



Atkinson Dam Threatened Bird Survey

Prepared for:
Seqwater

Report issued:
April 2019

This document has been prepared and is certified by:

AUSECOLOGY PTY LTD

ABN 15 155 304 751

PO Box 594, Morningside, QLD 4170

w www.ausecology.com

e info@ausecology.com

Document status

Revision	Reason for issue	Author	Reviewed	Issued to	Date
A	Internal Draft	Rohan Etherington	Brad Jeffers	-	26/04/2019
B	Internal Draft	Rohan Etherington	Ralf Regeer	-	29/04/2019
0	Issued for Information	Rohan Etherington	Brad Jeffers	Peter McGahan	30/04/2019

Executive Summary

Atkinson Dam is a 30,401 megalitre irrigation water storage constructed in 1970 on Buaraba Creek (Atkinson's Lagoon) 22 km northeast of Gatton in the Somerset Region of Queensland. Due to drought conditions in the preceding two years, dam water levels have fallen below the minimum operating level. Therefore, local irrigators have been unable to access water in recent months.

As the licence holder to the dam, Seqwater is investigating altering the *Lower Lockyer Valley Water Supply Scheme Operations Manual*, which is administered by the Queensland Department of Natural Resources, Mines and Energy, to allow water to be drawn from Atkinson Dam.

The purpose of this project was to locate, assess habitat suitability for, and determine potential impact of a complete draw down of Atkinson Dam, on birds protected under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Desktop searches revealed several threatened and migratory bird species listed protected by the EPBC Act. Consulting the *Survey guidelines for Australia's threatened birds*, a field survey methodology was designed to include a minimum 25 hours of: line transects, 1-hr stationary and 10-minute stationary searches over five days. In total 29.65 hours was spent surveying the site.

A total of 83 native bird species were detected over the five days. Most species belonged to the orders Anseriformes (waterfowl), Charadriiformes (shorebirds), Pelecaniformes (pelicans, ibis, herons and cormorants) and Podicipiformes (grebes), which forage and breed in wetland ecosystems.

No threatened species listed under the EPBC Act were observed during the survey. However, analysis of records and habitat suggested that the Critically Endangered curlew sandpiper and Endangered Australian painted snipe have the potential to occur at the site.

A total of six species listed as migratory species by the EPBC Act were observed during the survey. A further nine migratory species were determined to have the potential to utilise habitat at Atkinson Dam based on analysis of records and habitat.

Each migratory and threatened species known, or have the potential, to occur at Atkinson Dam was assessed to determine if the proposed action would cause a significant impact upon these species using the *Matters of National Environmental Significance Significant impact guidelines 1.1*.

As a result of this assessment it was determined that the proposed action of a complete draw down on water at Atkinson Dam could possibly have a significant impact on Australian painted snipe. Therefore, as a precautionary measure, the proposed action should be referred the Commonwealth Department of Environment (DoE) to assess the need for an environmental approval.

Table of contents

Executive Summary	iii
Glossary of Terms	vi
1 Introduction	7
1.1 Background	7
1.2 Project scope	7
2 Methodology	8
2.1 Desktop assessment	8
2.2 Field survey	8
2.3 Habitat assessment	12
3 Results	13
3.1 Desktop searches	13
3.2 Habitat description	14
3.3 Survey results	15
4 Discussion	26
4.1 Legislative context	26
4.2 Determination of significant impact	26
5 Conclusion	35
6 References	36
Appendix A - Mapping	39
Appendix B – Desktop searches	42
Appendix C – Survey Metadata	60
Appendix D – Species List	63
Appendix E – Survey Data	68

Tables

Table 2-1 Recommended targeted survey guidelines for species and species groupings (Commonwealth of Australia, 2010)	8
Table 2-2 Survey effort across method type and target species/species groupings	10
Table 3-1 Likelihood of presence analysis of threatened and or migratory species based upon records, preferred habitat and observed habitat	21
Table 4-1 Significant impact criteria assessment for Critically Endangered/Endangered bird species with potential occurrence at Atkinson Dam	27
Table 4-2 Significant impact criteria assessment for migratory species in the order Charadriiformes (Shorebirds) with known or potential occurrence at Atkinson Dam	31
Table 4-3 Significant impact criteria assessment for migratory bird species the Eastern osprey and glossy ibis at Atkinson Dam	34

Figures

Figure 3-1 Curlew sandpiper (Image: Ralf Regeer)	13
Figure 3-2 Squatter pigeon (Image: Ralf Regeer)	13
Figure 3-3 Western Alaskan bar-tailed godwit (Image: Rohan Etherington)	13
Figure 3-4 Australian painted snipe (Image: Birdlife Australia)	13

Figure 3-5 <i>Persicaria orientalis</i> (Prince's feather) growing along the eastern, western and northern edges of the main pond	14
Figure 3-6 Bare, heavily grazed edges of the southern edge of the main pond	14
Figure 3-7 Heavily grazed edges of the secondary pond	14
Figure 3-8 Small, shallow lagoons lined with <i>Juncus usitatus</i> (common rush) in the upper reaches of the Atkinson Dam	14
Figure 3-9 Exotic pasture grasses on drier slopes within the dam limit	15
Figure 3-10 Eucalypt dominated woodland-open forest above the upper limit of the dam	15
Figure 3-11 Native bird species richness by order	16
Figure 3-12 Black-winged (pied) stilt	16
Figure 3-13 Flock of red-necked avocet in flight	16
Figure 3-14 Grey teal in flight	17
Figure 3-15 Male (right) and female (left) Australasian shoveler	17
Figure 3-16 Female black-necked stork	17
Figure 3-17 Yellow-billed spoonbill	17
Figure 3-18 Whistling kite	18
Figure 3-19 White-bellied sea-eagle (immature)	18
Figure 3-20 Male magpie-lark	18
Figure 3-21 Willie wagtail	18
Figure 3-22 Fairy martin (left) and welcome swallow (right)	19
Figure 3-23 Tree martin	19
Figure 3-24 Black-tailed godwit entering breeding plumage	20
Figure 3-25 Sharp-tailed sandpiper	20
Figure 3-26 Glossy ibis	20

Glossary of Terms

Acronym	Description
cm	Centimetres
DES	Department of Environment and Science (Qld)
DoE	Department of Environment (Commonwealth)
DNRME	Department of Natural Resources, Mines and Energy (Qld)
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
km	Kilometres
m	Metres
MNES	Matter of National Environmental Significance
MSES	Matter of State Environmental Significance
NC Act	<i>Nature Conservation Act 1992</i> (Qld)
PMST	Protected Matters Search Tool (Commonwealth)
sp.	Species (singular)
spp.	Species (plural)
SPRAT	Species Profile and Treats Database (Commonwealth)
sub sp.	Sub species

1 Introduction

This section provides background information and scope of the project undertaken.

1.1 Background

Atkinson Dam is a 30,401 megalitre irrigation water storage constructed in 1970 on Buaraba Creek (Atkinson's Lagoon) 22 km northeast of Gatton in the Somerset Region of Queensland (Appendix A-1; Seqwater, 2016). The dam is within the Lower Lockyer Valley Water Supply zone and is operated by Seqwater (the "licence holder") under the Lower Lockyer Valley Water Supply Scheme Operations Manual (the "manual"; State of Queensland, 2018). Section 4(2) of the manual states that:

"The licence holder may release water from any infrastructure if the water level in that infrastructure is above its minimum operating level and the release is necessary—

- (a) to supply downstream demand; or
- (b) for operational purposes."

The prescribed Minimum Operating Level (MOL) for Atkinson Dam in the manual is at elevations of 57.34 m Above Height Datum (AHD) and 57.84 m AHD at the Buaraba Creek and Brightview Channel outlets, respectively. The current level of Atkinson Dam is below these MOL thresholds.

The entire Somerset Region has been drought declared since the 10th of March 2017 and as at the 4th of March 2019 this declaration had not been revoked (State of Queensland, 2019). As the level of Atkinson's Dam is below the MOL irrigators in the area have been unable to access water for irrigation of crops. Therefore, Seqwater is investigating the potential to vary the manual to accommodate draw down below the current MOL to enable supply to irrigators.

1.2 Project scope

Ausecology Pty Ltd ("Ausecology") has been engaged by Seqwater to: locate, assess habitat suitability for, and determine potential impact by a complete draw down of Atkinson Dam, on birds protected under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

2 Methodology

This section details the desktop searches conducted prior to the survey, the survey methods utilised in the field and habitat assessment used for Matters of National Environmental Significance (MNES).

2.1 Desktop assessment

A rectangle shaped polygon (bounding coordinates of -27.408993, 152.413295 and -27.446475, 152.4679969) to represent the irregular shaped Atkinson Dam for conducting desktop searches. Using this rectangular polygon buffered by one kilometre:

- Conservation significant WildNet records were extracted using the Biomaps application (State of Queensland, 2019); and,
- A Protected Matters Search was performed using the Protected Matters Search Tool (PMST; Commonwealth of Australia, 2019).

2.2 Field survey

2.2.1 Identification of target species and species groupings

WildNet desktop searches returned a total of 26 species listed as migratory or threatened species listed under the EPBC Act (Appendix B-1; Section 3.1). Of these species two were not considered as part of this survey given that their habitat would not be affected by the proposed action.

- Swift parrot (*Lathamus discolor*) mostly forages in flowering eucalypts.
- White-throated needletail (*Hirundapus caudacutus*) exclusively aerial.

2.2.2 Identification of suitable survey techniques

Of the four threatened species, two species (squatter pigeon (southern subspecies) (*Geophaps scripta* subsp. *scripta*) and Australian painted snipe (*Rostratula australis*)) had specific targeted survey guidelines published in the *Survey guidelines for Australia's threatened birds* (Commonwealth of Australia, 2010). All other species were categorised into bird groupings to select survey methods as per Appendix 2 of the survey guideline (Commonwealth of Australia, 2010; Table 2-1).

Table 2-1 Recommended targeted survey guidelines for species and species groupings (Commonwealth of Australia, 2010)

Species/Grouping	Number of Species	Recommended Survey Techniques
Species Specific		
Australian painted snipe (<i>Rostratula australis</i>)	N/A	Targeted stationary observations at dawn and dusk (10 hrs/5 days). Land-based area searches or line transects (10 hrs/ 3 days).
Squatter pigeon (southern subspecies) (<i>Geophaps scripta</i> subsp. <i>scripta</i>)	N/A	Area searches or transect surveys (15 hrs/3 days). Flushing surveys (10 hrs/3 days)

Species/Grouping	Number of Species	Recommended Survey Techniques
Species Groupings		
Birds of prey – conspicuous diurnal	2	<p>Observation from vantage points to detect soaring species over suitable habitat. Detection by sightings.</p> <p>Area searches on foot in suitable habitat in and around the study area.</p> <p>Detection by sightings, calls and signs of occupancy.</p> <p>Transect surveys by vehicle within extensive study areas looking for flying or perched birds and nests.</p> <p>Transect surveys by boat along suitable coastal or riverine habitat for detection of birds and nests.</p> <p>Aerial surveys in extensive areas for detecting birds and nests of larger species.</p>
Shorebirds	20	<p>Observation using telescope from vantage points overlooking suitable foraging or roosting habitat at appropriate periods of the tidal cycle.</p> <p>Transect surveys by boat around offshore islands, lake shores, coastlines and rivers.</p> <p>Aerial surveys of foraging habitat in large or remote study areas at the appropriate period of the tidal cycle.</p> <p>Diurnal area search in appropriate habitat in and around the study area, including flushing surveys for snipe and painted snipe.</p> <p>Nocturnal area or transect spotlight surveys in suitable habitat either on foot or from a slow-moving vehicle for the plains wanderer.</p>

Species/Grouping	Number of Species	Recommended Survey Techniques
Wetland birds	1	<p>Broadcast surveys in suitable habitat for solicited call responses and sightings. Broadcast stations may be established at wetland edges to avoid damage to wetland vegetation. Stations should usually be at least 250m apart.</p> <p>Observation of targeted foraging habitat within wetlands in the early morning or early evening. Detection by sightings and unsolicited calls.</p> <p>Area searches in suitable habitat for sightings, nests, indicative footprints and feathers.</p>

Considering the recommended survey guidelines presented in Table 2-1, the following survey effort was planned to be achieved at a minimum:

- Ten, 1-hour stationary surveys at the edge of the dam in optimal foraging locations for shorebirds, wetland birds and raptors with a focus on Australian painted snipe.
- Ten hours of line transects long the edge of the dam for squatter pigeon, Australian painted snipe, shorebirds, wetland birds and raptors.
- Five hours of line transects or stationary ten-minute surveys in open woodland and grassy areas focussing on squatter pigeon.

2.2.3 Completed survey effort

In the field a total of 29.65 hours was spent performing dedicated surveys across 20 line transects, 10 stationary 1-hour and 6 stationary 10-minute point surveys (Table 2-2; Appendix A-2; Appendix C).

Table 2-2 Survey effort across method type and target species/species groupings

Site	Effort (hrs)	squatter pigeon	Australian painted snipe/wetland birds	shorebirds	raptors
LIN01	2.75	✓	✓	✓	✓
LIN02	0.33	✓			✓
LIN03	0.33	✓			✓
LIN04	0.17	✓			✓
LIN05	0.93	✓	✓	✓	✓
LIN06	0.27	✓			✓
LIN07	1.02	✓	✓	✓	✓
LIN08	0.33	✓			✓
LIN09	0.67	✓	✓	✓	✓
LIN10	0.17	✓			✓
LIN11	1.70	✓	✓	✓	✓

Site	Effort (hrs)	squatter pigeon	Australian painted snipe/wetland birds	shorebirds	raptors
LIN12	1.20	✓			✓
LIN13	0.67	✓			✓
LIN14	0.55	✓	✓		✓
LIN15	1.28	✓	✓	✓	✓
LIN16	0.67	✓	✓	✓	✓
LIN17	1.42	✓	✓	✓	✓
LIN18	0.32	✓	✓		✓
LIN19	1.37	✓			✓
LIN20	2.50	✓	✓	✓	✓
Line Transects	18.63	18.63	13.80	12.93	18.63
SHR01	1.00	✓	✓	✓	✓
SHR02	1.00	✓	✓	✓	✓
SHR03	1.00	✓	✓	✓	✓
SHR04	1.00	✓	✓	✓	✓
SHR05	1.00	✓	✓	✓	✓
SHR06	1.17	✓	✓	✓	✓
SHR07	1.00	✓	✓	✓	✓
SHR08	1.02	✓	✓	✓	✓
SHR09	1.00	✓	✓	✓	✓
SHR10	1.00	✓	✓	✓	✓
Stationary 1-hr	10.18	10.18	10.18	10.18	10.18
STM01	0.17	✓	✓	✓	✓
STM02	0.17	✓			✓
STM03	0.17	✓			✓
STM04	0.17	✓	✓		✓
STM05	0.17	✓			✓
Stationary 10-min	0.83	0.83	0.34	0.17	0.83
Total Effort	29.65	29.65	24.32	23.29	29.65
Target Effort	-	15	20	20	15

✓ indicates the species or species grouping was considered a target of the survey.

All surveys performed were considered to have the potential to detect squatter pigeon and raptors. A total of 24.32 hours and 23.29 hours were spent surveying for Australian painted snipe/wetland birds and shorebirds respectively. Completed survey effort was above planned survey effort across all species and or species groupings.

2.2.4 Survey limitations

By performing the survey in the month of April there is a strong probability that summer migrant species, in particular the curlew sandpiper, would have not been detected as they have likely begun migrating to breeding grounds. Ideally surveys would be conducted over a year to provide the opportunity to detect the full suite of species currently utilising Atkinsons Dam.

2.3 Habitat assessment

As discussed in Section 2.2.4, a survey for birds performed at this time of year likely means some threatened and or migratory species were not detected. Therefore, habitat assessment and analysis of records was performed to provide an indication of the likelihood of threatened and or migratory species utilisation of Atkinson's Dam.

Threatened and or migratory species listed under the EPBC Act, and detected in the WildNet Searches as present within 1 km of the site, were assigned to one of the following categories, based upon the analysis of records, habitats and species utilisation of habitats:

- Known to Occur: species that were recorded during the survey.
- Potential to Occur: species that has been recorded in proximity to the project area (as listed on Wildlife Online searches), and which have potential habitat features available on the site, which may support the species.
- Unlikely to Occur: species for which the project area offers limited or no potential habitat or is outside of its known usual range (i.e. vagrant) and or is without broader habitat requirements.

3 Results

This section presents the observations made during the field survey and analysis of data collected.

3.1 Desktop searches

The WildNet desktop search (Appendix B-1) showed the following bird species listed under the EPBC Act as being recorded within one kilometre of Atkinson Dam:

- Twenty-one bird species listed as migratory.
- Five bird species listed as threatened:
 - Curlew sandpiper (*Calidris ferruginea*) – Critically Endangered (Figure 3-1).
 - Squatter pigeon (southern subspecies) (*Geophaps scripta* subsp. *scripta*) – Vulnerable (Figure 3-2).
 - Swift parrot (*Lathamus discolor*) – Critically Endangered.
 - Western Alaskan bar-tailed godwit (*Limosa lapponica* subsp. *baueri*) – Vulnerable (Figure 3-3).
 - Australian painted snipe (*Rostratula australis*) – Endangered (Figure 3-4).



Figure 3-1 Curlew sandpiper (Image: Ralf Regeer)



Figure 3-2 Squatter pigeon (Image: Ralf Regeer)



Figure 3-3 Western Alaskan bar-tailed godwit (Image: Rohan Etherington)



Figure 3-4 Australian painted snipe (Image: Birdlife Australia)

3.2 Habitat description

The current water level of Atkinson Dam is very low compared to the mapped high-water mark (Appendix A-2). There are two main bodies of water close to the dam wall covering an area of 77 ha and 23 ha, respectively, with one small dam close to the main pond and several small lagoons in the upper reaches of the dam limits (Appendix A-2). The main pond was the focal point of the survey effort as it was well vegetated by a 10 to 20 m band of the wetland plant *Persicaria orientalis* (Prince's feather) close to the edge of the water for most of its perimeter providing protection for shorebirds, Australian painted snipe, wetland birds and waterfowl to forage in the very shallow, muddy edges of the dam (Figure 3-5).



Figure 3-5 *Persicaria orientalis* (Prince's feather) growing along the eastern, western and northern edges of the main pond



Figure 3-6 Bare, heavily grazed edges of the southern edge of the main pond

Where the dam edge was not vegetated, grazing (cattle and horses) and or slashing had taken place recently (Figure 3-6). The secondary pond and small dam were heavily grazed to the water line and mainly provided habitat for larger shore/wetland birds and waterfowl (Figure 3-7).



Figure 3-7 Heavily grazed edges of the secondary pond



Figure 3-8 Small, shallow lagoons lined with *Juncus usitatus* (common rush) in the upper reaches of the Atkinson Dam

Two networks of small, shallow lagoons were in the upper reaches of the Atkinson Dam area providing potential foraging habitat for Australian painted snipe and water for squatter pigeon (Figure 3-8). Higher, drier areas between the dam edge and the upper limit of the dam was dominated by exotic pasture grasses (Figure 3-9).



Figure 3-9 Exotic pasture grasses on drier slopes within the dam limit



Figure 3-10 Eucalypt dominated woodland-open forest above the upper limit of the dam

Above the upper limit of the dam some areas of eucalypt dominated woodland-open forest existed (Figure 3-10).

It should be noted that no on-water recreational activities were occurring on Atkinson Dam due to low water levels. However, motorised gliders were operating as low as 10 m above the ground most mornings often causing the birds to flush.

3.3 Survey results

This section presents the results as a summary of species detected during the survey and likelihood of occurrence assessments for conservation significant species.

3.3.1 Summary

A total of 83 native bird species were recorded across 33 families and 11 orders (Figure 3-11; Appendix D).

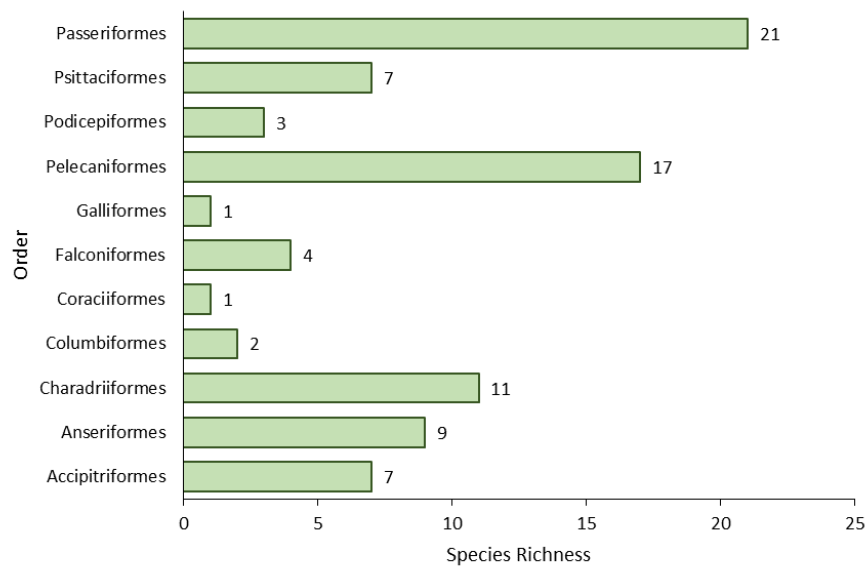


Figure 3-11 Native bird species richness by order

One non-native bird species, greylag goose [domestic type] (*Anser anser*), was observed during the survey on the secondary pond. Appendix D provides a complete species list for the survey. Appendix E presents the survey data collected.

The orders Anseriformes (waterfowl), Charadriiformes (shorebirds), Pelecaniformes (pelicans, ibis, herons and cormorants) and Podicepiformes (grebes), which forage and breed in wetland ecosystems, contributed almost 50% of the species richness. Black-winged (pied) stilt (*Himantopus himantopus*; Figure 3-12) and red-necked avocet (*Recurvirostra novaehollandiae*; Figure 3-13) were common during the survey and sighted daily.



Figure 3-12 Black-winged (pied) stilt



Figure 3-13 Flock of red-necked avocet in flight

Grey teal (*Anas gracilis*; Figure 3-14) were the most abundant waterfowl during the survey often in flocks of 150 to 200 individuals. The Australasian shoveler (*Anas rhynchos*; Figure 3-15) was also a common waterfowl that was sighted daily during the survey.



R. Etherington
Figure 3-14 Grey teal inflight



R. Etherington
Figure 3-15 Male (right) and female (left) Australasian shoveler

Of note was the presence of at least 11 freckled duck (*Stictonetta naevosa*). Although not considered threatened at a federal level, the species is not common in Queensland and is considered threatened in other states.

A single female (differentiated from the male by a yellow eye) black-necked stork (*Ephippiorhynchus asiaticus*; Figure 3-16) was sighted on three separate days, in contrast yellow-billed spoonbill (*Platalea flavipes*; Figure 3-17) were sighted daily.



R. Etherington
Figure 3-16 Female black-necked stork



R. Etherington
Figure 3-17 Yellow-billed spoonbill

Eleven species of raptors of the orders Accipitriformes (hawks and eagles) and Falconiformes (falcons) were detected hawking over the dam and adjacent paddocks during the survey. Two whistling kites (*Haliastur sphenurus*; Figure 3-18) were observed daily either hawking or perching on the edge of the dam.



R. Etherington
Figure 3-18 Whistling kite



R. Etherington
Figure 3-19 White-bellied sea-eagle (immature)

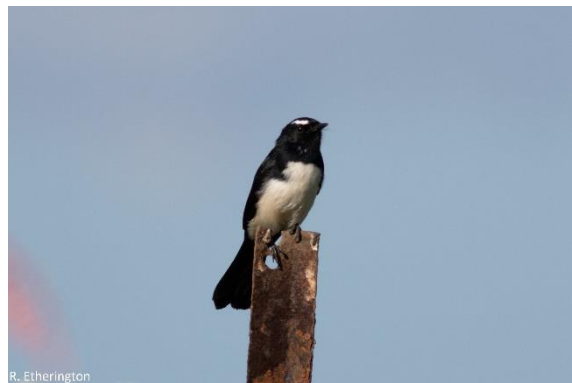
Three (one adult and two immature) white-bellied sea-eagles (*Haliaeetus leucogaster*; Figure 3-19) were also observed daily soaring over the dam causing wetland and shorebirds to flush.

Psittaciformes (cockatoos and parrots), Columbiformes (pigeons and doves) and laughing kookaburra (*Dacelo novaeguineae*) were often heard during surveys utilising eucalypt dominated vegetation well above the dam but not utilising the dam itself.

A majority of the 21 Passeriformes (songbird) species were small birds, such as plum-headed finch (*Neochmia modesta*) and golden-headed cisticola (*Cisticola exilis*), utilising the long grass and Prince's feather adjacent to the dam. Some species, such as: magpie-lark (*Grallina cyanoleuca*; Figure 3-20) and willie wagtail (*Rhipidura leucophrys* subsp. *leucophrys*; Figure 3-21) were observed foraging on the drying mud at the margins of the dam.



R. Etherington
Figure 3-20 Male magpie-lark



R. Etherington
Figure 3-21 Willie wagtail

Mixed flocks of up to 1,000: welcome swallow (*Hirundo neoxena*), fairy martin (*Petrochelidon ariel*; Figure 3-22) and tree martin (*Petrochelidon nigricans*; Figure 3-23) were observed hawking for insects daily over the margins of the dam .



R. Etherington
Figure 3-22 Fairy martin (left) and welcome swallow (right)



R. Etherington
Figure 3-23 Tree martin

3.3.2 Conservation significant species

No bird species listed as threatened under the EPBC Act were detected during the survey.

However, six species listed as migratory under the EPBC Act were detected. These species were:

- Caspian tern (*Hydroprogne caspia*)
- gull-billed tern (*Gelochelidon nilotica*)
- black-tailed godwit (*Limosa limosa*; Figure 3-24)
- Latham's snipe (*Gallinago hardwickii*)
- sharp-tailed sandpiper (*Calidris acuminata*; Figure 3-25)
- glossy ibis (*Plegadis falcinellus*; Figure 3-26)



R. Etherington
Figure 3-24 Black-tailed godwit entering breeding plumage



R. Etherington
Figure 3-25 Sharp-tailed sandpiper



R. Etherington
Figure 3-26 Glossy ibis

In addition to the six species listed above, a further nine species listed as migratory under the EPBC Act have the potential to occur at Atkinson Dam based upon available habitat and records (Table 3-1).

Although not detected during this survey, curlew sandpiper and Australian painted snipe are both considered to potentially occur at Atkinson Dam based on existing records and available habitat (Table 3-1).

It is considered unlikely that the squatter pigeon would be present considering the last confirmed record at the site being 35 years ago (Table 3-1).

The Western Alaskan bar-tailed godwit is considered unlikely to occur given their preference for sandy substrates to forage in, which is unavailable at Atkinson Dam (Table 3-1).

Table 3-1 Likelihood of presence analysis of threatened and or migratory species based upon records, preferred habitat and observed habitat

Scientific Name	Common Name	NC Act	EPBC Act	Preferred Habitat	Likelihood of Presence
Accipitriformes					
Accipitridae (eagles and hawks)					
<i>Pandion cristatus</i>	eastern osprey	SL	Migratory	Shallow fresh, brackish or marine waters with availability of fish close to the surface (Poole et al, 2019).	Potential to occur. Dam is shallow with fish present close to the surface.
Charadriiformes					
Charadriidae (plovers, dottrel and lapwings)					
<i>Charadrius bicinctus</i>	double-banded plover	SL	Migratory	Resident of New Zealand. Winters in Australia. Prefers coastal and freshwater wetlands. Rarely found inland (Wiersma, Kirwan and Boesman, 2019).	Unlikely to occur. Typically prefers the coast.
<i>Charadrius veredus</i>	oriental plover	SL	Migratory	Summer migrant to Northern Australia, rare in south. Prefers dry grasslands, clay-pans, muddy margins of wetlands and other open areas often away from standing water (Wiersma and Kirwan, 2019a).	Unlikely to occur. Species is a rare vagrant to the area.
<i>Pluvialis fulva</i>	Pacific golden plover	SL	Migratory	Common summer migrant. Found in coastal mudflats, saltmarshes, beaches, and areas of short grass (Wiersma and Kirwan, 2019b).	Potential to occur. Although prefers coastal areas known to utilise inland dams. Last confirmed sighting at the dam in 2018 (Tranter and Murray, 2018).

Scientific Name	Common Name	NC Act	EPBC Act	Preferred Habitat	Likelihood of Presence
Glareolidae (pratincoles and coursers)					
<i>Glareola maldivarum</i>	oriental pratincole	SL	Migratory	Migrant to north-western Australia. Found on grassy plains, clay-pans, mudflats and pastures (Maclean and Kirwan, 2019).	Unlikely to occur. Rare vagrant to the area.
Laridae (gulls and terns)					
<i>Chlidonias leucopterus</i>	white-winged black tern	SL	Migratory	Summer migrant. Inland lakes and rocky coasts (Gochfeld et al., 2019).	Potential to occur. Regular migrant to South-east Queensland and dam provides suitable habitat.
<i>Gelochelidon nilotica</i>	gull-billed tern	SL	Migratory	Resident. Coastal and inland species that utilises a variety of wetland ecosystems, dams and lakes (Morcombe, 2010).	Known to occur. Sighted during survey.
<i>Hydroprogne caspia</i>	Caspian tern	SL	Migratory	Resident. Coastal areas, large inland lakes and dams (Gochfeld, Burger and Garcia, 2019).	Known to occur. Sighted during survey.
Rostratulidae (painted-snipes)					
<i>Rostratula australis</i>	Australian painted snipe	V	E	Shallow freshwater and brackish wetlands, inundated grasslands and dams (del Hoyo, Collar and Kirwan, 2019).	Potential to occur. Dam currently shallow providing ample foraging habitat. Approximately three quarters of the dam well vegetated to the water's edge providing shelter. Last recorded confirmed sighting in 2012 (Walker and Wiley, 2012).

Scientific Name	Common Name	NC Act	EPBC Act	Preferred Habitat	Likelihood of Presence
Scolopacidae (Snipe, Sandpipers, Godwits, Curlew, Stints and Phalaropes)					
<i>Actitis hypoleucos</i>	common sandpiper	SL	Migratory	Uncommon summer migrant. Coastal shores, estuaries, saltmarshes, inland wetlands, dams and tidal creeks. Does not prefer large coastal mudflats (Van Gils, Wiersma and Kirwan, 2019a).	Unlikely to occur. Rare inland. Prefers coastal areas.
<i>Arenaria interpres</i>	ruddy turnstone	SL	Migratory	Summer migrant. Primarily coastal: shores, estuaries, saltmarshes potentially requires beds of mussels and cockles (Van Gils, Wiersma and Kirwan, 2019b)	Unlikely to occur. Rarely strays from coast. Dam does not provide preferred feeding grounds of mussels and cockles on rocks.
<i>Calidris acuminata</i>	sharp-tailed sandpiper	SL	Migratory	Summer migrant. Wide variety of shallow coastal and inland wetlands (Van Gils, Wiersma and Kirwan, 2019c.)	Known to occur. Sighted during survey.
<i>Calidris ferruginea</i>	curlew sandpiper	E	CE, Migratory	Summer migrant. Primarily coastal wetlands, sandy or intertidal flats, lagoons, and saltmarshes (Van Gils et al., 2019a).	Potential to occur. Known to frequent the area and dam provides appropriate foraging habitat.
<i>Calidris melanotos</i>	pectoral sandpiper	SL	Migratory	Summer migrant. Variety of coastal and inland wetlands (Van Gils et al., 2019b).	Potential to occur. Known to frequent the area and dam provides appropriate foraging habitat. Last confirmed sighting (Tranter, 2017).

Scientific Name	Common Name	NC Act	EPBC Act	Preferred Habitat	Likelihood of Presence
<i>Calidris ruficollis</i>	red-necked stint	SL	Migratory	Summer migrant. Primarily coastal intertidal mudflats, inlets and bays (Van Gils et al., 2019c).	Potential to occur. Known to frequent the area and dam provides appropriate foraging habitat.
<i>Gallinago hardwickii</i>	Latham's snipe	SL	Migratory	Summer migrant. Inland and coastal permanent or ephemeral freshwater wetlands (Van Gils, Wiersma and Kirwan, 2019d).	Known to occur. Sighted during survey.
<i>Limicola falcinellus</i>	broad-billed sandpiper	SL	Migratory	Uncommon summer migrant. Primarily coastal brackish or marine mudflats (Van Gils, Wiersma and Kirwan, 2019e).	Unlikely to occur. Migrates in low numbers. Prefers intertidal mudflats on coastal areas.
<i>Limosa lapponica</i> subsp. <i>baueri</i>	Western Alaskan bar-tailed godwit	V	V, Migratory	Summer migrant to eastern Australia. Prefers sandy intertidal areas in estuaries, inlets and sheltered bays (Van Gils et al., 2019d).	Unlikely to occur. Dam does not support preferred habitat of sandy intertidal areas.
<i>Limosa limosa</i>	black-tailed godwit	SL	Migratory	Summer migrant. Sheltered estuaries, beaches, salt marshes and inland wetlands (Van Gils et al., 2019e).	Known to occur. Sighted during survey.
<i>Numenius minutus</i>	little curlew	SL	Migratory	Summer migrant. Dry inland grasslands, cultivated paddocks, artificial grasslands always in proximity to water bodies (Van Gils, Wiersma and Kirwan, 2019f).	Potential to occur. Although generally uncommon. Atkinson Dam provides habitat for this species.

Scientific Name	Common Name	NC Act	EPBC Act	Preferred Habitat	Likelihood of Presence
<i>Tringa nebularia</i>	common greenshank	SL	Migratory	Summer migrant. Variety of coastal and inland freshwater and marine wetlands (Van Gils, Wiersma and Kirwan, 2019g).	Potential to occur. Known to frequent the area and dam provides appropriate foraging habitat. Last confirmed sighting in Jan 2019 (Bands, 2019).
<i>Tringa stagnatilis</i>	marsh sandpiper	SL	Migratory	Summer migrant. Margins of coastal and inland freshwater and brackish wetlands (Van Gils, Wiersma and Kirwan, 2019h).	Potential to occur. Known to frequent the area and dam provides appropriate foraging habitat.
Columbiformes					
Columbidae (pigeons and doves)					
<i>Geophaps scripta</i> subsp. <i>scripta</i>	squatter pigeon (southern subspecies)	V	V	Resident. Eucalypt woodlands and adjacent savanna often in close proximity to permanent water (Baptista, Trail and Horblit, 2019).	Unlikely to occur. Confirmed records of the species at Atkinson Dam have not occurred since 1984 (Appendix B-1). The most recent confirmed record in the local area was at Mount Hallen in 2001 approx 11 km north west of Atkinson Dam (WildNet Sighting #4003786)
Pelecaniformes					
Threskiornithidae (ibis and spoonbill)					
<i>Plegadis falcinellus</i>	glossy ibis	SL	Migratory	Resident. Shallow lakes and dams, lagoons and floodplains (Matheu et al., 2019).	Known to occur. Sighted during survey.

NC Act Status: SL – Special Least Concern, NT – Near Threatened, V – Vulnerable, E – Endangered. EPBC Act Status: V – Vulnerable, E – Endangered, CE – Critically Endangered.

4 Discussion

The purpose of this survey was to detect, or identify the likelihood of occurrence, of bird species protected under the Commonwealth EPBC Act Atkinson Dam, and determine the potential impact upon these species of a complete drawn down of the remaining water. This section discusses the legislative context of the survey findings and whether the proposed action poses a 'significant impact' upon these species protected under the EPBC Act.

4.1 Legislative context

This survey detected six species listed as migratory currently utilising Atkinson Dam with a further nine species listed as migratory with the potential to utilise the habitat at the dam. Chapter 2, Part 3, Division 1, Subdivision D, Section 20 of the EPBC Act states the following:

(1) A person must not take an action that:

(a) has or will have a significant impact on a listed migratory species; or

(b) is likely to have a significant impact on a listed migratory species.

Although not observed during the survey, the Critically Endangered curlew sandpiper and the Endangered Australian painted snipe are both consider to potentially occur at Atkinson Dam. Chapter 2, Part 3, Division 1, Subdivision D, Section 18 of the EPBC Act states that:

(2) A person must not take an action that:

(a) has or will have a significant impact on a listed threatened species included in the critically endangered category; or

(b) is likely to have a significant impact on a listed threatened species included in the critically endangered category.

(3) A person must not take an action that:

(a) has or will have a significant impact on a listed threatened species included in the endangered category; or

(b) is likely to have a significant impact on a listed threatened species included in the endangered category.

Therefore, the remainder of this section will discuss whether the proposed action would have a significant impact on any of the migratory and or threatened species protected under the EPBC Act and identified as occurring or potentially occurring at Atkinson Dam.

4.2 Determination of significant impact

The *Matters of National Environmental Significance (MNES) Significant impact guidelines 1.1* (Commonwealth of Australia, 2013) deals with Critically Endangered and Endangered species together but separately to Migratory species.

4.2.1 Critically endangered/Endangered species

Table 4-1 addresses the significant impact criteria for Critically Endangered/Endangered species with the potential to occur at Lake Atkinson.

Table 4-1 Significant impact criteria assessment for Critically Endangered/Endangered bird species with potential occurrence at Atkinson Dam

Significant Impact Criteria	Curlew sandpiper	Australian painted snipe
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
- lead to a long-term decrease in the size of a population	<p>Unlikely. Given the lack of recent records for the site and that suitable habitat at Wivenhoe Dam and Lake Clarendon nearby it is unlikely that the proposed action would cause a long-term decrease in population size. Furthermore, the proposed action will be temporary in nature.</p>	<p>Unlikely. The proposed action may cause temporary complete drawdown on the dam. This may disrupt breeding and foraging at different stages of the year. However, given available suitable habitat present in the area it is unlikely that the proposed action would cause a long-term decrease in population size.</p>
- reduce the area of occupancy of the species	<p>Unlikely. An infrequent migrant to the area, Atkinson Dam located on the margin of the species distribution and therefore the area of occupancy is unlikely to be reduced.</p>	<p>Unlikely. Atkinson Dam is within a wider network of suitable habitat and therefore the area of occupancy is unlikely to be reduced.</p>
- fragment an existing population into two or more populations	<p>Unlikely. The proposed action would not provide a barrier between populations considering they are a summer migratory species.</p>	<p>Unlikely. This species is considered nomadic and potentially moves large distances (del Hoyo, Collar and Kirwan, 2019). Therefore, it is unlikely the proposed action would fragment a population.</p>

Significant Impact Criteria	Curlew sandpiper	Australian painted snipe
<ul style="list-style-type: none"> - adversely affect habitat critical to the survival of a species 	<p>Unlikely. Species has not been recorded utilising the site recently and Atkinson Dam is on the margin of their distribution.</p>	<p>Possible. Atkinson Dam provides suitable habitat for the species to forage and breed. The diversion and drainage of wetlands for agriculture is listed as the main threat to this species (DWEWPaC, 2013). Atkinson Dam is one of few important waterbodies in the lower Lockyer area for waterfowl and waders (Queensland Wader Study Group, 2010; Appendix A-1). Therefore, Atkinson Dam can be considered critical habitat for the species, particularly given the current drought declaration for the area (State of Queensland, 2019). As such, a complete draw down on water would likely adversely affect habitat critical to the survival of the species.</p>

Significant Impact Criteria	Curlew sandpiper	Australian painted snipe
<ul style="list-style-type: none"> - disrupt the breeding cycle of a population 	<p>Unlikely. Species is a non-breeding migrant to Australia. Therefore, should not impact the breeding cycle of the species.</p>	<p>Possible. Breeding has been recorded in all months but mainly during September to December in the region (del Hoyo, Collar and Kirwan, 2019). A full draw down on water at Atkinson Dam would likely prevent breeding from taking place there, causing the animals to move elsewhere to suitable breeding habitat which may or may not be available in the immediate vicinity. The total population is estimated to be 600 to 1,700 breeding individuals (del Hoyo, Collar and Kirwan, 2019). Given that the species is known to loosely colonially breed and estimated to have a small total population (600 to 1,700 individuals) remaining in the wild (del Hoyo, Collar and Kirwan, 2019) a breeding colony of this species could constitute as little as 5 to 10 individuals. The species has been recorded as breeding at Lake Dyer approx. 30 km south (Queensland Wader Study Group, 2010). Therefore, it is possible the species could also breed at Atkinson Dam given the available habitat.</p>
<ul style="list-style-type: none"> - modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline 	<p>Unlikely. The species has the capability to move to suitable habitat. Given that the site is not as preferred as intertidal wetlands for this species, it would be expected that only small numbers of the species would potentially use the site. Therefore, it is unlikely that the temporary removal of the species habitat by the proposed action would cause the species to decline further.</p>	<p>Possible. As shown on Appendix A-1 Atkinson Dam is a significant water body in the region. The species has been recorded at the site in the past, most recently as 2012 (Walker and Wiley, 2012). If individuals arrive at the site to find it is dry and unsuitable for foraging and breeding it will need to expend vital energy locating a new suitable foraging and or breeding site. This may cause mortality and aborted breeding event, potentially leading to a reduction in the population at a local level.</p>

Significant Impact Criteria	Curlew sandpiper	Australian painted snipe
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Unlikely. The proposed action would likely not alter the abundance of invasive predators (such as dogs, cats and foxes).	Unlikely. The proposed action would likely not alter the abundance of invasive predators (such as dogs, cats and foxes).
- introduce disease that may cause the species to decline, or	Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.	Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.
- interfere with the recovery of the species.	Unlikely. Given the site is not a nationally important wetland for shorebirds (Environment Australia, 2001), it is unlikely that the proposed action will interfere with the recovery of the species at a national scale.	Unlikely. Given the site is not a nationally important wetland for shorebirds (Environment Australia, 2001), it is unlikely that the proposed action will interfere with the recovery of the species at a national scale.

It is unlikely that the Critically Endangered curlew sandpiper would be significantly impacted by the proposed action at Atkinson Dam given it would occur in low numbers and is a non-breeding migrant (Table 4-1).

It is possible that a complete drawdown on the water at Atkinson Dam would have a significant impact upon the Australian painted snipe, if present. For more detail on these impacts see Table 4-1 above. Given the general lack of knowledge about the species' ecology, the amount of habitat provided by Atkinson Dam at a local level, the species being recorded breeding in the area and the species is known to utilise the site, the proposed action should be referred to the Commonwealth Department of Environment as a precautionary measure.

4.2.2 Migratory species

Table 4-2 addresses the significant impact criteria for migratory shorebird species with the potential to occur at Lake Atkinson.

Table 4-2 Significant impact criteria assessment for migratory species in the order Charadriiformes (Shorebirds) with known or potential occurrence at Atkinson Dam

Significant Impact Criteria	Charadriidae (plovers, dottrel and lapwings)	Laridae (gulls and terns)	Scolopacidae (Snipe, Sandpipers, Godwits, Curlew, Stints and Phalaropes)
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:			
- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	<p>Unlikely. Atkinson Dam is not considered important habitat for the species. Mainly because it would be unlikely to support an ecologically significant proportion of the population which is estimated to be approximately 9,000 individuals during winter (Wiersma and Kirwan, 2019).</p>	<p>Unlikely. Atkinson Dam is not considered important habitat for the species. Mainly because it would be unlikely to support an ecologically significant proportion of their respective populations. White-winged black tern: Global population of approx. 2.5 to 4.5 million (Gochfeld et al., 2019). Caspian tern: Australian population of approx. 100,000 (Gochfeld, Burger and Garcia, 2019). Gull-billed tern: Australian population of 25,000 to 100,000 birds (del Hoyo et al. 2019).</p>	<p>Unlikely. Atkinson Dam is not considered important habitat for these species. Mainly because it would be unlikely to support an ecologically significant proportion of their respective populations. Population data:</p> <ul style="list-style-type: none"> - sharp-tailed sandpiper: Most of the 166,000 global population winters in Australia (Van Gils, Wiersma and Kirwan, 2019c). - curlew sandpiper: approx. 188,000 migrate to Australia (Van Gils et al., 2019a). - pectoral sandpiper: c. 25,000 to 100,000 globally, Australian migrant population unknown but considered uncommon (Van Gils et al., 2019b). - red-necked stint: approx. 270,000 migrate to Australia (Van Gils et al., 2019c). - Latham's snipe: global population of c. 36,000 most of which migrate to Australia (Van Gils, Wiersma and Kirwan, 2019d).

Significant Impact Criteria	Charadriidae (plovers, dottrel and lapwings)	Laridae (gulls and terns)	Scolopacidae (Snipe, Sandpipers, Godwits, Curlew, Stints and Phalaropes)
			<ul style="list-style-type: none"> - black-tailed godwit: approx. 81,000 individuals migrate to Australia (Van Gils et al., 2019d). - little curlew: Global estimate of 180,000 to 200,000 mostly migrates to Northern Australia (Van Gils, Wiersma and Kirwan, 2019f). - common greenshank: approximately 20,000 migrate to Australasia (Van Gils, Wiersma and Kirwan, 2019g). - marsh sandpiper: approx. 9,000 birds migrate to Australia (Van Gils, Wiersma and Kirwan, 2019h).
<ul style="list-style-type: none"> - result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or 	<p>Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.</p>	<p>Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.</p>	<p>Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.</p>
<ul style="list-style-type: none"> - seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species. 	<p>Unlikely. It is unlikely Atkinson Dam would support an ecologically significant proportion of the population which is estimated to be approximately 9,000 individuals during winter (Wiersma and Kirwan, 2019).</p>	<p>Unlikely. White-winged black tern: Atkinson Dam unlikely to support an ecologically significant proportion of the global population of approx.. 2.5 to 4.5 million (Gochfeld et al., 2019). Caspian tern: Atkinson Dam is unlikely to support an ecologically significant proportion of the Australian population</p>	<p>Unlikely. It is unlikely Atkinson Dam would support an ecological significant proportion of any other these species based upon global population estimates.</p>

Significant Impact Criteria	Charadriidae (plovers, dottrel and lapwings)	Laridae (gulls and terns)	Scolopacidae (Snipe, Sandpipers, Godwits, Curlew, Stints and Phalaropes)
		of approx. 100,000 (Gochfeld, Burger and Garcia, 2019). Gull-billed tern: Atkinson Dam is unlikely to support an ecologically significant proportion of the Australian population 25,000 to 100,000 birds (del Hoyo et al. 2019).	

It is unlikely that the proposed action would result in a significant impact on any migratory shorebird species listed in Table 4-2. This is primarily due to the incapacity of Atkinson Dam to hold ecologically significant proportions of these shore bird populations.

It is unlikely that the proposed action at Atkinson Dam would result in a significant impact as the site does not a support breeding habitat and would not likely support an ecological significant proportion of the Australian population (Table 4-3).

Table 4-3 Significant impact criteria assessment for migratory bird species the Eastern osprey and glossy ibis at Atkinson Dam

Significant Impact Criteria	Eastern osprey	Glossy ibis
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:		
- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	Unlikely. Could potentially be utilised by this species for breeding and therefore an absence of its primary food source (surface feeding fish) which could affect breeding success. However, given the species is was not detected during the	Unlikely. Glossy ibis are unlikely to breed at Atkinson Dam as they prefer nesting in trees >1 m above water in colonies. Furthermore, the site is unlikely to support an ecological significant proportion of the Australian population.
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or	Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.	Unlikely. The proposed action does not involve the introduction of materials or biota and therefore it is unlikely that new diseases would be introduced.
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	Unlikely. It would be unlikely that the dam would support more than one pair of osprey and therefore would be unlikely to support an ecologically significant proportion of this species.	Unlikely. The total number of glossy ibis in Australia is estimated to be over 100,000 individuals (Matheu et al., 2019). Therefore, it is unlikely Atkinson Dam would support an ecological significant proportion of this population given that less than 10 birds were observed at any one time during the survey.

It is unlikely that the proposed action at Atkinson Dam would result in a significant impact as the site does not a support breeding habitat and would not likely support an ecologically significant proportion of the Australian population (Table 4-3).

5 Conclusion

The aim of this project was to locate, assess habitat suitability for and determine potential impact of a complete draw down of Atkinson Dam on birds protected under the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The field survey detected six species listed as migratory under the EPBC Act. A further nine species listed as migratory under the EPBC Act were determined to have the potential to occur at the site based upon analysis of habitat and records. It was determined that Atkinson Dam provides suitable habitat for the curlew sandpiper and Australian painted snipe, listed as Critically Endangered and Endangered respectively under the EPBC Act.

It is possible that the proposed action of completely drawing down the water remaining in Atkinson Dam could have a significant impact on the Endangered Australian painted snipe. This is primarily due to the proposed action having the potential to:

- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

As the Australian painted snipe is a Matter of National Environmental Significance (MNES) an approval may be required from the Commonwealth Department of Environment (DoE). This is facilitated by referring the proposed action to DoE for their assessment.

As part of the assessment process potential mitigation strategies to lessen and or avoid the impact on the MNES will be considered. As the suitable habitat for the Australian painted snipe is primarily the main pond, potential mitigation strategy is to only draw from the secondary pond. Alternatively, if drawing from the main pond, pump water from the secondary pond to the main pond to supplement the water being withdrawn.

6 References

- Bands, T. (2019). eBird Checklist: <https://ebird.org/australia/view/checklist/S51657566>. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org>. (Accessed:24/04/2019).
- del Hoyo, J., Collar, N. & Kirwan, G.M. (2019). Australian Painted-snipe (*Rostratula australis*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/467303> on 24 April 2019).
- del Hoyo, J., Collar, N., Kirwan, G.M. & Garcia, E.F.J. (2019). Australian Gull-billed Tern (*Gelochelidon macrotarsa*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/467314> on 26 April 2019).
- Environment Australia (2001). A Directory of Important Wetlands in Australia, Third Edition. Environment Australia, Canberra.
- Gochfeld, M., Burger, J. & Garcia, E.F.J. (2019). Caspian Tern (*Hydroprogne caspia*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/54013> on 24 April 2019).
- Gochfeld, M., Burger, J., Christie, D.A., Kirwan, G.M. & Garcia, E.F.J. (2019). White-winged Tern (*Chlidonias leucopterus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/54046> on 24 April 2019).
- Macleay, G.L. & Kirwan, G.M. (2019). Oriental Pratincole (*Glareola maldivarum*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53786> on 24 April 2019).
- Matheu, E., del Hoyo, J., Kirwan, G.M., Garcia, E.F.J. & Boesman, P. (2019). Glossy Ibis (*Plegadis falcinellus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/52775> on 24 April 2019).
- Poole, A.F., Kirwan, G.M., Christie, D.A. & Marks, J.S. (2019). Osprey (*Pandion haliaetus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/52947> on 24 April 2019).
- Queensland Wader Study Group. (2010). Lockyer Valley Site Information. <http://waders.org.au/watching-waders/offshore-and-inland-wader-sites/lockyer-valley/>. Accessed: 24/04/2019.
- Seqwater. (2016). Dams and Weirs: Atkinson Dam. Viewed: 15/04/2019. Link: <https://www.seqwater.com.au/water-supply/dam-operations/atkinson-dam>
- State of Queensland. (2018). Lower Lockyer Valley Water Supply Scheme Operations Manual, Department of Natural Resources, Mines and Energy.
- State of Queensland. (2019). Drought Declarations: Queensland Drought Situation Map as reviewed on 4 March 2019. Viewed: 15/04/2019. Link: <https://www.longpaddock.qld.gov.au/drought/drought-declarations/>
- Tranter, G. and Murray, S. (2018). eBird Checklist: <https://ebird.org/australia/view/checklist/S49636343>. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org>. (Accessed:24/04/2019).

- Tranter, G. (2017). eBird Checklist: <https://ebird.org/australia/view/checklist/S34971874>. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org>. (Accessed:24/04/2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019a). Common Sandpiper (*Actitis hypoleucos*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53912> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019b). Ruddy Turnstone (*Arenaria interpres*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53918> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019c). Sharp-tailed Sandpiper (*Calidris acuminata*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53934> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019d). Latham's Snipe (*Gallinago hardwickii*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53871> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019e). Broad-billed Sandpiper (*Calidris falcinellus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53940> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019f). Little Curlew (*Numenius minutus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53892> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019g). Common Greenshank (*Tringa nebularia*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53904> on 24 April 2019).
- Van Gils, J., Wiersma, P. & Kirwan, G.M. (2019h). Marsh Sandpiper (*Tringa stagnatilis*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53903> on 24 April 2019).
- Van Gils, J., Wiersma, P., Kirwan, G.M. & Sharpe, C.J. (2019a). Curlew Sandpiper (*Calidris ferruginea*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53935> on 24 April 2019).
- Van Gils, J., Wiersma, P., Christie, D.A. & Kirwan, G.M. (2019b). Pectoral Sandpiper (*Calidris melanotos*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53933> on 24 April 2019).
- Van Gils, J., Wiersma, P., Kirwan, G.M. & Sharpe, C.J. (2019c). Red-necked Stint (*Calidris ruficollis*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53926> on 24 April 2019).
- Van Gils, J., Wiersma, P., Sharpe, C.J. & Boesman, P. (2019d). Bar-tailed Godwit (*Limosa lapponica*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53890> on 24 April 2019).
- Van Gils, J., Wiersma, P., Christie, D.A., Garcia, E.F.J. & Boesman, P. (2019e). Black-tailed Godwit (*Limosa limosa*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53888> on 24 April 2019).

Walker, S. and Wiley, C. (2012) eBird Checklist: <https://ebird.org/view/checklist/S12364020>. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: <http://www.ebird.org>. (Accessed:24/04/2019).

Wiersma, P. & Kirwan, G.M. (2019a). Oriental Plover (*Charadrius veredus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53848> on 24 April 2019).

Wiersma, P. & Kirwan, G.M. (2019b). Pacific Golden Plover (*Pluvialis fulva*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53818> on 24 April 2019).

Wiersma, P., Kirwan, G.M. & Boesman, P. (2019). Double-banded Plover (*Charadrius bicinctus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. & de Juana, E. (eds.). Handbook of the Birds of the World Alive. Lynx Edicions, Barcelona. (retrieved from <https://www.hbw.com/node/53844> on 24 April 2019).

Appendix A - Mapping

430000

440000

450000

460000

470000

6980000

6970000

6960000

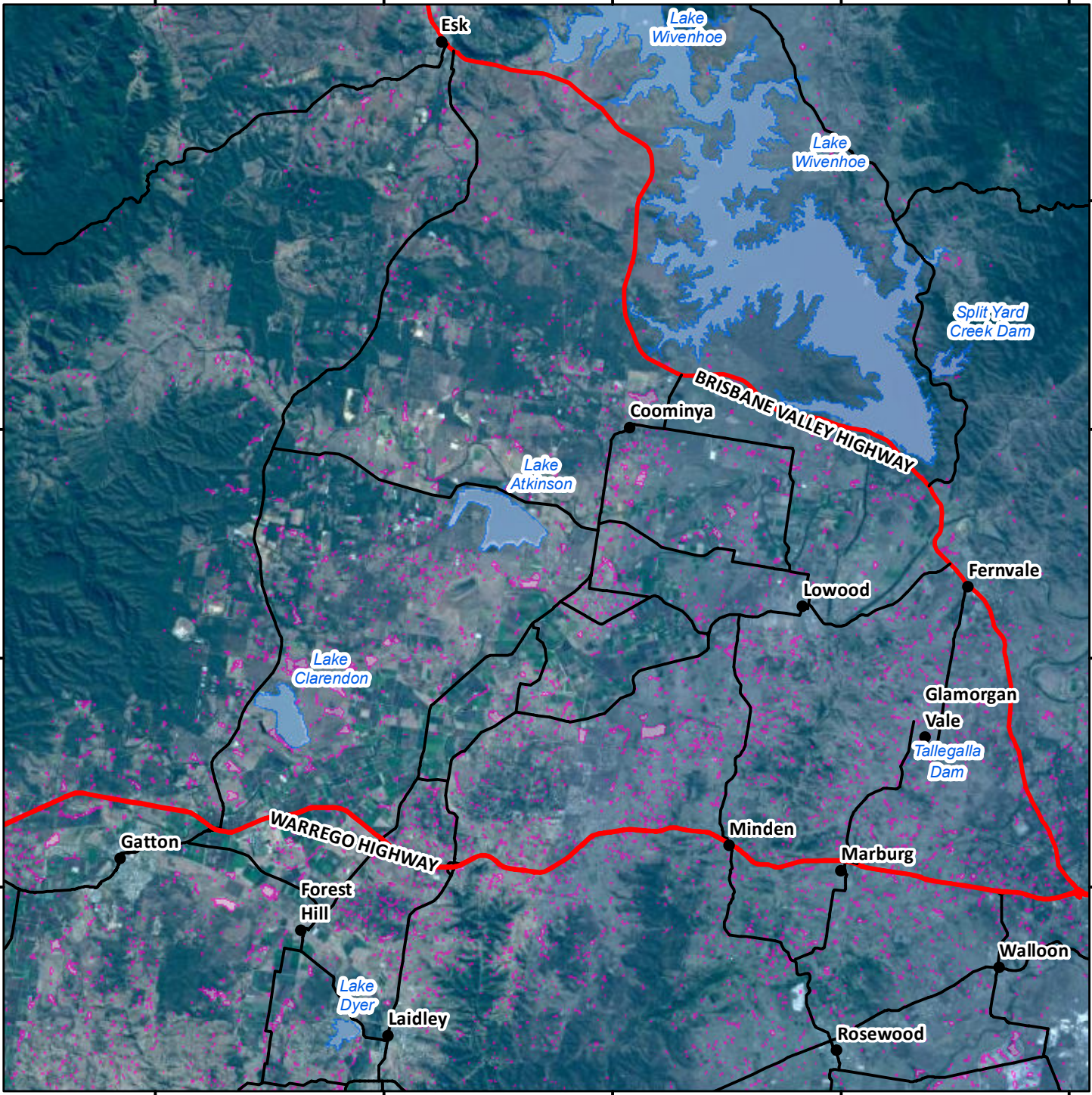
6950000

6980000

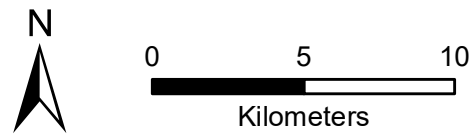
6970000

6960000

6950000



Appendix A-1:
Overview of waterbodies in the upper Lockyer and lower Somerset regions



Scale: 1:250,000
Coordinate System: GDA 1994 MGA Zone 56
Datum: GDA 1994

Legend

- Cities and Towns
- Highways
- Major Roads
- Flood Irrigation Storage
- Rural Water Storage
- Town Water Storage

Data sources:
Place Names © State of Queensland (Department of Natural Resources and Mines) 2015; Baseline Roads and Tracks © State of Queensland (Department of Natural Resources and Mines) 2016; Reservoirs © State of Queensland (Department of Natural Resources, Mines and Energy) 2019; Imagery © State of Queensland 2019.

Document History:

Rev	Reason for Issue	Author	Reviewer	Approver	Date
A	Internal Draft	RE	BJ		29/04/19
0	Issued for information	RE	BJ	BJ	29/04/19

Appendix A-2:

Distribution of surveys across Atkinson Dam licence area



0 0.75 1.5

Kilometers

Scale: 1:27,500

Coordinate System: GDA 1994 MGA Zone 56

Datum: GDA 1994

Legend

Survey Type

- Stationary 1-hr
- Stationary 10-min

--- Line Transects

Dam Extent 9/04/2019

Seqwater Licence Area

Flood Irrigation Storage

Rural Water Storage

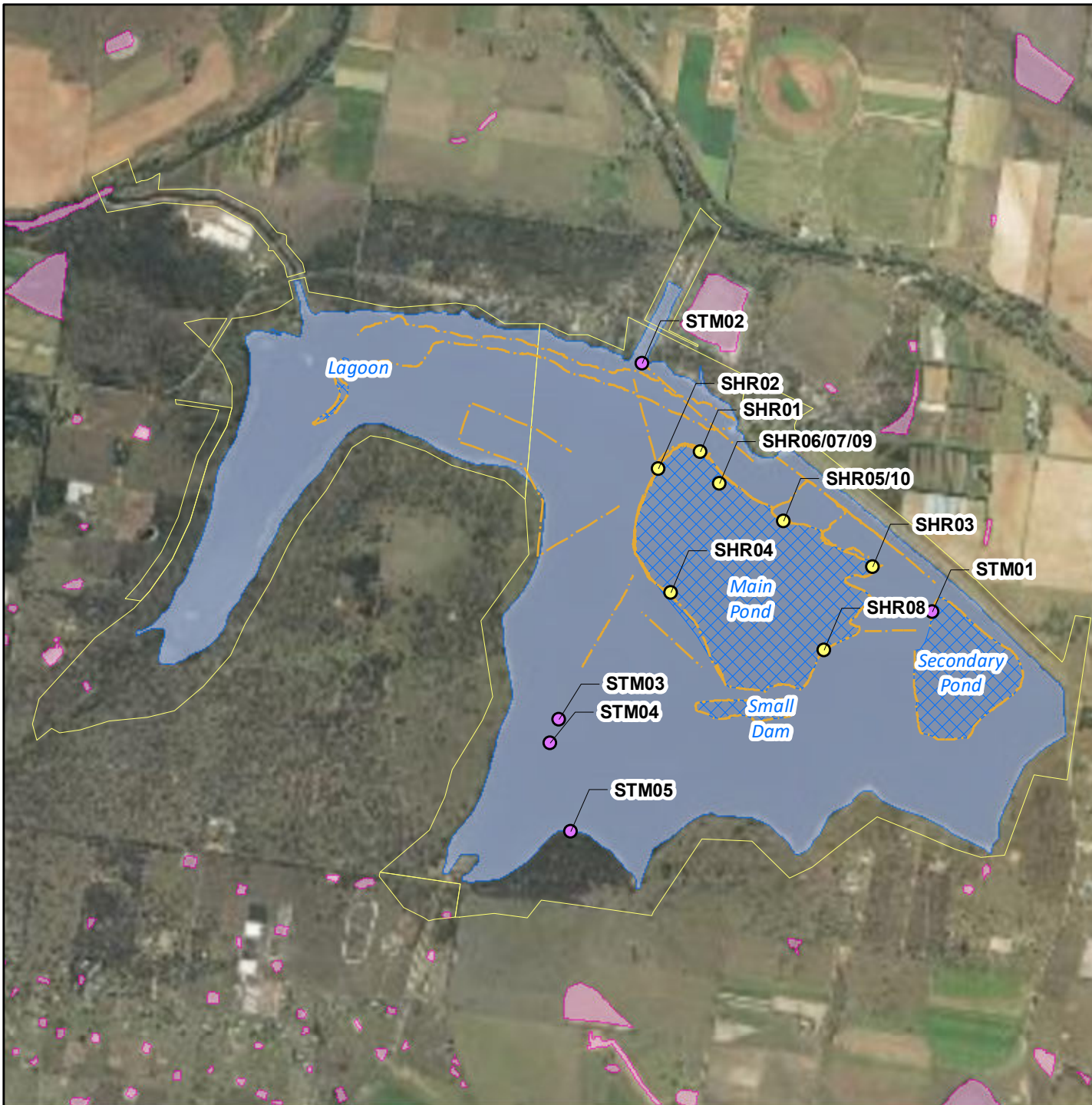
Town Water Storage

Data sources:

Place Names © State of Queensland (Department of Natural Resources and Mines) 2015; Baseline Roads and Tracks © State of Queensland (Department of Natural Resources and Mines) 2016; Reservoirs © State of Queensland (Department of Natural Resources, Mines and Energy) 2019; Imagery © State of Queensland 2019.

Document History:

Rev	Reason for Issue	Author	Reviewer	Approver	Date
A	Internal Draft	RE	BJ		29/04/19



Appendix B – Desktop searches



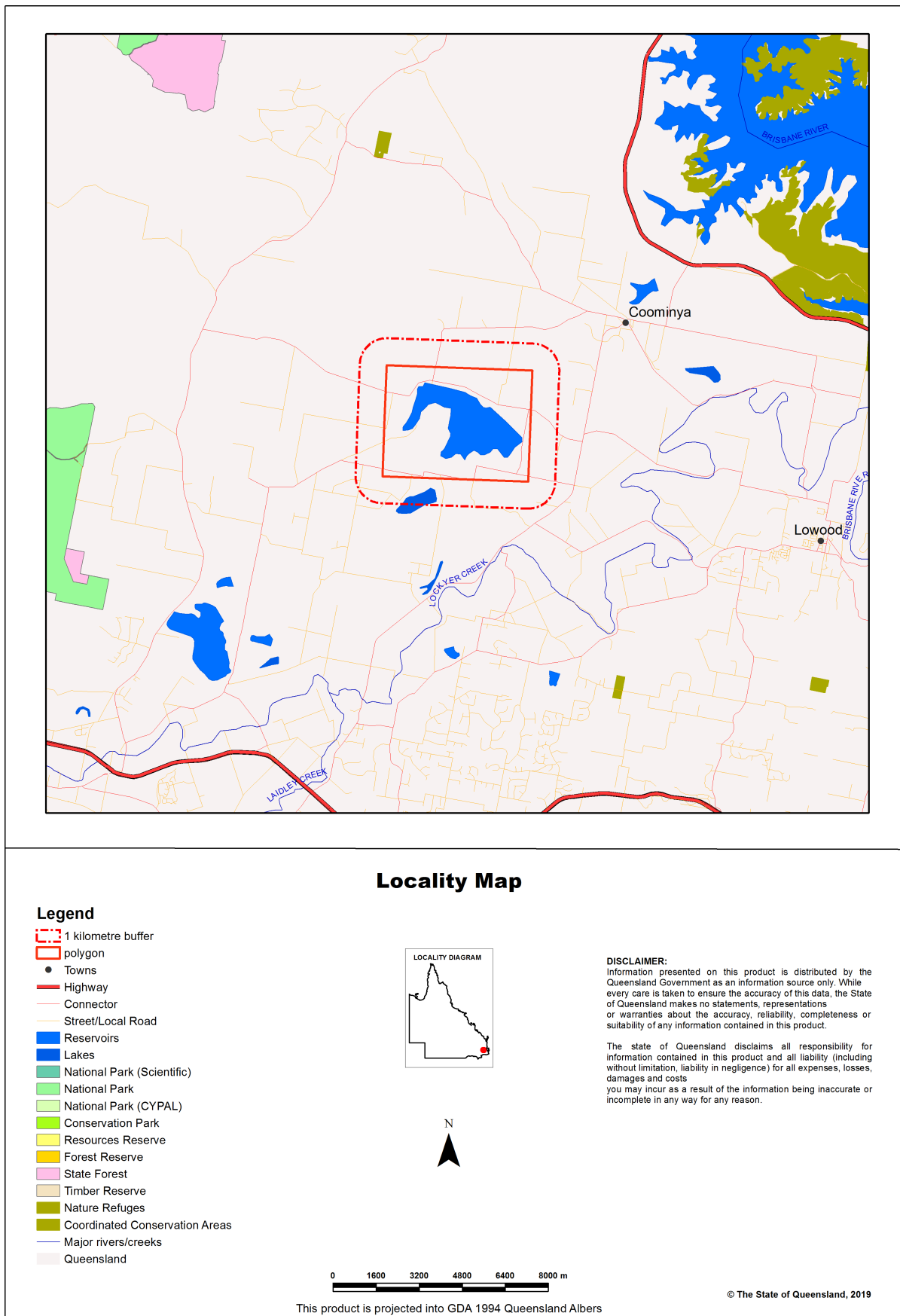
WildNet Records Conservation Significant Species List

For the selected area of interest 2241.79ha

Current as at 24/04/2019

AtkinsonDam

Map 1. Locality Map



Summary Information

The following table provides an overview of the area of interest .

Table 1. Area of interest details

Size (ha)	2,241.79
Local Government(s)	Somerset Regional, Lockyer Valley Regional
Bioregion(s)	Southeast Queensland
Subregion(s)	Moreton Basin
Catchment(s)	Brisbane

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Conservation Significant Species List

Introduction

This Conservation Significant Species List report is derived only from records from the WildNet database managed by the Department of Environment and Science. Other data sources may provide additional information on species occurrence.

Conservation significant species are species listed:

- as [threatened](#) or near threatened under the Nature Conservation Act 1992;
- as threatened under the [Environment Protection and Biodiversity Conservation Act 1999](#) or
- [migratory species](#) protected under the following international agreements:
 - o Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
 - o China-Australia Migratory Bird Agreement
 - o Japan-Australia Migratory Bird Agreement
 - o Republic of Korea-Australia Migratory Bird Agreement

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species does not occur in the report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area.

Table 2 lists the species recorded within the area of interest and its one kilometre buffer.

Table 2. Conservation significant species recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1885	Animalia	Aves	Scolopacidae	<i>Actitis hypoleucos</i>	common sandpiper	SL	None	0	2	21/09/1986
1872	Animalia	Aves	Scolopacidae	<i>Arenaria interpres</i>	ruddy turnstone	SL	None	0	1	31/01/2002
1874	Animalia	Aves	Scolopacidae	<i>Calidris acuminata</i>	sharp-tailed sandpiper	SL	None	0	31	20/11/2004
1878	Animalia	Aves	Scolopacidae	<i>Calidris ferruginea</i>	curlew sandpiper	E	CE	0	10	21/09/2003
1879	Animalia	Aves	Scolopacidae	<i>Calidris melanotos</i>	pectoral sandpiper	SL	None	0	6	01/03/2003

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1880	Animalia	Aves	Scolopacidae	<i>Calidris ruficollis</i>	red-necked stint	SL	None	0	8	20/11/2004
1946	Animalia	Aves	Charadriidae	<i>Charadrius bicinctus</i>	double-banded plover	SL	None	0	4	04/07/2009
1939	Animalia	Aves	Charadriidae	<i>Charadrius veredus</i>	oriental plover	SL	None	0	3	31/01/2002
1920	Animalia	Aves	Laridae	<i>Chlidonias leucopterus</i>	white-winged black tern	SL	None	0	10	03/12/2008
19177	Animalia	Insecta	Nymphalidae	<i>Danaus plexippus</i>	monarch	None	None	0	1	19/07/2018
1705	Animalia	Aves	Falconidae	<i>Falco hypoleucos</i>	grey falcon	V	None	0	1	31/01/2002
1857	Animalia	Aves	Scolopacidae	<i>Gallinago hardwickii</i>	Latham's snipe	SL	None	0	20	20/11/2004
1886	Animalia	Aves	Laridae	<i>Gelochelidon nilotica</i>	gull-billed tern	SL	None	0	13	29/12/2015
1785	Animalia	Aves	Columbidae	<i>Geophaps scripta scripta</i>	squatter pigeon (southern subspecies)	V	V	0	17	01/03/2003
1935	Animalia	Aves	Glareolidae	<i>Glareola maldivarum</i>	oriental pratincole	SL	None	0	1	31/01/2002
1971	Animalia	Aves	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail	SL	None	0	9	02/02/2014
1896	Animalia	Aves	Laridae	<i>Hydroprogne caspia</i>	Caspian tern	SL	None	0	18	24/03/2013
1149	Animalia	Aves	Psittacidae	<i>Lathamus discolor</i>	swift parrot	E	CE	0	1	15/05/1983
1863	Animalia	Aves	Scolopacidae	<i>Limicola falcinellus</i>	broad-billed sandpiper	SL	None	0	2	01/03/2003
1867	Animalia	Aves	Scolopacidae	<i>Limosa lapponica baueri</i>	Western Alaskan bar-tailed godwit	V	V	0	5	04/07/2009
1855	Animalia	Aves	Scolopacidae	<i>Limosa limosa</i>	black-tailed godwit	SL	None	0	15	04/11/2004
1844	Animalia	Aves	Scolopacidae	<i>Numenius minutus</i>	little curlew	SL	None	0	6	16/11/2003
1702	Animalia	Aves	Accipitridae	<i>Pandion cristatus</i>	eastern osprey	SL	None	0	4	01/03/2003
860	Animalia	Mammalia	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala	V	V	0	16	28/12/2016
1825	Animalia	Aves	Threskiornithidae	<i>Plegadis falcinellus</i>	glossy ibis	SL	None	0	43	11/02/2018
1944	Animalia	Aves	Charadriidae	<i>Pluvialis fulva</i>	Pacific golden plover	SL	None	0	5	20/11/2004
1578	Animalia	Aves	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail	SL	None	0	1	15/03/1984
1883	Animalia	Aves	Rostratulidae	<i>Rostratula australis</i>	Australian painted snipe	V	E	0	11	01/02/2009
1853	Animalia	Aves	Scolopacidae	<i>Tringa nebularia</i>	common greenshank	SL	None	0	9	20/11/2004
1841	Animalia	Aves	Scolopacidae	<i>Tringa stagnatilis</i>	marsh sandpiper	SL	None	0	25	04/11/2004

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
26403	Plantae	Equisetopsida	Myrtaceae	<i>Melaleuca irbyana</i>	None	E	None	0	1	19/07/2018

Taxon Id: Unique identifier of the taxon from the WildNet database.

NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Endangered (E), Extinct in the Wild (PE), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern(C)).

EPBC: Australian conservation status of the taxon under the *Environment Protection and Biodiversity Conservation Act 1999* (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V)).

Specimens: The number of specimen-backed records of the taxon.

Records: The total number of records of the taxon.

Last record: Date of latest record of the taxon.

Links and Support

Other sites that deliver species information from the WildNet database include:

- [Species profile search](#) - access species information approved for publication including species names, statuses, notes, images, distribution maps and records
- [Species lists](#) - generate species lists for Queensland protected areas, forestry areas, local governments and areas defined using coordinates
- [Biomaps](#) - view biodiversity information, including species information approved for publication, and generate reports
- [Qld wildlife data API](#) - access species information approved for publication such as notes, images and records etc.
- [WetlandMaps](#) - view species records, survey locations etc. approved for publication
- [WetlandSummary](#) - view wildlife statistics, species lists for a range of area types, and access species profiles
- [Generalised distribution and densities of Queensland wildlife](#) - Queensland species distributions and densities generalised to a 10 km grid resolution
- [Conservation status of Queensland wildlife](#) - access current lists of priority species for Queensland including nomenclature and status information
- [Queensland Confidential Species](#) - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the [WildNet Team](#).

Other useful sites for accessing biodiversity data include:

- [Queensland Government Data](#)
- [Atlas of Living Australia](#)
- [OZCAM - Online Zoological Collections of Australian Museums](#)
- [AVH - Australia's Virtual Herbarium](#)
- [Protected Matters Search Tool](#)

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government, to the maximum extent permitted by law, makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.





EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 18/04/19 10:26:44

[Summary](#)

[Details](#)

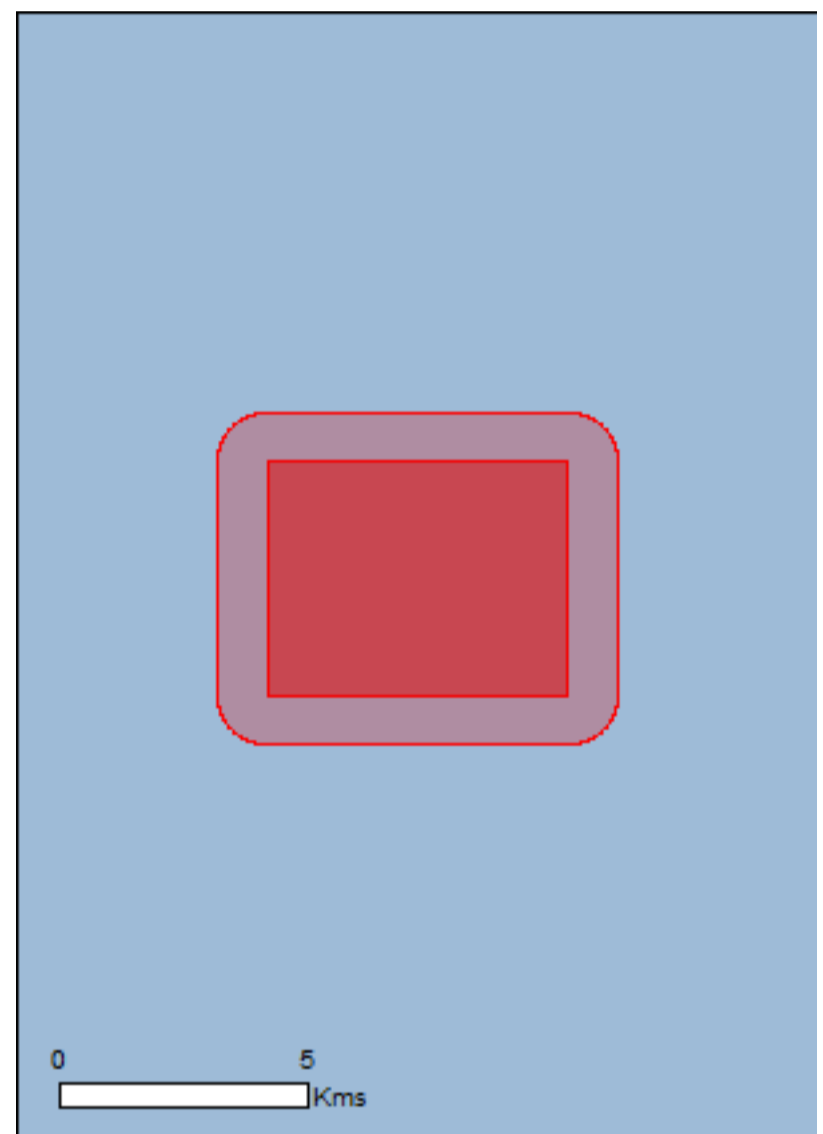
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

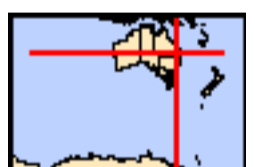
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

[Buffer: 1.0Km](#)



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	31
Listed Migratory Species:	18

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	27
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	29
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Moreton bay	50 - 100km upstream
Moreton bay	50 - 100km upstream

Listed Threatened Ecological Communities

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Fish		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Phebalium distans Mt Berryman Phebalium [81869]	Critically Endangered	Species or species

Name	Status	Type of Presence
Samadera bidwillii Quassia [29708]	Vulnerable	habitat may occur within area Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species

Name	Threatened	Type of Presence
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		habitat known to occur within area Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]	
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur

Name	Status	Type of Presence
Lepus capensis Brown Hare [127]		within area Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-27.40899 152.4133,-27.40899 152.46797,-27.44647 152.46797,-27.44647 152.4133,-27.40899 152.4133

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

Appendix C – Survey Metadata

Site	Date	Time			Timing	Temperature (°C)	Cloud Cover (8ths)	Precipitation	Wind	
		Start	End	Effort (min)					Velocity	Direction
LIN01	09/04/19	07:16	10:15	180	Morning	20	1	Nil	Calm	
LIN02	09/04/19	10:00	10:15	20	Morning	26	3	Nil	Light	NE
LIN03	09/04/19	15:50	16:10	20	Afternoon	29	3	Nil	Light	NE
LIN04	09/04/19	16:32	16:42	10	Afternoon	26	3	Nil	Light	N
LIN05	10/04/19	07:19	08:13	56	Morning	22	2	Nil	Calm	
LIN06	10/04/19	08:14	08:30	16	Morning	26	2	Nil	Calm	
LIN07	10/04/19	08:35	09:36	61	Morning	27	7	Nil	Moderate	E
LIN08	10/04/19	09:40	10:00	20	Morning	27	7	Nil	Moderate	E
LIN09	10/04/19	14:38	15:18	40	Afternoon	28	5	Nil	Moderate	E
LIN10	10/04/19	15:23	15:33	10	Afternoon	26	4	Nil	Moderate	E
LIN11	11/04/19	07:00	08:42	102	Morning	20	2	Nil	Calm	
LIN12	11/04/19	08:53	10:05	72	Morning	24	1	Nil	Light	SE
LIN13	11/04/19	14:38	15:28	40	Afternoon	26	4	Nil	Calm	E
LIN14	11/04/19	15:30	16:03	33	Afternoon	27	2	Nil	Moderate	E
LIN15	12/04/19	07:07	08:24	77	Morning	20	2	Nil	Calm	
LIN16	12/04/19	08:31	09:10	40	Morning	24	1	Nil	Calm	NW
LIN17	12/04/19	14:30	15:55	85	Afternoon	24	7	Nil	Moderate	E
LIN18	12/04/19	16:00	16:19	19	Afternoon	20	8	Nil	Moderate	E
LIN19	13/04/19	07:00	08:22	82	Morning	18	1	Nil	Calm	
LIN20	13/04/19	13:45	16:15	150	Afternoon	26	3	Nil	Calm	E
SHR01	09/04/19	06:03	07:03	60	Morning	18	0	Nil	Calm	
SHR02	09/04/19	16:45	17:45	60	Afternoon	25	5	Nil	Light	N

SHR03	10/04/19	05:55	06:55	60	Morning	19	2	Nil	Light	NE
SHR04	10/04/19	16:42	17:42	60	Afternoon	25	5	Nil	Moderate	E
SHR05a	11/04/19	05:50	06:20	30	Morning	18	4	Nil	Calm	
SHR05b	11/04/19	06:20	06:50	30	Morning	20	2	Nil	Calm	
SHR06	11/04/19	16:38	17:48	70	Afternoon	23	3	Nil	Moderate	E
SHR07	12/04/19	05:52	06:52	60	Morning	15	1	Nil	Calm	NW
SHR08	12/04/19	16:34	17:35	61	Afternoon	20	8	Light Drizzle	Moderate	E
SHR09	13/04/19	05:49	06:49	60	Morning	16	0	Nil	Calm	NW
SHR10	13/04/19	16:17	17:17	60	Afternoon	24	5	Nil	Light	E
STM01	09/04/19	09:00	09:10	10	Morning	25	2	Nil	Light	NE
STM02	09/04/19	16:20	16:30	10	Afternoon	28	3	Nil	Light	N
STM03	10/04/19	15:35	15:45	10	Afternoon	25	4	Nil	Moderate	E
STM04	10/04/19	15:49	15:59	10	Afternoon	25	4	Nil	Moderate	E
STM05	10/04/19	16:06	16:16	10	Afternoon	25	4	Nil	Moderate	E

Appendix D – Species List

Scientific Name	Common Name	NC Act	EPBC Act
Accipitriformes			
Accipitridae (Eagles, Kites, Goshawks)			
<i>Accipiter fasciatus</i>	brown goshawk	C	
<i>Aquila audax</i>	wedge-tailed eagle	C	
<i>Circus approximans</i>	swamp harrier	C	
<i>Circus assimilis</i>	spotted harrier	C	
<i>Elanus axillaris</i>	black-shouldered kite	C	
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	C	
<i>Haliastur sphenurus</i>	whistling kite	C	
Anseriformes			
Anatidae (Ducks, Geese and Swans)			
<i>Anas gracilis</i>	grey teal	C	
<i>Anas rhynchos</i>	Australasian shoveler	C	
<i>Anas superciliosa</i>	Pacific black duck	C	
<i>Anser anser</i>	greylag goose [domestic type]	I	
<i>Aythya australis</i>	hardhead	C	
<i>Chenonetta jubata</i>	Australian wood duck	C	
<i>Cygnus atratus</i>	black swan	C	
<i>Dendrocygna arcuata</i>	wandering whistling-duck	C	
<i>Malacorhynchus membranaceus</i>	pink-eared duck	C	
<i>Stictonetta naevosa</i>	freckled duck	C	
Charadriiformes			
Charadriidae (Plovers, Dotterel and Lapwings)			
<i>Euseyonis melanops</i>	black-fronted dotterel	C	
<i>Vanellus miles</i> subsp. <i>novaehollandiae</i>	masked lapwing (black-shouldered)	C	
Laridae (Gulls, Terns and Noddies)			
<i>Chlidonias hybrida</i>	whiskered tern	C	
<i>Chroicocephalus novaehollandiae</i>	silver gull	C	
<i>Gelochelidon nilotica</i>	gull-billed tern	SL	Migratory
<i>Hydroprogne caspia</i>	Caspian tern	SL	Migratory
Recurvirostridae (Stilts and Avocets)			
<i>Himantopus himantopus</i>	black-winged (pied) stilt	C	
<i>Recurvirostra novaehollandiae</i>	red-necked avocet	C	
Scolopacidae (Snipe, Sandpipers, Godwits, Curlew, Stints and Phalaropes)			
<i>Calidris acuminata</i>	sharp-tailed sandpiper	SL	Migratory
<i>Gallinago hardwickii</i>	Latham's snipe	SL	Migratory
<i>Limosa limosa</i>	black-tailed godwit	SL	Migratory

Scientific Name	Common Name	NC Act	EPBC Act
Columbiformes			
Columbidae (Pigeons and Doves)			
<i>Geopelia humeralis</i>	bar-shouldered dove	C	
<i>Ocyphaps lophotes</i>	crested pigeon	C	
Coraciiformes			
Halcyonidae (Kingfishers)			
<i>Dacelo novaeguineae</i>	laughing kookaburra	C	
Falconiformes			
Falconidae (Falcons)			
<i>Falco berigora</i>	brown falcon	C	
<i>Falco cenchroides</i>	nankeen kestrel	C	
<i>Falco longipennis</i>	Australian hobby	C	
<i>Falco</i> sp.	a falcon	C	
Galliformes			
Phasianidae (Pheasants and Quail)			
<i>Coturnix ypsilophora</i>	brown quail	C	
Pelecaniformes			
Anhingidae (Darter)			
<i>Anhinga novaehollandiae</i>	Australasian darter	C	
Ardeidae (Hérons, Egrets and Bitterns)			
<i>Ardea alba</i> subsp. <i>modesta</i>	eastern great egret	C	
<i>Ardea intermedia</i>	intermediate egret	C	
<i>Ardea pacifica</i>	white-necked heron	C	
<i>Bubulcus ibis</i>	cattle egret	C	
<i>Egretta garzetta</i>	little egret	C	
<i>Egretta novaehollandiae</i>	white-faced heron	C	
Ciconiidae (Storks)			
<i>Ephippiorhynchus asiaticus</i>	black-necked stork	C	
Pelecanidae (Pelicans)			
<i>Pelecanus conspicillatus</i>	Australian pelican	C	
Phalacrocoracidae (Cormorants and Shags)			
<i>Microcarbo melanoleucos</i>	little pied cormorant	C	
<i>Phalacrocorax carbo</i>	great cormorant	C	
<i>Phalacrocorax sulcirostris</i>	little black cormorant	C	
<i>Phalacrocorax varius</i>	pied cormorant	C	
Threskiornithidae (Ibis and Spoonbills)			
<i>Platalea flavipes</i>	yellow-billed spoonbill	C	
<i>Platalea regia</i>	royal spoonbill	C	

Seqwater

Atkinson Dam Threatened Bird Survey
April 2019

Scientific Name	Common Name	NC Act	EPBC Act
<i>Plegadis falcinellus</i>	glossy ibis	SL	Migratory
<i>Threskiornis spinicollis</i>	straw-necked ibis	C	
Podicipiformes			
Podicipedidae (Grebes)			
<i>Podiceps cristatus</i>	great crested grebe	C	
<i>Poliocephalus poliocephalus</i>	hoary-headed grebe	C	
<i>Tachybaptus novaehollandiae</i>	Australasian grebe	C	
Psittaciformes			
Cacatuidae (Cockatoos and Corellas)			
<i>Cacatua galerita</i>	sulphur-crested cockatoo	C	
<i>Cacatua sanguinea</i>	little corella	C	
<i>Calyptorhynchus funereus</i>	yellow-tailed black-cockatoo	C	
<i>Eolophus roseicapilla</i>	galah	C	
Psittacidae (Parrots, Lorikeets and Rosellas)			
<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)	C	
<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet	C	
<i>Trichoglossus haematodus</i> subsp. <i>moluccanus</i>	rainbow lorikeet	C	
Passeriformes			
Acrocephalidae (Reed-Warblers)			
<i>Acrocephalus australis</i>	Australian reed-warbler	C	
Artamidae (Woodswallows, Currawongs, Butcherbirds and Magpie)			
<i>Cracticus nigrogularis</i>	pied butcherbird	C	
<i>Cracticus tibicen</i>	Australian magpie	C	
<i>Cracticus torquatus</i>	grey butcherbird	C	
Campephagidae (Cuckoo-shrikes and Trillers)			
<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike	C	
Cisticolidae (Cisticolas)			
<i>Cisticola exilis</i>	golden-headed cisticola	C	
Corvidae (Crows and Ravens)			
<i>Corvus orru</i>	Torresian crow	C	
Estrildidae (Weaver Finches)			
<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin	C	
<i>Neochmia modesta</i>	plum-headed finch	C	
Hirundinidae (Swallows and Martins)			
<i>Hirundo neoxena</i>	welcome swallow	C	
<i>Petrochelidon ariel</i>	fairy martin	C	
<i>Petrochelidon nigricans</i>	tree martin	C	

Seqwater

Atkinson Dam Threatened Bird Survey

April 2019

Scientific Name	Common Name	NC Act	EPBC Act
Maluridae (Fairy-wrens, Emu-wrens and Grasswrens)			
<i>Malurus melanocephalus</i>	red-backed fairy-wren	C	
Megaluridae (Grassbirds)			
<i>Megalurus timoriensis</i>	tawny grassbird	C	
Meliphagidae (Honeyeaters and Chats)			
<i>Entomyzon cyanotis</i>	blue-faced honeyeater	C	
<i>Manorina melanocephala</i>	noisy miner	C	
<i>Plectorhyncha lanceolata</i>	striped honeyeater	C	
Monarchidae (Monarch and Flycatchers)			
<i>Grallina cyanoleuca</i>	magpie-lark	C	
Motacillidae (Pipits and Wagtails)			
<i>Anthus novaeseelandiae</i>	Australasian pipit	C	
Pardalotidae (Pardalotes)			
<i>Pardalotus striatus</i>	striated pardalote	C	
Rhipiduridae (Fantails)			
<i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i>	willie wagtail (southern)	C	

Appendix E – Survey Data

Site Code	Scientific Name	Common Name	Quantity
LIN01	<i>Circus approximans</i>	swamp harrier	x
	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchotis</i>	Australasian shoveler	x
	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Chroicocephalus novaehollandiae</i>	silver gull	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	x
	<i>Falco berigora</i>	brown falcon	x
	<i>Coturnix ypsilophora</i>	brown quail	x
	<i>Anhinga novaehollandiae</i>	Australasian darter	x
	<i>Ardea alba modesta</i>	eastern great egret	x
	<i>Egretta garzetta</i>	little egret	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Phalacrocorax carbo</i>	great cormorant	x
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	x
	<i>Phalacrocorax varius</i>	pied cormorant	x
	<i>Platalea flavipes</i>	yellow-billed spoonbill	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Cacatua sanguinea</i>	little corella	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Cisticola exilis</i>	golden-headed cisticola	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin	x
	<i>Neochmia modesta</i>	plum-headed finch	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Petrochelidon ariel</i>	fairy martin	x
<i>Petrochelidon nigricans</i>	tree martin	x	
<i>Grallina cyanoleuca</i>	magpie-lark	x	
<i>Anthus novaeseelandiae</i>	Australasian pipit	x	
LIN02	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Petrochelidon ariel</i>	fairy martin	x
	<i>Petrochelidon nigricans</i>	tree martin	x

Site Code	Scientific Name	Common Name	Quantity
LIN03	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Cracticus torquatus</i>	grey butcherbird	x
LIN04	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x
LIN05	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchotis</i>	Australasian shoveler	x
	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Aythya australis</i>	hardhead	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Dendrocygna arcuata</i>	wandering whistling-duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Coturnix ypsilophora</i>	brown quail	x
	<i>Anhinga novaehollandiae</i>	Australasian darter	x
	<i>Pelecanus conspicillatus</i>	Australian pelican	x
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	x
	<i>Phalacrocorax varius</i>	pied cormorant	x
	<i>Platalea flavipes</i>	yellow-billed spoonbill	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Cracticus tibicen</i>	Australian magpie	x
<i>Corvus orru</i>	Torresian crow	x	
<i>Hirundo neoxena</i>	welcome swallow	x	
<i>Petrochelidon ariel</i>	fairy martin	x	
<i>Petrochelidon nigricans</i>	tree martin	x	
LIN06	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Petrochelidon nigricans</i>	tree martin	x
	<i>Anthus novaeseelandiae</i>	Australasian pipit	x
LIN07	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchotis</i>	Australasian shoveler	x
	<i>Aythya australis</i>	hardhead	x
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Chlidonias hybrida</i>	whiskered tern	x
	<i>Chroicocephalus novaehollandiae</i>	silver gull	x

Site Code	Scientific Name	Common Name	Quantity
LIN07 cont'd	<i>Gelochelidon nilotica</i>	gull-billed tern	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	x
	<i>Anhinga novaehollandiae</i>	Australasian darter	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Pelecanus conspicillatus</i>	Australian pelican	x
	<i>Phalacrocorax varius</i>	pied cormorant	x
	<i>Platalea flavipes</i>	yellow-billed spoonbill	x
	<i>Platalea regia</i>	royal spoonbill	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
LIN08	<i>Circus approximans</i>	swamp harrier	x
	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
LIN09	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchotis</i>	Australasian shoveler	x
	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	x
	<i>Ephippiorhynchus asiaticus</i>	black-necked stork	x
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	x
	<i>Platalea flavipes</i>	yellow-billed spoonbill	x
	<i>Plegadis falcinellus</i>	glossy ibis	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x
LIN10	<i>Aquila audax</i>	wedge-tailed eagle	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Corvus orru</i>	Torresian crow	x
LIN11	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchotis</i>	Australasian shoveler	x

Site Code	Scientific Name	Common Name	Quantity
LIN11 cont'd	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Chroicocephalus novaehollandiae</i>	silver gull	x
	<i>Hydroprogne caspia</i>	Caspian tern	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	x
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	x
	<i>Limosa limosa</i>	black-tailed godwit	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Phalacrocorax carbo</i>	great cormorant	x
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	x
	<i>Phalacrocorax varius</i>	pied cormorant	x
	<i>Plegadis falcinellus</i>	glossy ibis	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Cacatua sanguinea</i>	little corella	x
	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Neochmia modesta</i>	plum-headed finch	x
<i>Grallina cyanoleuca</i>	magpie-lark	x	
<i>Pardalotus striatus</i>	striated pardalote	x	
LIN12	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Falco berigora</i>	brown falcon	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Corvus orru</i>	Torresian crow	x
<i>Anthus novaeseelandiae</i>	Australasian pipit	x	
LIN13	<i>Elanus axillaris</i>	black-shouldered kite	x
	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Ardea pacifica</i>	white-necked heron	x
	<i>Bubulcus ibis</i>	cattle egret	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Cracticus nigrogularis</i>	pied butcherbird	x

Site Code	Scientific Name	Common Name	Quantity
LIN13 cont'd	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Pardalotus striatus</i>	striated pardalote	x
LIN14	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Chenonetta jubata</i>	Australian wood duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Ardea intermedia</i>	intermediate egret	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Plegadis falcinellus</i>	glossy ibis	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)	x
	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
	<i>Anthus novaeseelandiae</i>	Australasian pipit	x
LIN15	<i>Accipiter fasciatus</i>	brown goshawk	x
	<i>Circus approximans</i>	swamp harrier	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Aythya australis</i>	hardhead	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Pelecanus conspicillatus</i>	Australian pelican	x
	<i>Poliocephalus poliocephalus</i>	hoary-headed grebe	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Acrocephalus australis</i>	Australian reed-warbler	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Cisticola exilis</i>	golden-headed cisticola	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Malurus melanocephalus</i>	red-backed fairy-wren	x
	<i>Megalurus timoriensis</i>	tawny grassbird	x
	<i>Plectorhyncha lanceolata</i>	striped honeyeater	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
	LIN16	<i>Circus approximans</i>	swamp harrier
<i>Anas gracilis</i>		grey teal	x

Site Code	Scientific Name	Common Name	Quantity
LIN16 cont'd	<i>Anas rhynchos</i>	Australasian shoveler	x
	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Aythya australis</i>	hardhead	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Dendrocygna arcuata</i>	wandering whistling-duck	x
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	x
	<i>Stictonetta naevosa</i>	freckled duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Pelecanus conspicillatus</i>	Australian pelican	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Cisticola exilis</i>	golden-headed cisticola	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Petrochelidon ariel</i>	fairy martin	x
	<i>Petrochelidon nigricans</i>	tree martin	x
	<i>Megalurus timoriensis</i>	tawny grassbird	x
	<i>Pardalotus striatus</i>	striated pardalote	x
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x	
LIN17	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	x
	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchos</i>	Australasian shoveler	x
	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Aythya australis</i>	hardhead	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Chroicocephalus novaehollandiae</i>	silver gull	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	x
	<i>Limosa limosa</i>	black-tailed godwit	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Ardea alba modesta</i>	eastern great egret	x
	<i>Bubulcus ibis</i>	cattle egret	x
	<i>Pelecanus conspicillatus</i>	Australian pelican	x
<i>Platalea flavipes</i>	yellow-billed spoonbill	x	
<i>Platalea regia</i>	royal spoonbill	x	
<i>Plegadis falcinellus</i>	glossy ibis	x	

Site Code	Scientific Name	Common Name	Quantity
LIN17 cont'd	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x
LIN18	<i>Anas gracilis</i>	grey teal	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Cracticus torquatus</i>	grey butcherbird	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Petrochelidon ariel</i>	fairy martin	x
	<i>Petrochelidon nigricans</i>	tree martin	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
	<i>Anthus novaeseelandiae</i>	Australasian pipit	x
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x
LIN19	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Chenonetta jubata</i>	Australian wood duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Dacelo novaeguineae</i>	laughing kookaburra	x
	<i>Ardea intermedia</i>	intermediate egret	x
	<i>Ardea pacifica</i>	white-necked heron	x
	<i>Egretta novaehollandiae</i>	white-faced heron	x
	<i>Microcarbo melanoleucos</i>	little pied cormorant	x
	<i>Phalacrocorax carbo</i>	great cormorant	x
	<i>Plegadis falcinellus</i>	glossy ibis	x
	<i>Threskiornis spinicollis</i>	straw-necked ibis	x
	<i>Cacatua sanguinea</i>	little corella	x
	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)	x
	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet	x
	<i>Cracticus nigrogularis</i>	pied butcherbird	x
	<i>Cracticus tibicen</i>	Australian magpie	x
	<i>Cracticus torquatus</i>	grey butcherbird	x
	<i>Cisticola exilis</i>	golden-headed cisticola	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Neochmia modesta</i>	plum-headed finch	x
	<i>Petrochelidon ariel</i>	fairy martin	x
	<i>Malurus melanocephalus</i>	red-backed fairy-wren	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
<i>Anthus novaeseelandiae</i>	Australasian pipit	x	

Site Code	Scientific Name	Common Name	Quantity
LIN19 cont'd	<i>Pardalotus striatus</i>	striated pardalote	x
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x
LIN20	<i>Circus assimilis</i>	spotted harrier	x
	<i>Elanus axillaris</i>	black-shouldered kite	x
	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	x
	<i>Haliastur sphenurus</i>	whistling kite	x
	<i>Anas gracilis</i>	grey teal	x
	<i>Anas rhynchotis</i>	Australasian shoveler	x
	<i>Anas superciliosa</i>	Pacific black duck	x
	<i>Aythya australis</i>	hardhead	x
	<i>Cygnus atratus</i>	black swan	x
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	x
	<i>Stictonetta naevosa</i>	freckled duck	x
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	x
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	x
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	x
	<i>Limosa limosa</i>	black-tailed godwit	x
	<i>Dacelo novaeguineae</i>	laughing kookaburra	x
	<i>Falco cenchroides</i>	nankeen kestrel	x
	<i>Falco sp.</i>	a falcon	x
	<i>Anhinga novaehollandiae</i>	Australasian darter	x
	<i>Ephippiorhynchus asiaticus</i>	black-necked stork	x
	<i>Platalea flavipes</i>	yellow-billed spoonbill	x
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	x
	<i>Corvus orru</i>	Torresian crow	x
	<i>Neochmia modesta</i>	plum-headed finch	x
	<i>Hirundo neoxena</i>	welcome swallow	x
	<i>Petrochelidon ariel</i>	fairy martin	x
	<i>Petrochelidon nigricans</i>	tree martin	x
	<i>Entomyzon cyanotis</i>	blue-faced honeyeater	x
	<i>Manorina melanocephala</i>	noisy miner	x
	<i>Grallina cyanoleuca</i>	magpie-lark	x
	<i>Pardalotus striatus</i>	striated pardalote	x
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	x	
SHR01	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	2
	<i>Haliastur sphenurus</i>	whistling kite	2
	<i>Anas gracilis</i>	grey teal	2
	<i>Anas rhynchotis</i>	Australasian shoveler	9

Site Code	Scientific Name	Common Name	Quantity
SHR01 cont'd	<i>Anas superciliosa</i>	Pacific black duck	4
	<i>Cygnus atratus</i>	black swan	60
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	16
	<i>Chlidonias hybrida</i>	whiskered tern	5
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	90
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	60
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	2
	<i>Coturnix ypsilophora</i>	brown quail	1
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Ardea alba modesta</i>	eastern great egret	1
	<i>Ardea intermedia</i>	intermediate egret	7
	<i>Pelecanus conspicillatus</i>	Australian pelican	1
	<i>Phalacrocorax carbo</i>	great cormorant	2
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	4
	<i>Platalea regia</i>	royal spoonbill	1
	<i>Plegadis falcinellus</i>	glossy ibis	4
	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)	1
	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet	1
	<i>Acrocephalus australis</i>	Australian reed-warbler	1
	<i>Cracticus tibicen</i>	Australian magpie	1
<i>Hirundo neoxena</i>	welcome swallow	10	
<i>Petrochelidon nigricans</i>	tree martin	70	
<i>Grallina cyanoleuca</i>	magpie-lark	20	
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	7	
SHR02	<i>Haliastur sphenurus</i>	whistling kite	1
	<i>Anas gracilis</i>	grey teal	5
	<i>Anas rhynchotis</i>	Australasian shoveler	30
	<i>Cygnus atratus</i>	black swan	13
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	13
	<i>Chlidonias hybrida</i>	whiskered tern	3
	<i>Chroicocephalus novaehollandiae</i>	silver gull	2
	<i>Gelochelidon nilotica</i>	gull-billed tern	35
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	140
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	6
	<i>Geopelia humeralis</i>	bar-shouldered dove	1
	<i>Anhinga novaehollandiae</i>	Australasian darter	4
	<i>Bubulcus ibis</i>	cattle egret	17
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	4

Site Code	Scientific Name	Common Name	Quantity
SHR02 cont'd	<i>Platalea regia</i>	royal spoonbill	1
	<i>Plegadis falcinellus</i>	glossy ibis	7
	<i>Cacatua sanguinea</i>	little corella	40
	<i>Cracticus tibicen</i>	Australian magpie	1
	<i>Corvus orru</i>	Torresian crow	3
	<i>Neochmia modesta</i>	plum-headed finch	11
	<i>Hirundo neoxena</i>	welcome swallow	15
	<i>Grallina cyanoleuca</i>	magpie-lark	22
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	9
SHR03	<i>Circus approximans</i>	swamp harrier	1
	<i>Cygnus atratus</i>	black swan	2
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	5
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	60
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	1
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	17
	<i>Limosa limosa</i>	black-tailed godwit	2
	<i>Coturnix ypsilophora</i>	brown quail	2
	<i>Anhinga novaehollandiae</i>	Australasian darter	1
	<i>Egretta novaehollandiae</i>	white-faced heron	1
	<i>Pelecanus conspicillatus</i>	Australian pelican	1
	<i>Phalacrocorax carbo</i>	great cormorant	1
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	5
	<i>Platalea flavipes</i>	yellow-billed spoonbill	1
	<i>Threskiornis spinicollis</i>	straw-necked ibis	1
	<i>Podiceps cristatus</i>	great crested grebe	1
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	9
	<i>Cracticus tibicen</i>	Australian magpie	1
	<i>Cisticola exilis</i>	golden-headed cisticola	1
	<i>Corvus orru</i>	Torresian crow	1
	<i>Hirundo neoxena</i>	welcome swallow	15
	<i>Petrochelidon ariel</i>	fairy martin	1
	<i>Petrochelidon nigricans</i>	tree martin	50
<i>Grallina cyanoleuca</i>	magpie-lark	2	
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1	
SHR04	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	1
	<i>Haliastur sphenurus</i>	whistling kite	2
	<i>Anas gracilis</i>	grey teal	1
	<i>Anas rhynchotis</i>	Australasian shoveler	11

Site Code	Scientific Name	Common Name	Quantity
SHR04 cont'd	<i>Anas superciliosa</i>	Pacific black duck	9
	<i>Cygnus atratus</i>	black swan	12
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	7
	<i>Chroicocephalus novaehollandiae</i>	silver gull	3
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Ardea alba modesta</i>	eastern great egret	1
	<i>Bubulcus ibis</i>	cattle egret	17
	<i>Ephippiorhynchus asiaticus</i>	black-necked stork	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	6
	<i>Platalea regia</i>	royal spoonbill	4
	<i>Plegadis falcinellus</i>	glossy ibis	5
	<i>Corvus orru</i>	Torresian crow	1
	<i>Hirundo neoxena</i>	welcome swallow	20
	<i>Grallina cyanoleuca</i>	magpie-lark	1
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1
SHR05a	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	1
	<i>Haliastur sphenurus</i>	whistling kite	2
	<i>Anas gracilis</i>	grey teal	215
	<i>Anas rhynchotis</i>	Australasian shoveler	60
	<i>Aythya australis</i>	hardhead	57
	<i>Cygnus atratus</i>	black swan	77
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	21
	<i>Chlidonias hybrida</i>	whiskered tern	12
	<i>Chroicocephalus novaehollandiae</i>	silver gull	2
	<i>Gelochelidon nilotica</i>	gull-billed tern	5
	<i>Hydroprogne caspia</i>	Caspian tern	4
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	260
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	300
	<i>Coturnix ypsilophora</i>	brown quail	2
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Ephippiorhynchus asiaticus</i>	black-necked stork	1
	<i>Pelecanus conspicillatus</i>	Australian pelican	7
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	4
	<i>Phalacrocorax varius</i>	pied cormorant	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	8
	<i>Platalea regia</i>	royal spoonbill	2
	<i>Plegadis falcinellus</i>	glossy ibis	4
<i>Poliiocephalus poliocephalus</i>	hoary-headed grebe	3	

Site Code	Scientific Name	Common Name	Quantity
SHR5a cont'd	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	268
	<i>Acrocephalus australis</i>	Australian reed-warbler	1
	<i>Cracticus tibicen</i>	Australian magpie	5
	<i>Corvus orru</i>	Torresian crow	8
	<i>Grallina cyanoleuca</i>	magpie-lark	10
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1
SHR05b	<i>Elanus axillaris</i>	black-shouldered kite	1
	<i>Anas gracilis</i>	grey teal	560
	<i>Anas rhynchotis</i>	Australasian shoveler	5
	<i>Anas superciliosa</i>	Pacific black duck	36
	<i>Aythya australis</i>	hardhead	20
	<i>Cygnus atratus</i>	black swan	27
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	9
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	14
	<i>Chlidonias hybrida</i>	whiskered tern	1
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	20
	<i>Limosa limosa</i>	black-tailed godwit	2
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Egretta novaehollandiae</i>	white-faced heron	1
	<i>Phalacrocorax carbo</i>	great cormorant	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	3
	<i>Plegadis falcinellus</i>	glossy ibis	1
	<i>Platycercus adscitus palliceps</i>	pale-headed rosella (southern form)	1
	<i>Acrocephalus australis</i>	Australian reed-warbler	1
	<i>Cracticus tibicen</i>	Australian magpie	2
	<i>Corvus orru</i>	Torresian crow	9
	<i>Hirundo neoxena</i>	welcome swallow	50
	<i>Petrochelidon ariel</i>	fairy martin	50
<i>Petrochelidon nigricans</i>	tree martin	50	
<i>Grallina cyanoleuca</i>	magpie-lark	7	
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1	
SHR06	<i>Circus approximans</i>	swamp harrier	1
	<i>Circus assimilis</i>	spotted harrier	1
	<i>Anas gracilis</i>	grey teal	200
	<i>Anas rhynchotis</i>	Australasian shoveler	50
	<i>Anas superciliosa</i>	Pacific black duck	20
	<i>Cygnus atratus</i>	black swan	100
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	5

Site Code	Scientific Name	Common Name	Quantity
SHR06	<i>Chlidonias hybrida</i>	whiskered tern	4
	<i>Chroicocephalus novaehollandiae</i>	silver gull	1
	<i>Gelochelidon nilotica</i>	gull-billed tern	40
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	100
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	250
	<i>Ocyphaps lophotes</i>	crested pigeon	
	<i>Falco cenchroides</i>	nankeen kestrel	1
	<i>Falco longipennis</i>	Australian hobby	1
	<i>Coturnix ypsilophora</i>	brown quail	3
	<i>Ardea pacifica</i>	white-necked heron	1
	<i>Egretta garzetta</i>	little egret	1
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	6
	<i>Plegadis falcinellus</i>	glossy ibis	7
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	3
	<i>Eolophus roseicapilla</i>	galah	14
	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet	
	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike	1
	<i>Hirundo neoxena</i>	welcome swallow	5
	<i>Petrochelidon ariel</i>	fairy martin	0
	<i>Petrochelidon nigricans</i>	tree martin	0
<i>Grallina cyanoleuca</i>	magpie-lark	3	
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	3	
SHR07	<i>Circus approximans</i>	swamp harrier	1
	<i>Haliastur sphenurus</i>	whistling kite	2
	<i>Anas gracilis</i>	grey teal	150
	<i>Anas rhynchotis</i>	Australasian shoveler	68
	<i>Anas superciliosa</i>	Pacific black duck	6
	<i>Cygnus atratus</i>	black swan	27
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	4
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	20
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	175
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	225
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	6
	<i>Limosa limosa</i>	black-tailed godwit	2
	<i>Coturnix ypsilophora</i>	brown quail	2
	<i>Anhinga novaehollandiae</i>	Australasian darter	1
	<i>Bubulcus ibis</i>	cattle egret	14
	<i>Ephippiorhynchus asiaticus</i>	black-necked stork	1

Site Code	Scientific Name	Common Name	Quantity
SHR07 cont'd	<i>Pelecanus conspicillatus</i>	Australian pelican	1
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	3
	<i>Plegadis falcinellus</i>	glossy ibis	6
	<i>Threskiornis spinicollis</i>	straw-necked ibis	2
	<i>Cacatua galerita</i>	sulphur-crested cockatoo	2
	<i>Eolophus roseicapilla</i>	galah	2
	<i>Calyptorhynchus funereus</i>	yellow-tailed black-cockatoo	
	<i>Cracticus tibicen</i>	Australian magpie	3
	<i>Cracticus torquatus</i>	grey butcherbird	1
	<i>Corvus orru</i>	Torresian crow	1
	<i>Hirundo neoxena</i>	welcome swallow	0
	<i>Petrochelidon ariel</i>	fairy martin	0
	<i>Grallina cyanoleuca</i>	magpie-lark	18
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1
SHR08	<i>Haliastur sphenurus</i>	whistling kite	1
	<i>Anas gracilis</i>	grey teal	200
	<i>Anas rhynchotis</i>	Australasian shoveler	25
	<i>Anas superciliosa</i>	Pacific black duck	2
	<i>Aythya australis</i>	hardhead	9
	<i>Cygnus atratus</i>	black swan	20
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	15
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	6
	<i>Chroicocephalus novaehollandiae</i>	silver gull	1
	<i>Gelochelidon nilotica</i>	gull-billed tern	45
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	120
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	3
	<i>Coturnix ypsilophora</i>	brown quail	1
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Pelecanus conspicillatus</i>	Australian pelican	4
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	8
	<i>Threskiornis spinicollis</i>	straw-necked ibis	1
	<i>Poliiocephalus poliocephalus</i>	hoary-headed grebe	2
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	90
	<i>Cracticus tibicen</i>	Australian magpie	1
	<i>Corvus orru</i>	Torresian crow	5
	<i>Hirundo neoxena</i>	welcome swallow	15

Site Code	Scientific Name	Common Name	Quantity
SHR08 cont'd	<i>Petrochelidon nigricans</i>	tree martin	200
	<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	3
SHR09	<i>Circus approximans</i>	swamp harrier	1
	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	1
	<i>Haliastur sphenurus</i>	whistling kite	2
	<i>Anas gracilis</i>	grey teal	28
	<i>Anas rhynchotis</i>	Australasian shoveler	8
	<i>Anas superciliosa</i>	Pacific black duck	6
	<i>Aythya australis</i>	hardhead	3
	<i>Chenonetta jubata</i>	Australian wood duck	2
	<i>Cygnus atratus</i>	black swan	15
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	13
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	220
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	250
	<i>Calidris acuminata</i>	sharp-tailed sandpiper	5
	<i>Limosa limosa</i>	black-tailed godwit	1
	<i>Dacelo novaeguineae</i>	laughing kookaburra	2
	<i>Falco longipennis</i>	Australian hobby	1
	<i>Egretta novaehollandiae</i>	white-faced heron	1
	<i>Plegadis falcinellus</i>	glossy ibis	2
	<i>Threskiornis spinicollis</i>	straw-necked ibis	4
	<i>Poliiocephalus poliocephalus</i>	hoary-headed grebe	2
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	100
	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet	20
	<i>Cracticus tibicen</i>	Australian magpie	3
	<i>Corvus orru</i>	Torresian crow	2
	<i>Hirundo neoxena</i>	welcome swallow	4
	<i>Petrochelidon ariel</i>	fairy martin	100
	<i>Petrochelidon nigricans</i>	tree martin	100
	<i>Manorina melanocephala</i>	noisy miner	3
<i>Plectorhyncha lanceolata</i>	striped honeyeater	1	
<i>Grallina cyanoleuca</i>	magpie-lark	3	
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1	
SHR10	<i>Circus assimilis</i>	spotted harrier	1
	<i>Elanus axillaris</i>	black-shouldered kite	1
	<i>Haliastur sphenurus</i>	whistling kite	1
	<i>Anas gracilis</i>	grey teal	40
	<i>Anas rhynchotis</i>	Australasian shoveler	4

Site Code	Scientific Name	Common Name	Quantity
SHR10 cont'd	<i>Anas superciliosa</i>	Pacific black duck	22
	<i>Aythya australis</i>	hardhead	4
	<i>Cygnus atratus</i>	black swan	80
	<i>Malacorhynchus membranaceus</i>	pink-eared duck	34
	<i>Stictonetta naevosa</i>	freckled duck	13
	<i>Chlidonias hybrida</i>	whiskered tern	4
	<i>Gelochelidon nilotica</i>	gull-billed tern	9
	<i>Hydroprogne caspia</i>	Caspian tern	1
	<i>Himantopus himantopus</i>	black-winged (pied) stilt	60
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	40
	<i>Coturnix ypsilophora</i>	brown quail	2
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Egretta novaehollandiae</i>	white-faced heron	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	2
	<i>Plegadis falcinellus</i>	glossy ibis	1
	<i>Poliocephalus poliocephalus</i>	hoary-headed grebe	3
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	80
	<i>Lonchura castaneothorax</i>	chestnut-breasted mannikin	2
	<i>Neochmia modesta</i>	plum-headed finch	70
	<i>Hirundo neoxena</i>	welcome swallow	1
<i>Petrochelidon ariel</i>	fairy martin	50	
<i>Petrochelidon nigricans</i>	tree martin	10	
<i>Grallina cyanoleuca</i>	magpie-lark	2	
<i>Rhipidura leucophrys leucophrys</i>	willie wagtail (southern)	1	
STM01	<i>Haliastur sphenurus</i>	whistling kite	2
	<i>Anas gracilis</i>	grey teal	400
	<i>Anas rhynchos</i>	Australasian shoveler	20
	<i>Anas superciliosa</i>	Pacific black duck	220
	<i>Anser anser</i>	greylag goose [domestic type]	7
	<i>Vanellus miles novaehollandiae</i>	masked lapwing (black-shouldered)	42
	<i>Gelochelidon nilotica</i>	gull-billed tern	11
	<i>Recurvirostra novaehollandiae</i>	red-necked avocet	70
	<i>Anhinga novaehollandiae</i>	Australasian darter	2
	<i>Bubulcus ibis</i>	cattle egret	1
	<i>Phalacrocorax sulcirostris</i>	little black cormorant	1
	<i>Platalea flavipes</i>	yellow-billed spoonbill	7
	<i>Threskiornis spinicollis</i>	straw-necked ibis	50
	<i>Corvus orru</i>	Torresian crow	3

Site Code	Scientific Name	Common Name	Quantity
STM01 cont'd	<i>Grallina cyanoleuca</i>	magpie-lark	1
STM02	<i>Ocyphaps lophotes</i>	crested pigeon	1
	<i>Threskiornis spinicollis</i>	straw-necked ibis	1
	<i>Cacatua sanguinea</i>	little corella	19
	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet	5
	<i>Cracticus torquatus</i>	grey butcherbird	2
	<i>Malurus melanocephalus</i>	red-backed fairy-wren	4
	<i>Manorina melanocephala</i>	noisy miner	1
STM03	<i>Falco cenchroides</i>	nankeen kestrel	1
	<i>Egretta novaehollandiae</i>	white-faced heron	1
	<i>Plegadis falcinellus</i>	glossy ibis	1
	<i>Threskiornis spinicollis</i>	straw-necked ibis	1
	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	1
	<i>Corvus orru</i>	Torresian crow	1
	<i>Grallina cyanoleuca</i>	magpie-lark	1
STM04	<i>Anas superciliosa</i>	Pacific black duck	2
STM05	<i>Cracticus tibicen</i>	Australian magpie	1
	<i>Cracticus torquatus</i>	grey butcherbird	2