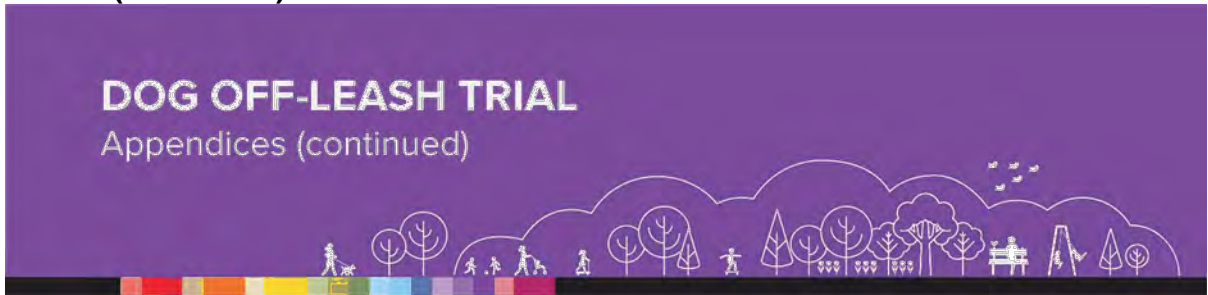


HAVE YOUR SAY NEWSLETTER



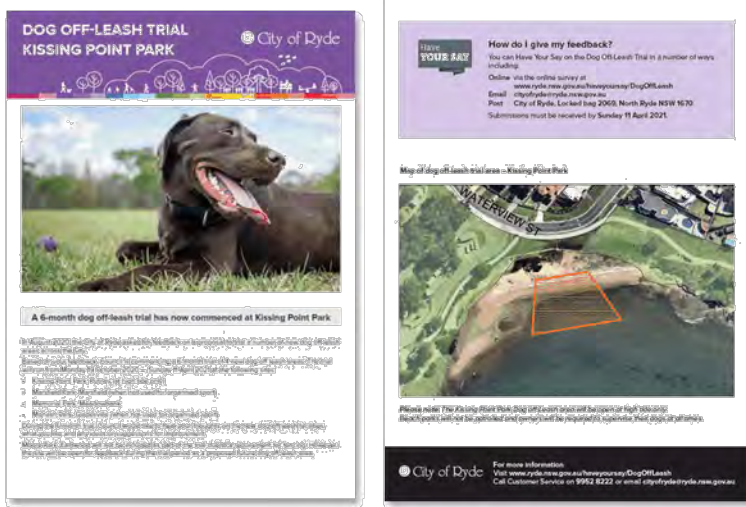
ITEM 7 (continued)

ATTACHMENT 1



A4 FLYERS

Kissing Point Park flyer



Kissing Point Park flyer distribution area



ITEM 7 (continued)

ATTACHMENT 1

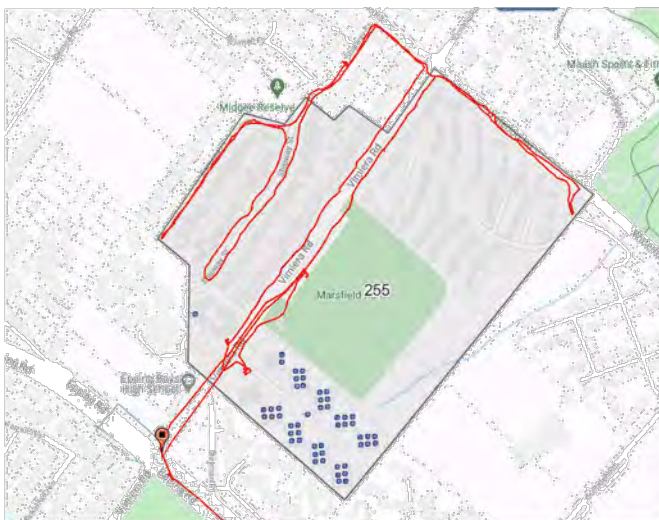


A4 FLYERS (CONTINUED)

Marsfield Park flyer

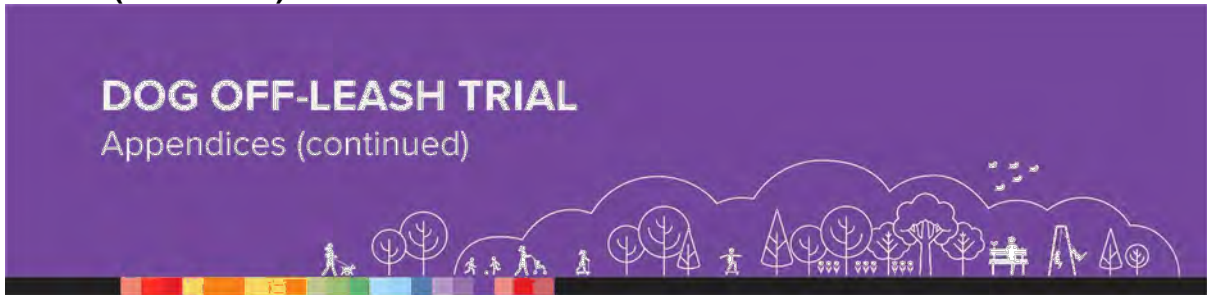


Marsfield Park flyer distribution area



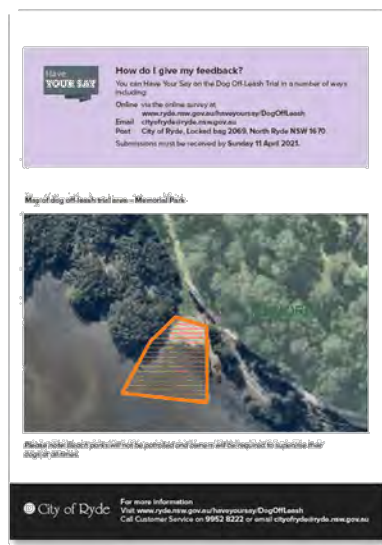
ITEM 7 (continued)

ATTACHMENT 1

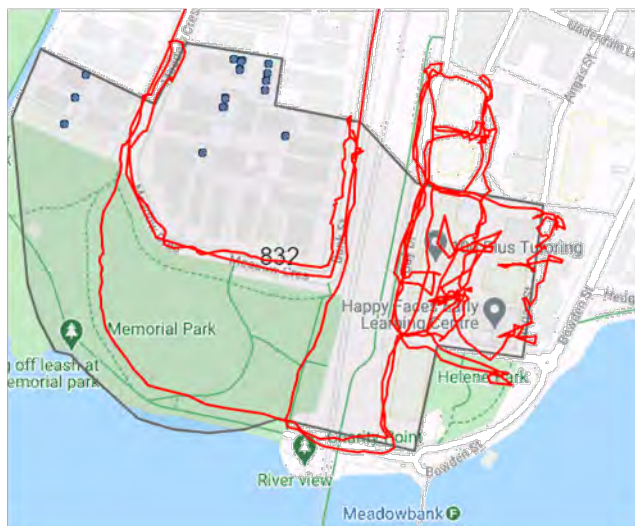


A4 FLYERS (CONTINUED)

Memorial Park flyer



Memorial Park flyer distribution area



ITEM 7 (continued)

ATTACHMENT 1



A4 FLYERS (CONTINUED)

Monash Park flyer



Monash Park flyer distribution area



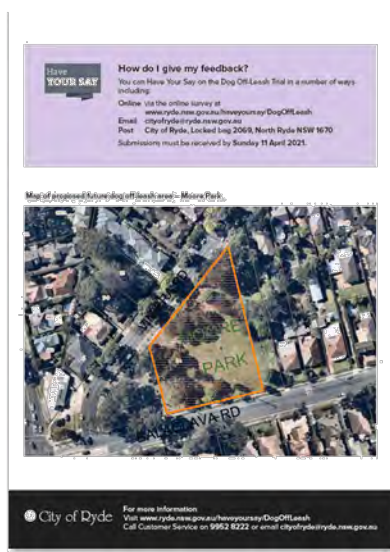
ITEM 7 (continued)

ATTACHMENT 1

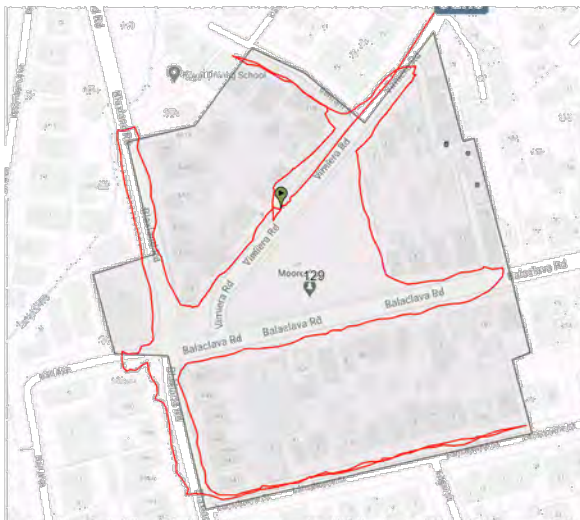


A4 FLYERS (CONTINUED)

Moore Park



Moore Park flyer distribution area



ITEM 7 (continued)

ATTACHMENT 1



PARK SIGNAGE

Kissing Point Park

DOG OFF-LEASH TRIAL
KISSING POINT PARK

A 6-month dog off-leash trial has now commenced at Kissing Point Park
Please note: The Kissing Point Park dog off-leash area will be open at high tides only.

Have YOUR SAY

How do I give my feedback?
You can have your say on the Dog Off-Leash Trial by completing the online survey at: www.cityofryde.nsw.gov.au/online-survey
Survey closes: 30th June 2021
If you are unable to fill in the online survey or have any queries, please contact Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

City of Ryde For more information visit: www.cityofryde.nsw.gov.au/online-survey
Call Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

Marsfield Park

DOG OFF-LEASH TRIAL
MARSFIELD PARK

A 6-month dog off-leash trial has now commenced at Marsfield Park
Please note: The Marsfield Park dog off-leash area will be open when not used for league sport.

Have YOUR SAY

How do I give my feedback?
You can have your say on the Dog Off-Leash Trial by completing the online survey at: www.cityofryde.nsw.gov.au/online-survey
Survey closes: 30th June 2021
If you are unable to fill in the online survey or have any queries, please contact Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

City of Ryde For more information visit: www.cityofryde.nsw.gov.au/online-survey
Call Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

Memorial Park

DOG OFF-LEASH TRIAL
MEMORIAL PARK

A 6-month dog off-leash trial has now commenced at Memorial Park

Have YOUR SAY

How do I give my feedback?
You can have your say on the Dog Off-Leash Trial by completing the online survey at: www.cityofryde.nsw.gov.au/online-survey
Survey closes: 30th June 2021
If you are unable to fill in the online survey or have any queries, please contact Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

City of Ryde For more information visit: www.cityofryde.nsw.gov.au/online-survey
Call Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

Monash Park

DOG OFF-LEASH TRIAL
MONASH PARK

A 6-month dog off-leash trial has now commenced at Monash Park
Please note: The Monash Park dog off-leash area will be open when not used for league sport.

Have YOUR SAY

How do I give my feedback?
You can have your say on the Dog Off-Leash Trial by completing the online survey at: www.cityofryde.nsw.gov.au/online-survey
Survey closes: 30th June 2021
If you are unable to fill in the online survey or have any queries, please contact Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

City of Ryde For more information visit: www.cityofryde.nsw.gov.au/online-survey
Call Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

Moore Park

DOG OFF-LEASH TRIAL
MOORE PARK

Have Your Say on Moore Park becoming a future dog off-leash site

Have YOUR SAY

How do I give my feedback?
You can have your say on the Dog Off-Leash Trial by completing the online survey at: www.cityofryde.nsw.gov.au/online-survey
Survey closes: 30th June 2021
If you are unable to fill in the online survey or have any queries, please contact Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

City of Ryde For more information visit: www.cityofryde.nsw.gov.au/online-survey
Call Customer Services on 9922 8222 or email: cityofryde@cityofryde.nsw.gov.au

ITEM 7 (continued)

ATTACHMENT 1

DOG OFF-LEASH TRIAL

Appendices (continued)



NEWSPAPER AD - OPEN COMMUNITY CONSULTATIONS THE WEEKLY TIMES

HAVE YOUR SAY

OPEN COMMUNITY CONSULTATIONS

You are invited to have your say about documents, projects and proposals that are currently on public exhibition, or provide feedback on services and concerns that affect the community.

- ELS Hall Park Draft Plan of Management Exhibition & Land Re-categorisation (Closing 29 November 2020)
- Draft Youth Infrastructure Strategy (Closing 29 November 2020)
- Gannan Park Proposed Land Re-Categorisation (Closing 6 December 2020)
- Janet Park Playground Upgrade (Closing 6 December 2020)
- Subsidised Private Tree Assistance Scheme Resolution (Closing 7 December 2020)
- City of Ryde Net Zero Emissions Pathway (Closing 9 December 2020)
- Olympic Park Draft Masterplan and Draft Parking & Traffic Study (Closing 9 December 2020)
- Planning Proposal – Local Heritage Listing of Macquarie Ice Rink (Closing 16 December 2020)
- West Ryde Town Centre Masterplan (22 January 2021)
- Dog Off Leash Trial (Closing 11 April 2021)
- Devlin Street Pedestrian Bridges
- Graffiti Vandalism In the City of Ryde
- Immunisation Clinic Customer Experience Survey
- Traffic & Parking Around Schools

Want to find out more?

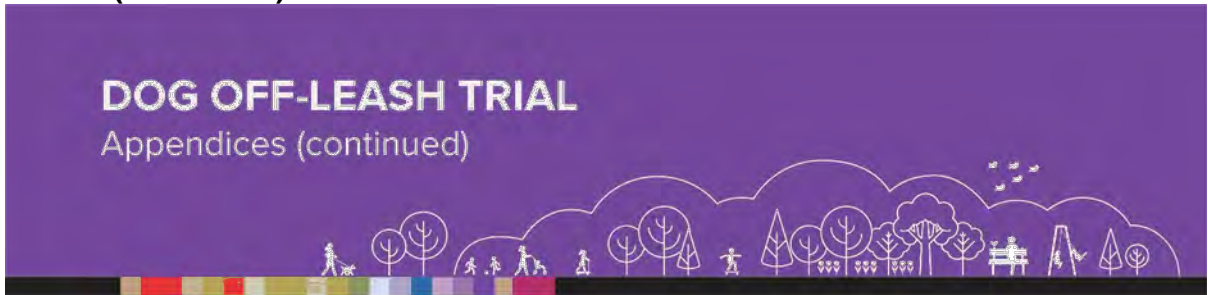
To find out more about one of the above projects or for information on

how to provide feedback, please visit www.ryde.nsw.gov.au/haveyoursay or call Customer Service on 9952 8222.

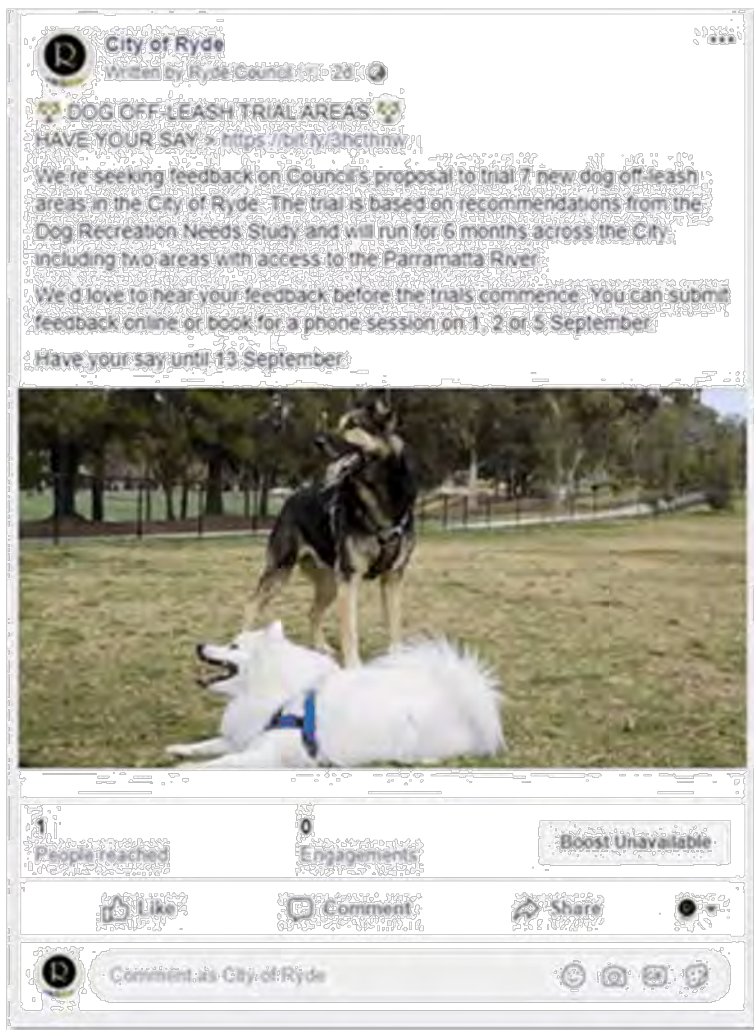
 City of Ryde

ITEM 7 (continued)

ATTACHMENT 1



FACEBOOK AD



ITEM 7 (continued)

ATTACHMENT 1



YOUR CITY NEWS

Have Your Say

On Exhibition

You are invited to have your say about documents, projects and proposals that are currently on public exhibition, or provide feedback on services and concerns that affect the community.

- [NSW Government: NSW Water Quality Objectives Survey](#) (closes 26 February)
- [Pittwater Road Shared User Path – Between Victoria Road and High Street](#) (closes 28 February 2021)
- [Proposed Trial of Mobile Parklet – Charles Street, Putney](#) (closes 3 March)
- [Draft Economic Development Strategy 2020 – 2024](#) (closes 7 March)
- [Heally Reserve Upgrade](#) (closes 7 March)
- [Miriam Park Playground Upgrade](#) (closes 7 March)
- [Parry Park Playground Upgrade](#) (closes 7 March)
- [Shrimps Creek Shared User Path Lighting](#) (closes 14 March)
- [Protecting Trees with Hollows – Ross Street Road Reserve](#) (closes 14 March)
- [Draft Generic Plan of Management – Natural Areas Public Exhibition](#) (closes 21 March)
- [Dog Off-Leash Trial](#) (closes 11 April)
- [Devin Street Pedestrian Bridges](#)
- [Graffiti Vandalism in the City of Ryde](#)
- [Immunisation Clinic: Customer Experience Survey](#)
- [Traffic and Parking Around Schools](#)

ITEM 7 (continued)

ATTACHMENT 2

**KISSING POINT PARK AVIFAUNA STUDY REPORT
JANUARY 2021**



InSight Ecology
for
City of Ryde

January 2021

ITEM 7 (continued)

ATTACHMENT 2

KISSING POINT PARK AVIFAUNA STUDY REPORT



January 2021

This report was produced by InSight Ecology for the City of Ryde.

Recommended citation: InSight Ecology, 2021. Kissing Point Park Avifauna Study – December 2020 survey report. Report by InSight Ecology for City of Ryde, Sydney.

Use of this document: Material presented in this document represents the intellectual property and professional output of the author - InSight Ecology (Dr Andrew Huggett). Written permission should be obtained from City of Ryde and the author prior to the use of any material, data, images, figures or photographs contained in this document.

Photographic credits: Cover page: top image - Kissing Point Park, Parramatta River Catchment Group, ourlivingriver.com.au 2020; middle row, left to right - Bar-tailed Godwit foraging at France Bay in Hen & Chicken Bay, Cabarita (Andy Doldissen), Black-winged Stilt at Mason Park wetland, Homebush (InSight Ecology); Australian Pied Oystercatcher foraging on rock platform near main jetty, Kissing Point (InSight Ecology); dog walker on Kissing Point Park beach (InSight Ecology); beach and rock platform habitat at Kissing Point Park (InSight Ecology); 'Harley' the dog on Kissing Point Park beach with Rivercat at jetty in background (InSight Ecology). Inside cover image: Striated Heron foraging at low tide, Kissing Point Park main beach, 10/12/20 (InSight Ecology).

ITEM 7 (continued)**ATTACHMENT 2**

1

Acknowledgements

I am grateful to the City of Ryde for the opportunity to undertake this study, particularly the project manager Rob Parsonson, Michael Longworth and Kylie McMahon. I am appreciative of information and data provided by Nell Graham (City of Canada Bay), the late Andy Doldissen, Parramatta River Catchment Group and BirdLife Australia especially the Australasian Wader Study Group. The NSW Wader Study Group provided access to past shorebird studies and reports. Jen O'Meara of Sydney Olympic Park Authority supplied records of shorebird occurrence at Homebush Bay and Sydney Olympic Park.

Other councils provided access to biodiversity reports, studies, photographs, survey data and/or management plans. These included City of Canada Bay, Strathfield Council, Inner West Council and Hunter's Hill Council. I thank the family of the late Andy Doldissen whose photographs I am privileged to be able to use in this report. Andy was a tireless campaigner for nature conservation and habitat restoration. I was fortunate to work with him on the City of Canada Bay Fauna Study Project, 2013-2014. I also thank Silva Vaughan-Jones for use of the Eastern Curlew photograph and Tom Tarrant and Museums Victoria for use of the Curlew Sandpiper photograph.

I am also appreciative of discussions with dog walkers and local residents at Kissing Point Park and Bennelong Park during the field inspections and surveying. These helped provide context and perspective to the study. Long-time local residents Neville Flegg and Graham Lloyd provided helpful historical information.

ITEM 7 (continued)

ATTACHMENT 2

2

Contents

Acknowledgements	1
1. Project background	3
2. Study objectives	3
3. The study area	3
4. Methods	5
4.1 Literature and data review.....	5
4.2 Field survey and habitat assessment	6
5. Results	7
5.1 Shorebird and aquatic bird species recorded during the survey.....	7
5.2 Shorebirds known or likely to occur at Kissing Point Park and environs	13
5.3 Other shorebird and aquatic bird species of conservation significance.....	14
5.4 Shorebird habitat in the study area	15
6. Potential impacts on shorebirds and their habitat	18
6.1 Legislative requirements.....	18
6.2 Key potential impacts on shorebirds and their habitat	19
6.3 Assessment of the shorebird habitat value of Kissing Point Park and potential impacts.....	20
7. Mitigation of potential impacts of the dog off-leash trial on shorebirds and their habitat	23
7.1 Overview	23
7.2 Recommended actions and compliance with Kissing Point Park Dog Off-leash Trial.....	23
7.2.1 Actions recommended in the winter 2020 survey report.....	23
7.2.2 Community support of and compliance with the trial's Priority 1 actions	24
7.2.3 Recommendations following the completion of both surveys	25
References	29

ITEM 7 (continued)

ATTACHMENT 2

3

1. Project background

A study of the recreational needs of pet dogs was recently completed in the City of Ryde Local Government Area (City of Ryde 2020). This identified strong support from local communities for additional dog off-leash areas within Ryde Local Government Area (LGA), particularly with access to recreational water.

As a result of this work, Council resolved to trial 6 new dog off-leash areas across the LGA, two of these with access to the Parramatta River foreshore. One of these sites occurs at Kissing Point Park at the south-western end of Delange Road and Charles Street, Putney while the other site is at Meadowbank Memorial Park.

The foreshores of Parramatta River estuary provide important foraging and roosting habitat for several species of resident and migratory shorebirds (NSW Department of Environment and Conservation 2006; CT Environmental 2016) and other aquatic birds. These include 15 species of conservation significance, 7 of which are listed threatened species and 2 are species subject to migratory bird protection agreements between the governments of Australia, China (CAMBA), Japan (JAMBA) and/or Republic of Korea (ROKAMBA).

Following consultation with Parramatta River Catchment Group and other councils, City of Ryde Council commissioned this study to assess and mitigate the potential impact of the proposed dog off-leash trial on shorebirds and other aquatic birds and their habitat at Kissing Point Park. This will help inform Council's planning and management of this and potentially other reserves to balance the needs of dog recreation with the protection of shorebirds and other aquatic birds and their habitat.

2. Study objectives

The study aims to:

- Survey aquatic bird species present during winter and summer at Kissing Point Park and nearby foreshore reserves;
- Characterise shorebird and other aquatic bird habitat available at Kissing Point Park and nearby foreshore reserves;
- Assess the potential impact of the dog off-leash trial on shorebirds and other aquatic bird species and their habitat at Kissing Point Park;
- Recommend practical management actions to mitigate the potential impact of the dog off-leash trial on shorebirds and other aquatic bird species at Kissing Point Park.

3. The study area

The study area occurs along the northern foreshore of Parramatta River from Morrison Bay Park in the south-east to Meadowbank Park in the north-west of the City of Ryde LGA (Figures 1 and 2). This includes 6 City of Ryde foreshore reserves – Morrison Bay Park, Kissing Point Park, Bennelong Park, Settlers Park, Meadowbank Memorial Park and Meadowbank Park.

ITEM 7 (continued)

ATTACHMENT 2

Figure 1: Location and spatial context of the study area within the mid-Parramatta River landscape. Image: Google Earth 2020.



Figure 2: Location and spatial context of the study area at the site scale. Foreshore reserves surveyed in this study are indicated – 1 Kissing Point Park, 2 Morrison Bay Park, 3 Meadowbank Park, 4 Meadowbank Memorial Park, 5 Bennelong Park, 6 Settlers Park. Image: Google Earth 2020.



ITEM 7 (continued)

ATTACHMENT 2

5

The focus of the study is Kissing Point Park where the dog off-leash trial commenced on 19 October 2020 and will run until 11 April 2021 (pers comm, City of Ryde). Kissing Point Park and its nearby foreshore reserves occur within relatively close proximity to significant shorebird habitats at Homebush Bay, Sydney Olympic Park, Mason Park and Hen and Chicken Bay.

4. Methods

4.1 Literature and data review

A total of 33 relevant management and conservation plans and studies, technical and survey reports, published scientific papers, threatened species legislation, guidelines and avifaunal data were reviewed. These documents provided the necessary statutory, planning and scientific context and framework for the study and assisted in formulation of recommendations. These included:

- City of Ryde Dog Recreation Needs 2020 Study - Technical Report (City of Ryde 2020);
- A review of dog impacts to beach-nesting birds and management solutions (BirdLife Australia 2018);
- Parramatta River Masterplan (Parramatta River Catchment Group 2018);
- Parramatta River Parklands Draft Plan of Management (City of Ryde 2018);
- Parramatta River Estuary Processes Study (AECOM 2010);
- Parramatta River Catchment Ecological Health Project (CT Environmental 2016);
- Parramatta River Catchment Native Habitats and Fauna (Applied Ecology 2014);
- Ryde Biodiversity Plan (City of Ryde 2016)
- Threatened migratory shorebird habitat mapping project (NSW Department of Environment and Conservation [DEC] 2006);
- Wildlife Conservation Plan for Migratory Shorebirds 2015 (Australian Government 2015);
- National Migratory Shorebird Conservation Action Plan (BirdLife Australia 2017);
- East Asian-Australasian Flyway (EAAF) Partnership Strategic Plan (EAAF 2018a) and CEPA Action Plan (EAAF 2018b);
- Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species – EPBC Act Policy Statement 3.21 (Australian Government 2017);
- Matters of National Environmental Significance – Significant Impact Guidelines 1.1, EPBC Act 1999 (Australian Government 2013);
- Conservation Advice for Bar-tailed Godwit *Limosa lapponica baueri*, Threatened Species Conservation Committee, 5 May 2016 (Australian Threatened Species Scientific Committee 2016);
- Atlas of NSW Wildlife (BioNet) – database searched for fauna and flora records of threatened and other conservation-significant shorebird and other aquatic bird species in and near the City of Ryde (NSW Department of Planning, Industry and Environment [DPIE] 2020);
- Australian Living Atlas database searched within a 5 km radius of study area (CSIRO 2020);
- Previous biodiversity surveys and studies in City of Ryde (Biosphere Environmental Consultants 2006, 2007, 2008; InSight Ecology 2011a, 2011b, 2012, 2020; Anne Clements & Associates 2016; Applied Ecology 2017, 2018), City of Canada Bay (InSight Ecology 2014), Strathfield Council (InSight Ecology 2008, 2017a), City of Willoughby (InSight Ecology 2017b) and Kempsey Shire Council (InSight Ecology 2017c) LGAs;

Kissing Point Park summer avifauna study report

InSight Ecology for City of Ryde

28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

6

- Shorebird occurrence records at Sydney Olympic Park (Sydney Olympic Park Authority [SOPA] 2019).

4.2 Field survey and habitat assessment

A total of 55 survey sessions for shorebirds and other aquatic bird species were conducted across 6 sites in the study area from 1-12 December 2020. These comprised a total of 14.36 hours of fixed-point surveying at low (6.52 hours), falling or ebb (2.42 hours), mid (1.25 hours), incoming (2.75 hours) and high (1.42 hours) tidal phases.

Each of the 6 sites surveyed were the same as those studied before the dog off-leash trial had commenced in July 2020 (InSight Ecology 2020). These were Kissing Point Park (5.7 hours, mostly at low tide but also other tidal phases), Morrison Bay Park (1.83 hours – mix of ebb, low, mid and high tides), Meadowbank Park (1.75 hours – low, mid and high tides), Meadowbank Memorial Park (0.33 hour – incoming, mid and ebb tides), Bennelong Park (2.55 hours – low, incoming and high tides) and Settlers Park (2.2 hours – all tidal phases).

In addition to the fixed-point surveys, a total of 2.5 hours was spent searching opportunistically for shorebirds and other aquatic bird species at low tide at Kissing Point Park on the main beach and a smaller beach west of the boat ramp. Therefore, a total of 16.86 hours were invested in surveying for shorebirds and other aquatic birds in the study area. This was significantly more total survey time invested than in the winter survey (8.25 hours). This reflected a need to increase the potential for detecting migratory shorebirds in the study area during their summer presence.

Fixed-point surveying involved an experienced ornithologist (A.H.) standing at fixed points (survey stations) within each reserve and recording the number and species of all shorebirds and other aquatic birds present and their behaviour – foraging, preening, calling/interacting, resting on or flying to habitat. A handheld GPS (Garmin GPSmap 62s) was used to record the location of each of these survey stations (Table 1). Photographs of each surveyed site were taken using a Nikon Digital D3200 camera. Data were recorded in a field notebook. Bird nomenclature used complied with the industry standard – Christidis and Boles (2008). Surveying occurred during the Austral summer when the potential to detect intercontinental migratory shorebirds was high (Australian Government 2015).

The type, extent and condition of the main shorebird habitats present in the study area were recorded at each surveyed site. Shorebird and other aquatic bird habitats included rock platforms and outcrops, mud/sand flats, small sandy and shelly beaches and grassy banks near foreshore areas.

Potential threats to shorebirds and other aquatic bird species and their habitat were recorded at each surveyed site. These included the type and level of human disturbance including walking, jogging, cycling, fishing, boating, commercial ferry services and other recreational activities, dog activity (leashed and unleashed), rubbish disposal, type and degree of weed incursion, vehicle use, artificial lighting and noise from construction and maintenance activities. During the summer survey period, moderate-high level construction noise from upgrading Kissing Point Wharf occurred. Commercial (Toll) helicopter flights also occurred during most survey sessions, some operating about every 30 minutes and generated significant noise levels.

ITEM 7 (continued)

ATTACHMENT 2

7

Table 1: Location of survey stations at each surveyed site in the study area. The location of waypoints taken for stations is given as decimal degrees in Latitude (S = south) and Longitude (E = east). This is based on Map Datum WGS 84 and Zone 56H.

Site number	Site name	Survey station	Survey station location		Description
			Latitude (S)	Longitude (E)	
1	Kissing Point Park	KISSPT01	33.83063°	151.10458°	at council dinghy rack
1	Kissing Point Park	KISSPT02	33.83023°	151.10300°	middle of main beach on woody debris-laden berm
1	Kissing Point Park	KISSPT03	33.83124°	151.10187°	main jetty halfway to ferry area
2	Morrison Bay Park	MBAYPK01	33.82966°	151.11246°	edge of sandstone wall, centre of bay foreshore
3	Meadowbank Park	MBANKPK01	33.81849°	151.08087°	western end @ junction cycle/walk paths
3	Meadowbank Park	MBANKPK02	33.81858°	151.08289°	mudflats in mangroves off path
4	Meadowbank Memorial Park	MBANKMPK	33.82008°	151.08665°	on small beach, fenced for dog off-leash trial
5	Bennelong Park	BENPK01	33.82686°	151.10067°	small beach & mangroves near Concord-Ryde Sailing Club
6	Settlers Park	SETPK01	33.82474°	151.09947°	mangroves, sand berm & rock platform
6	Settlers Park	SETPK02	33.82334°	151.09758°	western section, small beach, recent bush regeneration

5. Results

5.1 Shorebird and aquatic bird species recorded during the survey

The summer survey recorded a total of 12 shorebird and aquatic bird species. This included mostly common, hardy resident species such as Australian White Ibis *Threskiornis molucca*, White-faced Heron *Egretta novaehollandiae* (Plate 1), Pied Cormorant *Phalacrocorax varius*, Chestnut Teal *Anas castanea* (Plate 2), Pacific Black Duck *Anas superciliosa* and Masked Lapwing *Vanellus miles* (Plate 3).

One threatened (in NSW) shorebird species was recorded during the summer survey – the resident Australian Pied Oystercatcher *Haematopus longirostris* (Plates 4-5). Three oystercatchers were recorded from 3-8 December 2020 flying east along Parramatta River opposite Settlers Park and Concord-Ryde Sailing Club. One oystercatcher was detected resting and foraging on rocks at low tide at Settlers Park (3/12/20) and Morrison Bay (9/12/20). These birds were likely part of the group of 5 oystercatchers recorded at Kissing Point wharf area in the winter survey (InSight Ecology 2020).

Four aquatic bird species of local and international conservation significance – Eastern Great Egret *Ardea modesta*, Striated Heron *Butorides striata*, Australasian Darter *Anhinga novaehollandiae* and Crested Tern *Thalasseus bergii* were also recorded during the survey. Eastern Great Egret is conserved under the Japan-Australia and China-Australia Migratory Bird Protection Agreements (JAMBA and CAMBA) but has resident breeding populations in eastern

ITEM 7 (continued)

ATTACHMENT 2

8

and southern Australia. One Eastern Great Egret foraged at low tide at Morrison Bay and Settlers Park beach (Plate 6). One Striated Heron foraged at 5 sites including Kissing Point Park beach, Bennelong Park mangroves, Morrison Bay Park rock platform and Meadowbank Memorial Park mangroves from 6 to 11 December 2020 (Plates 7-8). One Australasian Darter was recorded foraging in mangroves at the eastern end of Settlers Park beach on 12/12/20 (Plate 9). Crested Tern was recorded as 1-4 birds foraging over open water at Kissing Point Park beach and Morrison Park Bay during the survey and is listed under JAMBA (Plates 10-11).

No intercontinental migratory shorebird species were recorded during the survey despite significant survey effort (Section 4.2). This seems likely to have been due in part to disturbance caused by substantial ongoing noise generated by construction work on Kissing Point wharf (see Section 7.2.3). This work occurred throughout the summer survey period. In addition, helicopter flights often occurred at approximately 30-minute intervals during surveys of Kissing Point Park, Bennelong Park and Settlers Park sites.

Shorebird and other aquatic bird species recorded during the summer survey

Plate 1: White-faced Heron foraged for invertebrates, frogs and other small prey in stormwater drain outflows, on playing fields, muddy foreshores and along Kissing Point Park main beach and other sites during the summer survey. Image: InSight Ecology, taken at low tide, Morrison Bay mudflats, 8/12/20.



ITEM 7 (continued)

ATTACHMENT 2

9

Plate 2: Chestnut Teal foraged along sandy beaches and rested in mangroves and on rock platforms at 3 sites in the summer survey. These birds seem likely to have been the same pair (male in foreground, female at rear) that was recorded at each of these sites. Image: InSight Ecology, taken along Kissing Point Park main beach, 1/12/20.



Plate 3: Masked Lapwing is a common resident shorebird that forages on beaches, rock platforms, suburban parkland and in a wide range of other habitats. It foraged along sandy and muddy foreshores and rock platforms during the summer survey – shown here at Kissing Point Park main beach on an incoming tide, 7 July 2020 (InSight Ecology).



ITEM 7 (continued)

ATTACHMENT 2

10

Plates 4 and 5: Members of a small local population of the threatened Australian Pied Oystercatcher were recorded at Morrison Bay Park and flying along Parramatta River near Settlers Park and the sailing club. This immature bird (black tip to bill and pale eye and surrounding skin) was photographed resting on a rock groyne (circled in red in Plate 5) at low tide at Morrison Bay Park on 9/12/20 (InSight Ecology).



ITEM 7 (continued)

ATTACHMENT 2

11

Plate 6: Eastern Great Egret was detected as a lone bird foraging for small fish at Morrison Bay Park and Settlers Park shoreline at low tide. Photo taken of an adult bird in breeding plumage including black bill, pea-green facial skin and back plumes at Mason Park Wetland, Homebush, 12/12/20 (InSight Ecology).



Plates 7 and 8: Striated Heron is a shy resident small heron that stalks small fish and other prey along the shallow margins of rivers with mangroves, rock platforms and sandy/pebbly beaches. One bird was detected at 5 sites in the summer survey including Kissing Point Park main beach at low tide without other humans or dogs present which is where both photos were taken, 10/12/20 – InSight Ecology).



Kissing Point Park summer avifauna study report

InSight Ecology for City of Ryde

28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

12



Plate 9: Australasian Darter moves quickly under water in pursuit of fish. It is often seen holding its wings and tail out to dry on tree branches, groynes and concrete embankments beside waterways. One bird was recorded foraging in mangroves at the south-eastern section of beach at Settlers Park (photo taken by InSight Ecology at the junction of Saleyards and Powell's Creeks, Homebush, 9/12/20).



Kissing Point Park summer avifauna study report

InSight Ecology for City of Ryde

28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

13

Plates 10 and 11: Crested Tern forages for fish by flying over open water, often hovering then plunging rapidly into the water to capture (or not) the prey item. Individual birds were recorded in the survey at 3 sites including Kissing Point Park main beach. Photos by Andy Doldissen, Parramatta River, July 2006.



5.2 Shorebirds known or likely to occur at Kissing Point Park and environs

A total of 5 threatened shorebird species and 2 threatened other aquatic bird species may utilise beach, sand/mudflat and rock platform habitats at Kissing Point Park, Morrison Bay Park, Bennelong Park, Settlers Park and Meadowbank Park (DPIE - BioNet data extract, 22 December 2020). These include:

- Bar-tailed Godwit *Limosa lapponica* – 2 subspecies occur in eastern Australia: *baueri* Vulnerable in Australia and *menzbieri* Critically Endangered in Australia under the EPBC Act 1999 (Australian Threatened Species Scientific Committee 2016). Both subspecies are non-breeding summer migrants to Australia from western Alaska and north-eastern Siberia (*L. l. baueri*) and northern and western Siberia (*L. l. menzbieri*). The Australian population size of *L. l. baueri* has declined by 32% with an estimated total of 61,000 individuals (Garnett et al. 2011; Studds et al. 2017). Recent records exist for *L. l. baueri* at Waterbird Refuge, Haslams Creek and Homebush Bay (SOPA 2019), Brays Bay, Rivendell, Kissing Point Park, Prince Edward Park, Cabarita and Cintra Park, Concord (InSight Ecology 2014; CT Environmental 2016) – Plate 12;
- Eastern Curlew or Far Eastern Curlew *Numenius madagascariensis* – Endangered globally, Critically Endangered in Australia (Department of the Environment 2015); non-breeding migrant to Australia from north-east Asia, some birds may overwinter in Australia (Higgins and Davies 1996; InSight Ecology 2017a). Recorded at Hen and Chicken Bay (InSight Ecology 2014), Homebush Bay (SOPA 2019) and Middle Harbour (InSight Ecology 2017b) – Plate 13;

ITEM 7 (continued)

ATTACHMENT 2

14

Plates 12 and 13: Bar-tailed Godwit (left – Plate 12, Andy Doldissen at France Bay, Cabarita) and Eastern Curlew (right – Plate 13, Silva Vaughan-Jones) forage along intertidal sand/mudflats and beaches. Both species have been recorded at Hen and Chicken Bay and Homebush Bay. Both species are protected under JAMBA, CAMBA and ROKAMBA (Republic of Korea and Australia Migratory Bird Agreement).



- Curlew Sandpiper *Calidris ferruginea* – Endangered in NSW, Critically Endangered nationally; non-breeding migratory shorebird from north-east Asia. Protected under JAMBA, CAMBA and ROKAMBA. Recorded at Homebush Bay and Sydney Olympic Park wetlands (SOPA 2019);
- Red Knot *Calidris canutus* – Endangered in Australia; non-breeding migratory shorebird from Arctic Siberia. Forages on intertidal mudflats, estuaries, bays and sandflats. Recorded in small numbers along river estuaries and sheltered bays, particularly Hunter River system. Protected under JAMBA, CAMBA and ROKAMBA. Recorded at Homebush Bay (SOPA 2019);
- Sooty Oystercatcher *Haematopus fuliginosus* – Vulnerable in NSW; resident shorebird preferring rock platform habitat and breeds on offshore islands; possible occasional visitor to Parramatta River estuary; recorded in Middle Harbour (InSight Ecology 2017b);
- White-bellied Sea-Eagle *Haliaeetus leucogaster* – Vulnerable in NSW; a pair is known to breed at Wanngal Woodland, Sydney Olympic Park (SOPA 2019); listed under CAMBA. Previously recorded at Glades Bay Park Gladesville in 2018 (DPIE Scientific Licence dataset – BioNet);
- Eastern Osprey *Pandion cristatus* – Vulnerable in NSW; potential exists for individual birds to forage over Kissing Point Bay though this may be less likely than *H. leucogaster*.

5.3 Other shorebird and aquatic bird species of conservation significance

A total of 5 other aquatic bird species of conservation significance has either been recorded at Kissing Point Park and/or adjacent foreshore reserves or could potentially occur in the study area. They are of conservation significance in the study area because of the limited local availability of suitable foraging and roosting habitat, vulnerability to threats such as habitat loss and degradation particularly along their migration routes, disturbance by humans, dogs and vessels and entanglement in or ingestion of marine plastics, as well as the existence of only a limited number of local verified records. These include:

ITEM 7 (continued)

ATTACHMENT 2

15

- Crested Tern *Thalasseus bergii* – A fast-flying coastal bird that forages for fish over open water and beaches and was recorded during the study at Kissing Point Park main beach and Morrison Bay. This species is protected under JAMBA;
- Double-banded Plover *Charadrius bicinctus* – A small plover that forages along estuarine mudflats and breeds in New Zealand before migrating to over-winter in eastern Australia. Three wildlife rehabilitation records exist for this species from Delange Road Putney (5 May 2013), North Ryde (5 August 2013) and Macquarie Park (5/8/13) (DPIE 2020);
- Grey Plover *Pluvialis squatarola* – A non-breeding summer migrant to southern Australian beaches, estuarine mudflats and sandflats and sandy beaches from the Arctic Circle where it breeds. This species is protected under JAMBA, CAMBA and ROKAMBA. One record exists for this species from North Ryde Golf Course, 29 June 2015 - a wildlife rehabilitation record (DPIE 2020);
- Red-necked Stint *Calidris ruficollis* – A very small sandpiper that breeds in Siberia and western Alaska and migrates to intertidal mudflats, estuaries and sheltered bays in northern, southern and eastern Australia. Protected under JAMBA, CAMBA and ROKAMBA. Records exist for this species at Homebush Bay (SOPA 2019);
- Sharp-tailed Sandpiper *Calidris acuminata* – A medium-sized shorebird that migrates to Australia from breeding grounds in Arctic Siberia. Foraging habitats in Australia include inland freshwater wetlands, mudflats, mangroves, beaches and rocky shorelines. Protected under JAMBA, CAMBA and ROKAMBA. Records exist for this species at Homebush Bay (Waterbird Refuge) and Mason Park wetland (InSight Ecology 2008; SOPA 2019).

5.4 Shorebird habitat in the study area

A range of habitats were utilised by aquatic bird species including some shorebirds for foraging, resting, roosting and social interaction during the summer survey. These included sandy and pebbly beaches, intertidal mudflats and sandflats, mangroves, open water along Parramatta River, rocky substrates including natural rock platforms and small rocky headlands, as well as artificial structures – rockwalls, rock groynes, stormwater drainage culverts, jetties, wharves, boat ramps and other structures.

The remnants of a coastal saltmarsh community occurred at the eastern end of Kissing Point Park beach and in part of the south-east end of Settlers Park. Coastal saltmarsh is a listed threatened ecological community under the NSW Biodiversity Conservation Act 2016.

Some of the beaches, intertidal mudflats and mangroves surveyed in the project have been degraded by weed incursion, human disturbance, plastics and stormwater pollution and erosion of banks and mangroves by the wake of commercial ferry and other boating activities. This is particularly the case at Kissing Point Park main beach, Bennelong Park beach and mangroves, Settlers Park mangroves and rock platform and Meadowbank Memorial Park beach and mangroves.

ITEM 7 (continued)

ATTACHMENT 2

16

Plates 14 to 19 show habitat types utilised by shorebirds and other aquatic birds at surveyed sites in the study area. All photographs were taken during the winter (July 2020) survey period by InSight Ecology. A set of photographs taken during the summer 2020 survey is also available.

Plate 14: Rock platform, sandy beach and grassy bank habitats at low tide at Kissing Point Park main beach.



Plate 15: Rock platform, open water, sandy beach and isolated mangroves at Kissing Point Park main beach and planted habitats in Kissing Point Park at rear, viewed from the east.



ITEM 7 (continued)

ATTACHMENT 2

17

Plate 16: Mangrove forest being smothered by the entry of sand, presumably due to transport on the wake of ferries and storm events, at Meadowbank Park – the open water side (rear) fronting Parramatta River revealed mud/sandflats at low tide which could provide shorebird foraging habitat.



Plates 17 and 18: Morrison Bay Park mud/sand flat, shallow water (upper) and artificial rock wall and wooden support structure habitats (lower) available for use by shorebirds and other aquatic birds.



ITEM 7 (continued)

ATTACHMENT 2

18

Plate 19: Kissing Point Park jetty and wharf with rock platform exposed at low tide which supported the Australian Pied Oystercatcher group in the winter survey – July 2020 (two birds of that group are indicated by the red circle).



6. Potential impacts on shorebirds and their habitat

6.1 Legislative requirements

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) lists 37 migratory shorebird species from the Scolopacidae (sandpipers), Charadriidae (plovers) and Glareolidae (pratincoles) families that regularly visit Australia each year from their breeding grounds in the Arctic Circle. Seven of these species are listed as threatened under the EPBC Act. All of the 37 species are considered matters of national environmental significance under Australia's Wildlife Conservation Plan for Migratory Shorebirds (Australian Government 2017). Proposed activities that have, will have, or are likely to have a significant impact on a matter of national significance require approval from the Federal environment minister. Significant penalties exist for activities that proceed without approval.

The beaches, sand and mudflats, rock platforms and, potentially, mangroves of Kissing Point Park and its adjoining foreshore reserves provide foraging and roosting habitat for at least 3 migratory shorebird species listed as threatened under the EPBC Act. These are Bar-tailed Godwit, Eastern Curlew and Curlew Sandpiper (see Section 5.2 and Plates 12, 13 and 20). These species are subject to additional significant impact assessment criteria contained in EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Australian Government 2013). Also, guidelines exist in EPBC Act Policy Statement 3.21 to assist industry avoid, assess and mitigate impacts on EPBC Act listed migratory shorebird species (Australian Government 2017). Policy Statement 3.21 is a key action under the National Wildlife Conservation Plan for Migratory Shorebirds (Australian Government 2015).

ITEM 7 (continued)

ATTACHMENT 2

19

Plate 20: Curlew Sandpiper – a threatened intercontinental migratory shorebird that forages on sheltered intertidal mudflats with nearest records from Homebush Bay, the Waterbird Refuge, Bicentennial Park and Newington Nature Reserve. Photograph: Tom Tarrant and Museums Victoria.



Resident shorebird species such as Australian Pied Oystercatcher (threatened in NSW) and Black-winged Stilt are protected under NSW Biodiversity Conservation Act 2016. Proposals that have potential to adversely impact on these species and their habitat require consideration under this Act prior to their approval.

6.2 Key potential impacts on shorebirds and their habitat

In Australia, migratory shorebirds are particularly susceptible to impacts associated with land and water-based development and recreation activities because of their high site fidelity, tendency for most species to aggregate in mixed species foraging groups, very high energy demands and need for connected habitat comprising both foraging and roosting sites (Clemens et al. 2010). Activities resulting in habitat loss or degradation, disturbance or direct mortality are most likely to cause significant adverse impacts to migratory shorebirds (Australian Government 2017). Climate change and variability are also implicated in the global trend of decline in shorebird population abundance including along the important East Asian-Australasian Flyway (Murray and Fuller 2015; EAAF 2018a, b).

Direct loss of shorebird foraging and roosting habitat can occur through clearing, inundation, infilling or draining to construct harbours, marinas, ports or jetties (Piersma 2012; Sutherland et al. 2012). Indirect habitat loss may occur through changes to hydrology, water quality or vegetation structural changes near roosting sites such as weed invasion or building encroachment (Piersma 2012; Sutherland et al. 2012; BirdLife Australia 2017, 2018). Loss of key shorebird habitat reduces the amount and availability of foraging and roosting sites which reduces the ability of birds to accumulate energy needed for successful migration and breeding (BirdLife Australia 2017). Incremental loss of smaller shorebird sites such as in urban areas affects the total amount of shorebird habitat available at the broader landscape scale.

ITEM 7 (continued)

ATTACHMENT 2

20

Reduction in the quality of habitat can make areas unavailable or less attractive to shorebirds which are sensitive to small changes in invertebrate prey availability and foraging environments (Australian Government 2015). This can occur through reduced food availability, loss of high tide roosting sites, increased weed incursion, changes in water depth affecting food productivity, water pollution (including microplastics) and altered chemical balance of foraging substrates resulting from, for instance, disturbance of acid sulphate soils (Piersma 2012; CT Environmental 2016).

Disturbance of shorebird foraging, roosting and breeding sites have major adverse impacts on migratory and resident shorebirds and the habitats globally. This is because they often occur during critical life cycle stages for shorebirds such as during their limited foraging periods in Australia prior to their departure on their long-distance journeys to the breeding grounds in the northern hemisphere (Australian Government 2015, 2017). This is a time when shorebirds are feeding intensively to accumulate sufficient energy reserves for these incredible trips - one Bar-tailed Godwit was recorded flying 11,680 km non-stop from Alaska to New Zealand in 9 days (<http://www.abc.net.au/news/science/2016-06-17/flying-for-your-life-ann-jones/7459288>).

Activities such as power boating, water- and jet-skiing, fishing including harvesting of pipis and invertebrates, commercial ferries generating noise and wave energy to cause beach, mangrove and riverbank erosion, walking dogs, noise and shoreline lighting can all degrade shorebird habitat and disturb shorebirds (InSight Ecology 2017c). These activities commonly occur along Parramatta River foreshore including at Kissing Point Park and adjacent reserves. Shorebirds are particularly sensitive to sudden loud noises such as from construction sites and water-based approaches including boats and ferries (Australian Government 2017). If the level of disturbance is high and prolonged shorebirds can avoid all or parts of suitable foraging and/or roosting habitat. The use of 4WD vehicles on beaches has been responsible for the crushing of eggs and death of nestlings of Australian Pied Oystercatcher and Little Tern (InSight Ecology 2017c). Avian predators of resident shorebird species – mostly corvids (crows and ravens) and gulls – also account for the death of chicks and loss of eggs of these species.

Direct mortality is a major factor implicated in shorebird decline and loss of access to suitable habitat (Kirby et al. 2008; Piersma 2012). Actions that can lead to increased risk of shorebird mortality such as boat collision, strike caused by cables and towers, predation by fox, cat and/or dog, poor waste management and chemical or oil spills all adversely impact on shorebirds and their foraging, roosting and nesting habitats (Kirby et al. 2008; Murray and Fuller 2015).

6.3 Assessment of the shorebird habitat value of Kissing Point Park and potential impacts

This assessment follows a precautionary approach to the identification of important habitat for migratory shorebirds at Kissing Point Park, as recommended in EPBC Act Policy Statement 3.21 (Australian Government 2017). This approach assumes that potential habitat for 3 threatened migratory shorebird species - Bar-tailed Godwit, Eastern Curlew and Curlew Sandpiper – occurs at Kissing Point Park main beach and also possibly at Morrison Bay Park mudflats and sandflats.

Kissing Point Park is assessed as supporting beach, sand and mudflat habitats that supply suitable foraging substrate particularly at low tidal phases for the migratory Bar-tailed Godwit, Eastern Curlew and Curlew Sandpiper, as well as for resident shorebirds including Australian Pied Oystercatcher, Black-winged Stilt and Masked Lapwing (Figure 3). This is based on the results of

Kissing Point Park summer avifauna study report InSight Ecology for City of Ryde 28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

21

both surveys (July and December 2020) and supported by recent confirmed records of these shorebird species either at Kissing Point Park or in nearby estuarine habitats. However, further targeted surveys are needed during subsequent summers when Kissing Point Park main beach and environs are not disturbed by construction noise (Section 7.2).

The period when these habitats are most important to Bar-tailed Godwit, Eastern Curlew and Curlew Sandpiper coincides with their potential presence in Australia and specifically Parramatta River estuary – from September to March (DEC 2006; Australian Government 2015; Australian Threatened Species Scientific Committee 2016). Recent records exist for Bar-tailed Godwit at Kissing Point Park (CT Environmental 2016) and other sites in Parramatta River estuary (Section 5.2 and Figure 4), Eastern Curlew at Hen and Chicken Bay, Homebush Bay and Middle Harbour (Section 5.2) and Curlew Sandpiper at Homebush Bay, The Waterbird Refuge at Bicentennial Park and Newington Nature Reserve (Section 5.2).

Natural rock platforms exposed at low tide at Kissing Point Park in the eastern, main (near the Rivercat jetty and wharf) and north-western sections (near the boat ramp) provide important foraging, resting and social interaction sites for the threatened Australian Pied Oystercatcher (Figure 3). There is a need to prevent human and dog access to these areas at low and ebb tidal phases (Section 7.2).

However, there is a notable absence of suitable high tide roosting sites for threatened migratory and resident shorebird species at Kissing Point Park and the other 5 foreshore reserves surveyed in this study. Areas of beach above the high-water mark at Kissing Point Park in both the eastern and smaller north-western sections are minimal in extent and frequently disturbed by people and their dogs (Figure 3). These areas would be unlikely to provide suitable high tide roosting sites for shorebird species. Consideration could be given to providing suitable roosting habitat by improving weed management and restricting access to the weed-laden (herbicide-treated) bank at the eastern end of Kissing Point Park beach below the history-based stone feature near the walking/cycling trail (Section 7.2).

A total of 5 other migratory shorebird species listed under the EPBC Act have been recorded foraging in more extensive intertidal mudflats and sandflats and beaches in Hen and Chicken Bay, and Homebush Bay (Section 5.3). Two of these species (plovers) are known from wildlife rehabilitation records in City of Ryde LGA while the other 3 species – Red Knot, Red-necked Stint and Sharp-tailed Sandpiper are known mostly from Homebush Bay and, to a lesser extent, Hen and Chicken Bay. These additional species may occasionally utilise mudflats at low tide at Kissing Point Park but are considered to be less likely to occur there than Bar-tailed Godwit, Eastern Curlew and Curlew Sandpiper. This is because of the absence of undisturbed and extensive mudflats and sand flats at Kissing Point Park and the lack of recent confirmed records of naturally occurring (ie. non-rehabilitated) individuals of these species at Kissing Point Park.

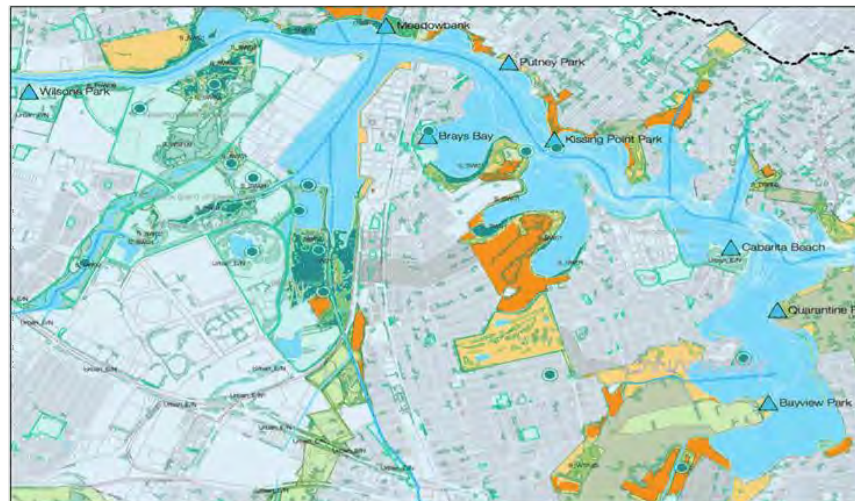
ITEM 7 (continued)

ATTACHMENT 2

Figure 3: Distribution of suitable potential foraging habitat, location of dog off-leash trial and potential impacts for 4 threatened shorebirds at Kissing Point Park. These include Australian Pied Oystercatcher (red dots indicate records from the winter 2020 survey), Bar-tailed Godwit (blue dots indicate DPIE records – CT Environmental 2016), Eastern Curlew and Curlew Sandpiper. Image: Google Earth 2020.



Figure 4: Recent records of observations of Bar-tailed Godwit in Parramatta River estuary from Hen and Chicken Bay west to Homebush Bay and Sydney Olympic Park (CT Environmental 2016; SOPA 2019). Teal = records of Bar-tailed Godwit (based on BioNet), light blue triangles are sites studied during the project; yellow = potential habitat corridors in fair condition, orange = potential corridors in poor condition; estuarine vegetation shown in teal and terrestrial vegetation patches in light green. Scale: c. 5 km from Quarantine Reserve to Homebush Bay's inflow into Parramatta River.



Kissing Point Park summer avifauna study report InSight Ecology for City of Ryde 28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

23

7. Mitigation of potential impacts of the dog off-leash trial on shorebirds and their habitat

7.1 Overview

The Dog Recreation Needs Study 2020 recommended a dog off-leash trial occur at Kissing Point Park and a number of other sites across the LGA (City of Ryde 2020). The trial commenced at Kissing Point Park (KPP) main beach on 19 October 2020 and will conclude on 11 April 2021.

The planning and implementation of this trial has generally minimised the risk posed to shorebirds and other aquatic bird species that forage along or could potentially utilise KPP main beach. City of Ryde adopted all four Priority 1 actions put forward in the winter 2020 survey report which were designed to achieve this goal (see Section 7.2 and InSight Ecology 2020). Also, most people sampled by InSight Ecology during the summer 2020 survey were generally supportive of the trial and felt adequate information about the purpose, nature and operation of the trial had been provided on signage at the site and during the earlier community consultation period.

7.2 Recommended actions and compliance with Kissing Point Park Dog Off-leash Trial

7.2.1 Actions recommended in the winter 2020 survey report

All four Priority 1 actions recommended in the winter 2020 survey report were adopted by City of Ryde in the planning, implementation and communication phases of the dog off-leash trial at KPP main beach. These were designed to avoid and/or mitigate impacts of the trial on EPBC Act-listed migratory shorebird species and their habitat discussed in Sections 6.1 to 6.3 of this report. They are intended to also protect resident shorebirds included the threatened Australian Pied Oystercatcher and other aquatic bird species at Kissing Point Park. The actions also conform with the objectives and actions of the East Asian-Australasian Flyway Communication, Education, Participation and Awareness Action Plan 2019-2024 (EAAF 2018b) and the National Wildlife Conservation Plan for Migratory Shorebirds (Australian Government 2015).

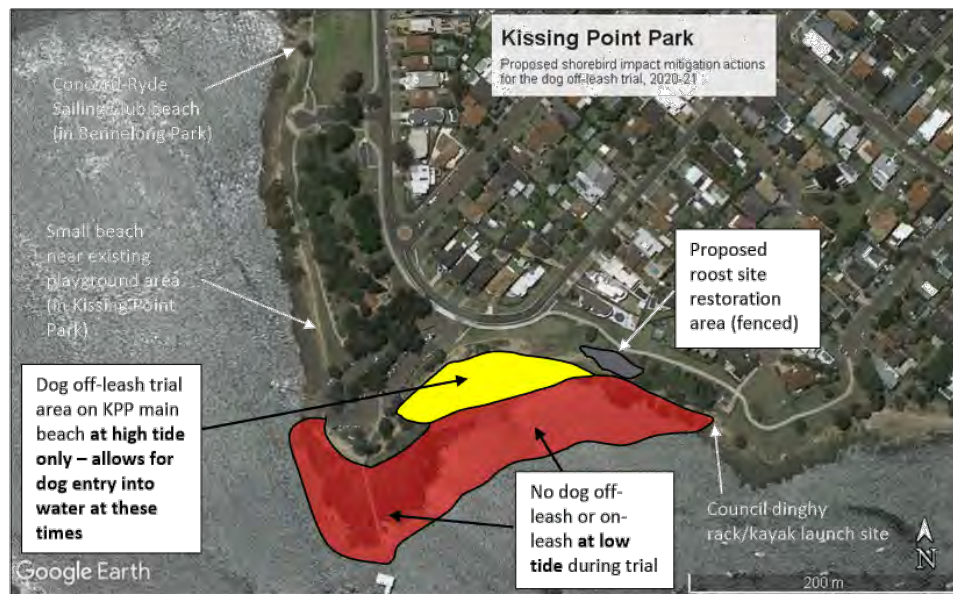
Priority 1 actions were to conduct the trial at high tide only on KPP main beach (Action 1), install suitable signage to inform and educate the public about the trial and shorebird conservation (Action 2), ensure dog off-leash use of KPP main beach does not occur at low and ebb tides when shorebirds are most likely to be foraging (Action 3), and survey KPP main beach for migratory and resident shorebirds and other aquatic birds in summer 2020 (Action 4) (InSight Ecology 2020). Priorities 2 and 3 actions were of less implementation immediacy but still important to pursue over time (see InSight Ecology 2020). Figure 5 shows the location of actions recommended in the winter 2020 survey report (InSight Ecology 2020).

ITEM 7 (continued)

ATTACHMENT 2

24

Figure 5: Location and actions recommended in the winter 2020 survey report to protect shorebirds and their habitat at Kissing Point Park. The dog off-leash trial area shown in yellow is restricted to the main beach during periods of high tide only. This zone extends into the edge of the red zone to allow for the entry of dogs into the water during periods of high tide only. The rest of the area shown in red is the exclusion zone for the dog off-leash trial and includes mudflats, sandflats and rock platforms exposed at low and ebb tides. Dog activity in this area should continue to be excluded to protect shorebirds and their habitat at low and ebb tidal phases. A potential high tide roost area at the eastern end of the main beach is shown in purple for possible future restoration. Image: Google Earth 2020.



7.2.2 Community support of and compliance with the trial's Priority 1 actions

Public support of and compliance with the requirements of the dog off-leash trial was observed to be generally high (about 80%), at least during the two-week period of the summer 2020 survey at the site. This was based on focused discussions that InSight Ecology had with dog-walkers and people without dogs at and near KPP main beach during the summer survey. Only 2 dog-walkers were opposed to the trial while 8 others were supportive and understood the importance of protecting shorebirds and their habitat. Of this supportive group, two were local residents who had each lived in the area for over 40 years. They had a wealth of knowledge and lived experience of Kissing Point and surrounds.

A degree of vandalism was observed at the eastern-most sign installation involving the removal of the plastic-covered paper section of the sign and its discard into the adjacent weedy area above the beach. However, City of Ryde staff quickly replaced this and another paper sign with more durable corflute and these signs remained undamaged during the survey period.

ITEM 7 (continued)

ATTACHMENT 2

25

7.2.3 Recommendations following the completion of both surveys

A set of recommended actions are provided based on the results of both the summer and winter 2020 surveys of shorebirds and other aquatic birds and their habitat in the study area. These place emphasis on protecting shorebird species and their habitat particularly at Kissing Point Park, Bennelong Park, Settlers Park and Morrison Bay Park, allowing for dog off-leash access to Parramatta River, targeted shorebird surveys in summer, community engagement and education, and monitoring and review of the performance of implemented key actions over time. These are presented below.

Key Action 1: Protect shorebird species and other aquatic birds and their habitat

- Guiding objective: Ensure existing and proposed land use and development activities contain actions to protect, conserve and mitigate the risk of harm to shorebirds and other aquatic bird species and their habitats.
- Priority level: 1 (high - immediate and ongoing planning and implementation).
- Recommended standard: Best-practice shorebird protection measures should be followed wherever possible, compliant with industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species (Australian Government 2017) and the National Wildlife Conservation Plan for Migratory Shorebirds (Australian Government 2015).
- Focus sites in study area: Kissing Point Park main beach and adjacent rock platforms, Bennelong Park mangroves, rock platform and beach, Settlers Park mangroves, rock platform and beach and Morrison Bay Park mud/sand flats, rock groyne and rock platform.

Key Action 2: Management of dog off-leash access to Parramatta River foreshore

- Guiding objective: Establish a designated dog off-leash area for use at any tidal phase at Bennelong Park Beach (BPB), situated between the mangrove forest remnant and the old Halvorsen boatyard complex (Figure 6 and Plate 21). This would replace the current dog off-leash trial area at KPP main beach upon completion of the trial there on 11 April 2021. Therefore, dogs would be required to be on-leash at low and ebb tides on KPP main beach after this date.
- Priority level: 1 (high – immediate planning and implementation).
- Potential benefits: Dog access for swimming and exercise at any tidal phase at BPB – existing use of this 50-60 m long sandy beach for dog exercise and swimming was evident during the summer survey and discussions with dog owners indicated strong support for ongoing dog access to this site; protection and desirably restoration of KPP main beach saltmarsh and mangrove vegetation and dunes; future potential use of KPP main beach for human swimming; improved spatial separation of dog and human use of foreshores in this area thus reducing potential conflicts.
- Recommended standard: Review existing dog off-leash policies and programs in use at City of Canada Bay (Majors Bay Reserve, Concord), Northern Beaches Council, Brisbane City Council and other relevant council areas to determine dog off-leash foreshore access best-practice principles and practical actions that could be used effectively at BPB. Consultation with Concord-Ryde Sailing Club is recommended prior to designation of BPB as a dog off-leash site.

ITEM 7 (continued)

ATTACHMENT 2

26

- Focus site: Bennelong Park Beach – sandy section accessed from existing wooden viewing platform off walking path.

Figure 6: Location of recommended new dog off-leash site at Bennelong Park Beach, between Concord-Ryde Sailing Club and the old Halvorsen complex. The proposed dog beach access and swimming site is indicated by an enclosed yellow line. The purple shaded area indicates the existing remnant mangrove forest which needs restoration - dog and human access to this area should be discouraged. The red arrowed boxes indicate suggested locations for dog off-leash beach access signs. The beach is accessed by walking from Bennelong Park and the northern carpark of Kissing Point Park. Image: Google Earth 2020.



Plate 21: Bennelong Park Beach, looking north to the old Halvorsen complex (InSight Ecology, 9/12/20)



Kissing Point Park summer avifauna study report

InSight Ecology for City of Ryde

28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

27

Key Action 3: Undertake targeted summer surveys of shorebirds at the main sites

- Guiding objective and justification: Determine shorebird presence and species richness at KPP main beach, Settlers Park beach and mangroves, Bennelong Park mangroves and Morrison Bay sand/mudflats through repeated surveying in summer. This is needed because the results of the summer 2020 survey were adversely affected by loud and constant construction noise at Kissing Point jetty. As a likely result, only 3-5 hardy, common and resident species were recorded at KPP main beach. Also, to date we have only one summer survey sample of migratory shorebirds at KPP main beach and other sites – additional data is recommended across ensuing summers. Previous records for KPP and nearby sites indicate that some intercontinental migratory shorebirds have foraged at these sites and so there is a need to confirm their presence and habitat use. Periodic habitat assessment is also recommended at focus sites.
- Priority level: 1 (high – ongoing planning and implementation).
- Recommended standard: As used in the winter and summer 2020 surveys, noting that the level of survey site replication was intentionally increased in the summer 2020 program. The survey methods used should continue to comply with national shorebird survey standards.
- Focus sites: Kissing Point Park main beach and adjacent rock platforms, Bennelong Park mangroves, Settlers Park mangroves, rock platform and beach and Morrison Bay Park mud/sand flats and rocky substrates.

Key Action 4: Promote local community engagement and education in shorebird conservation

- Guiding objective: Build on progress achieved by the dog off-leash trial at KPP main beach (and at Meadowbank Memorial Park where fencing currently occurs to limit dog access) in engaging and educating the Putney-Ryde community about the need to understand shorebirds and take practical local action to protect shorebirds and their habitat. Ideally, this could result in the formation of a local 'Friends of Kissing Point Park' group that could work to care for and protect the beach and rock platform habitats from weeds, rubbish/pollution, off-leash dog use at low and ebb tides and other threats to shorebirds. Council could utilise the results of similar programs implemented by other councils including City of Canada Bay, Coffs Harbour City and Northern Beaches Council, as well resources available through Parramatta River Catchment Group and BirdLife Australia.
- Priority level: 1 (high – immediate and ongoing planning and implementation).
- Recommended standard: As recommended in the National Wildlife Conservation Plan for Migratory Shorebirds (Australian Government 2015) and Shorebirds 2020 Program (BirdLife Australia).
- Focus sites: Start with Kissing Point Park main beach then expand to Settlers Park and Bennelong Park, subject to the availability of resources.

Key Action 5: Monitor the effectiveness of actions to protect shorebirds and their habitat

- Guiding objective: Monitor the effectiveness of key actions taken to protect and conserve shorebirds and their habitat at KPP main beach and other sites in the study area over time. This includes assessing the impact of controlling dog access to the foreshore (e. g.

ITEM 7 (continued)

ATTACHMENT 2

28

at KPP main beach and Bennelong Park Beach) on shorebird and other aquatic bird presence and habitat use.

- Priority level: 1-2 (high-medium, depending on availability of resources – note that external funding may be possible to assist Council in this work).
- Recommended standard: A monitoring program could be developed to conform with standards used in other shorebird studies (e. g. in Victoria, NSW, WA and Queensland) but also meet City of Ryde’s specific requirements.
- Focus sites: Kissing Point Park main beach, Meadowbank Memorial Park, Bennelong Park Beach and Settlers Park.



Australian Pied Oystercatcher on Kissing Point Park rock platform, 10 July 2020 (InSight Ecology)

ITEM 7 (continued)

ATTACHMENT 2

29

References

- AECOM, 2010. Parramatta River Estuary Processes Study. AECOM for Parramatta River estuary Committee, October 2010, 36 pp.
- Anne Clements and Associates, 2016. Ryde Flora and Fauna Study – Autumn 2016, prepared for City of Ryde.
- Applied Ecology, 2014. Parramatta River Catchment Native Habitats and Fauna. Applied Ecology Pty Ltd for Parramatta River Catchment Group
- Applied Ecology, 2017. Flora and Fauna Surveys, 2017 – Terry’s Creek, Kitty’s Creek, Field of Mars Reserve and Buffalo Creek tributaries, December 2017, Applied Ecology Pty Ltd for City of Ryde, 426 pp.
- Applied Ecology, 2018. Flora and Fauna Surveys, 2018 – Small and mixed-use bushland reserves. December 2018, Applied Ecology Pty Ltd for City of Ryde, 491 pp.
- Australian Government, 2013. Matters of National Environmental Significance – Significant Impact Guidelines 1.1, EPBC Act 1999. Department of the Environment, Canberra, 39 pp.
- Australian Government, 2015. Wildlife Conservation Plan for Migratory Shorebirds. Department of the Environment, Canberra, August 2015, 32 pp.
- Australian Government, 2017. EPBC Act Policy Statement 3.21: Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species. Department of Environment and Energy, Canberra.
- Australian Threatened Species Scientific Committee, 2016. Conservation Advice for Bar-tailed Godwit *Limosa lapponica baueri*, Threatened Species Conservation Committee, 5 May 2016
- BirdLife Australia, 2017. National Migratory Shorebird Conservation Action Plan, prepared by D.R. Weller and C.V. Lee, September 2017, 57 pp.
- BirdLife Australia, 2018. A review of dog impacts to beach-nesting birds and management solutions, prepared by G. Maguire, 7 pp.
- Biosphere Environmental Consultants Pty Ltd, 2006. Ryde Flora and Fauna Study 2006 – Brush Farm Park, Darvall Park, Lambert Park, Field of Mars Reserve, 118 pp.
- Biosphere Environmental Consultants Pty Ltd, 2007. Ryde Flora and Fauna Study 2007 - Terrys Creek Reserves, Buffalo Creek Reserves, Kittys Creek Reserves, Memorial Park, 154 pp.
- Biosphere Environmental Consultants Pty Ltd, 2008. Ryde Flora and Fauna Study 2008 - Bushland reserves, 210 pp.
- Bureau of Meteorology, 2020. Tidal predictions for Sydney Harbour at Fort Denison, July 2020 to June 2021.
- Christidis, L. and Boles, W., 2008. Systematics and Taxonomy of Australian Birds. CSIRO Publishing, Melbourne.
- City of Ryde, 2016. Ryde Biodiversity Plan. Prepared by Ecological Australia for City of Ryde. Adopted 6 December 2016, 75 pp.
- City of Ryde, 2018. Parramatta River Parklands Draft Plan of Management. City of Ryde, May 2018, 96 pp.
- City of Ryde, 2020. Dog Recreation Needs Study 2020 – Technical Report, May 2020, City of Ryde, 94 pp.
- Clemens, R. S., Weston, M. A., Haslem, A., Silcocks, A. and Ferris, J. 2010. Identification of significant shorebird areas: thresholds and criteria. Diversity and Distributions 16: 229-242.
- CSIRO, 2020. Australian Living Atlas database searched within a 5 km radius of study area.
- CT Environmental, 2016. Parramatta River Catchment Ecological Health Project. Prepared for Parramatta River Catchment Group, 127 pp.

ITEM 7 (continued)

ATTACHMENT 2

30

- Department of the Environment, 2015. Conservation Advice *Numenius madagariensis* Eastern Curlew. Department of the Environment, Canberra, 26 May 2015. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/847-conservation-advice.pdf>.
- EAAF, 2018a. East Asian-Australasian Flyway (EAAF) Partnership Strategic Plan 2019-2028, 11 pp.
- EAAF, 2018b. East Asian-Australasian Flyway (EAAF) Partnership Communication, Education, Participation and Awareness Action Plan, 2019-2024, 9 pp.
- Garnett, S., Szabo, J. and Dutton, G., 2011. The Action Plan for Australian Birds 2010, CSIRO Publishing, Melbourne.
- Higgins, P. J and Davies, S.J.J.F., 1996. Handbook of Australian, New Zealand and Antarctic Birds. Volume 3: Snipe to Pigeons. Oxford University Press, Melbourne.
- InSight Ecology, 2008. Bird Communities and Habitats of Strathfield Local Government Area, 2007-2008. Report by InSight Ecology for Strathfield Municipal Council, 83 pp.
- InSight Ecology 2011a. Avifaunal communities of the River to River Corridors Project study area: October 2010 survey report. Report by InSight Ecology for River to River Corridors Project (City of Ryde and Hunters Hill Council, Sydney), 63 pp.
- InSight Ecology, 2011b. Avifaunal communities of the River to River Corridors Project study area: October 2011 survey report. Report by InSight Ecology for River to River Corridors Project (City of Ryde and Hunters Hill Council, Sydney), 25 pp.
- InSight Ecology, 2012. Avifaunal communities of the River to River Corridors Project study area: April 2012 survey report. Report by InSight Ecology for River to River Corridors Project (City of Ryde and Hunter's Hill Council, Sydney), 79 pp.
- InSight Ecology, 2014. The Fauna of City of Canada Bay Local Government Area: 2013-2014. Report on a study by InSight Ecology for City of Canada Bay Council, Sydney, 193 pp.
- InSight Ecology, 2017a. The Fauna of Strathfield Council Local Government Area: 2016. Technical report by InSight Ecology for Strathfield Municipal Council, 136 pp.
- InSight Ecology, 2017b. The Avifauna of the City of Willoughby Local Government Area – Survey Report 2 (August 2016). InSight Ecology for Willoughby City Council, Sydney, 127 pp.
- InSight Ecology, 2017c. Madeay River Estuary Migratory and Threatened Shorebird Species Management Strategy. Report prepared by InSight Ecology for Kempsey Shire Council, 90 pp.
- InSight Ecology, 2020. Kissing Point Park Avifauna Study – July 2020. Report by InSight Ecology for City of Ryde, Sydney, 34 pp.
- Kirby, J. S., Stattersfield, A. J., Butchart, S. H. M., Evans, M. I., Grimmett, R. F. A., Jones, V. R., O'Sullivan, J., Tucker G. M., and Newton, I., 2008. Key conservation issues for migratory land- and waterbird species on the world's major flyways. *Bird Conservation International* **18**, S49-S73.
- Murray, N. J. and Fuller, R. A., 2015. Protecting stopover habitat for migratory shorebirds in East Asia. *Journal of Ornithology*, **156**, Suppl. 1, 217-225.
- NSW Department of Environment and Conservation, 2006. Threatened migratory shorebird habitat mapping project. Phil Straw & Associates for Department of Environment and Conservation.
- NSW Department of Planning, Industry and Environment (DPIE), 2020. NSW Wildlife Atlas (BioNet) database search for City of Ryde LGA threatened and protected biodiversity records, 1990-2020.
- Parramatta River Catchment Group, 2018. The Parramatta River Masterplan. Parramatta River Catchment Group, 47 pp.

Kissing Point Park summer avifauna study report

InSight Ecology for City of Ryde

28 January 2021

ITEM 7 (continued)

ATTACHMENT 2

31

- Piersma, T., 2012. What is habitat quality? Dissecting a research portfolio on shorebirds. In 'Birds and Habitat – Relationships in a Changing Landscape'. (Ed. R. J. Fuller), pp. 383-407, Cambridge University Press, England.
- SOPA, 2019. Shorebird occurrence records at Sydney Olympic Park and Homebush Bay. Sydney Olympic Park Authority.
- Studds, C. E., Kendall, B. E., Murray, N. J., Wilson, H. B., Rogers, D. I., Clemens, R. S., Gosbell, K., Hassell, C. J., Jessop, R., Melville, D.S., Milton, D. A., Minton, C. D. T., Possingham, H. P., Riegen, A. C., Straw, P., Woehler, E. J. and Fuller, R. A. Rapid population decline in migratory shorebirds relying on Yellow Sea tidal mudflats as stopover sites. *Nature Communications* 8, 14895
<https://doi.org/10.1038/ncomms14895>
- Sutherland, W. J., Alves, J. A., Amano, T., Chang, C. H., Davidson, N. C., Finlayson, C. M., Gill, J. A., Gill, R. E., González, P. M., Gunnarsson, T. G., Kleijn, D., Spray, C. J., Székely, T., & Thompson, D. B. A., 2012. A horizon assessment of current and potential future threats to migratory shorebirds. *Ibis* 54: 663-679.

Document status:

Original report submitted by InSight Ecology to City of Ryde – 28 January 2021.